not white
diversity in beginning design education

Shannon Chance, AIA, Editor

PROCEEDINGS of the
20th National Conference on
the Beginning Design Student
Hampton University Department of Architecture
NOT WHITE: Diversity in Beginning Design Education

PROCEEDINGS
of the
20th National Conference on the Beginning Design Student
April 1-3, 2004
Hampton University Department of Architecture

Shannon Chance, AIA, Editor
Assistant Professor of Architecture
Hampton University
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20th National Conference on the Beginning Design Student
Conference Schedule

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<td>Bemis Lab</td>
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<td>1:00-4:45</td>
<td>Sketchup Demonstration</td>
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<td>3:00-4:00</td>
<td>Campus tour I</td>
<td>Leave from Bemis Lab</td>
<td>Alfred Willis /Ronald Kloster</td>
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<td>4:00-5:00</td>
<td>Campus tour II</td>
<td>Leave from Bemis Lab</td>
<td>Alfred Willis /Ronald Kloster</td>
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<td>5:00-6:30</td>
<td>Conference Welcome</td>
<td>McGrew Towers</td>
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<td>6:30-8:00</td>
<td>Reception</td>
<td>Hampton Museum</td>
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<tr>
<td>8:00-8:30</td>
<td>Coffee</td>
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<td>8:00-12:00</td>
<td>Registration</td>
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<td>8:30-10:00</td>
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Session A: Ethnic Vocabularies: Dr. Curtis Sartor, moderator
1. Invisibility: The Modernist Black Culture-Modern Architecture Nexus- Mitchell
2. Preparing Students to See: The Role of Vocabulary in Teaching Diversity in Basic Design- Hoag

Session B: Community and Evolving Programs: Andrew Chin, moderator
1. Beginning with the Beginning in Design Education: A Focus on Historical Awareness- Williams
2. Diversity Found in a Traditional Past- Kloster
3. Middle-America/Meso-America: Rural Aliens in Urban Centers- Rudzinski & Smith

Session C: Understanding Methods of Teaching: Dr. Kendra Smith, moderator
1. Everywhere at Once, Yet Somewhere After All- Hudson
2. Integrating Cognitive Process into Beginning Design Education- Powers
3. Deconstruction of Architectural Education- Montgomery

10:00-10:30 Break

Coffee/ Juice
10:30-12:00 Session Two McGrew Towers

Session A: Design and African-American Heritage: Alfred Willis, moderator
1. Space (Un)veiled: Techne as a means of Manifesting Invisible Cultures in the Beginning Design Studio- Armstrong & Jackson
2. Towards an "Integrated" Design Pedagogy: Exploring Architectural Displacements and the Location of Culture Beyond the Bauhaus Tradition – Kahera
3. The Influence of Multiculturalism and Diversity on Accreditation in Higher Education – Charles

Session B: Diversifying the Profession: Architecture and the HBCU: Melvin Mitchell, moderator
1. Assessing Diversity within College Architecture programs- Brazley & Poggas
3. What I Learned from my Assistantship: The Role of Research Assistantships in Beginning Design Education- Cox, Yates & Powers

Session C: Design and the Body: Dr. Valerie Prince, moderator
1. Beginning with Bodies – Knights
2. Gender, Memory and (Psycho) analysis – Danze
3. Moments of Conviction: The problems and Promises of Nurturing Student’s Emergent Cultural and Personal Identities- Mirochnik

12:00-1:30 Luncheon Keynote McGrew Towers

Welcome Dr. Eric Sheppard, Dean
Welcome Dr. JoAnn Haysbert, Provost & Acting President
"Diversity in Design: The Journal of Inclusive Design Education“ Alex Bitterman and Beth Tauke
Introduction Ted Sawruk
Keynote Address Ramona Austin

Supported by the Graham Foundation for Advanced Studies in the Fine Arts

1:30-3:00 Session Three McGrew Towers

Session A: Learning from Other Cultures: Araya Asgedom, moderator
1. Cultural Perceptions of Form, Proportions and Scale- Gribbin
2. The Permanence of Impermanence: Learning from Sukkot- Klein
3. Designing a Pavilion for the World’s Fair: Celebrating Cultural Specificity in the Twenty-First Century- Bambury

Session B: Learning from “the Others:” Bradford Grant, moderator
1. Studying Difference: A University General Education Course on Diversity and Design- Bitterman & Tauke
2. Diversity Issues within a Multi-Disciplinary Collaborative Program- Selfridge, Zuo, Hoag, Wigfall & Hubbell
3. Investigative Space- van Aalst

Session C: Knowing One’s Self: Dr. Albert Smith, moderator
1. Noticing the Framework: Identity as Subject Matter- Bowman
2. Worldviews and Student Development in the Beginning Studios- Maricak
3. Individual Identity in a Group Assignment- Williams & Williams

Business Meeting for Past and Future Chairs, McGrew Lobby

3:00-3:30 Break Coffee/Soda

3:30-5:00 Session Four McGrew Towers

Session A: Inspired by Other Cultures: LaVerne Wells-Bowie, moderator
1. Patterns of Progression: Diversity as a Matter of Course(s) - Mitchell
2. Who’s Cube is it? – Robinson
3. Secrets of the Cloth - Ruff

Session B: Landscape Places and Spaces: Laura Terry, moderator
1. Using a Sensory- Approach for Analyzing and Representing Sense of Place- Gilchrist, Hansen & Powers
2. Understanding Diversity through Biographical Landscapes- Hou
3. Non-Traditional Access to Design Education- Kagawa

Session C: Designing in Foreign Lands: Jeff Hartnett, moderator
2. An Explicit Demonstration of Diversity in a Beginning Environmental-Design Studio Project- Selfridge
3. Earth Moves: Challenging American Cultural Ground through a Taiwanese Earthquake Memorial Park Competition- Chang

6:00-6:30 Cocktails Hampton Harbor
6:30-8:00 Reception Boat Tour: Ms. Hampton II
### Saturday, 3, April 2004

**7:30- 8:30**  
Coffee/Juice/Danish

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| **Session A: Searching for Identity:** Bruce Lindsey, moderator  
1. Shades of Gray; Diversity and the Beginning Design Student- Smith & Smith  
2. Site as Seeing – the Search for Identity and Meaning- Garcia  
3. A Search for Clarity- Dougan |
| **Session B: Multi-Disciplinary Collaborations:** Jane Britt Greenwood, moderator  
1. Not White (In the Usual Way): A Learning Laboratory for Diversity in Beginning Design Education- Squire  
2. If Diversity Means Envisioning- Wendl, Masterson & Squire  
3. Not White, But a Call for Some(thing)- Sullivan & Boge |
| **Session C: Evolving Visions of Communication:** Dr. Carmina Sanchez, moderator  
1. Representing the Whole- Ficca  
2. Section-Plane Construction from Cube Design- Dobson  
3. Smudge Tool: Integrating Traditional and Digital Techniques and Pedagogy in a Visual Communications Curriculum- Song |

**10:00-10:30**  
Break  
Coffee/Juice

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1. Transforming the Datum: The Readymade Context in the 1st Year Summer Studio- Humphries & Smith  
2. The Postcard Project: The Role of Readymade Objects in the Design Studio- Marjanovic  
| **Session B: Innovative Approaches:** Eric Connell, moderator  
1. Fixing To: Foundation Studio and the Auburn University School of Architecture Rural Studio- Lindsey & Smith  
2. Re-Beginning: Revisiting Foundation Lessons in Later Years- Temkin & Abbate  
3. Developing Diversity through Integrating and Improving upon the Work of Others- Mead |
| **Session C: Discovering Urban Communities:** Charles Rudolph, moderator  
1. Street as Common Place: A Full Scale Project in Search of Boundaries- Temple  
2. Developing the Conscious Student- Brown  
3. Enabling Diverse Populations to Transform the Near Environment- Kane |

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| 1:30-3:00  
Panel Discussion  
Brad Grant, facilitator  
3:00-3:30  
Break | 3:30-5:00  
Open Discussion  
Brad Grant, facilitator |
The National Conference on the Beginning Design Student is an annual event hosted by programs of architecture and allied disciplines in the Western Hemisphere. As foundation-level design instructors in Hampton University’s Department of Architecture program, professor Ted Sawruk and I accepted the invitation to chair the 20th annual Conference on the Beginning Design Student because we wanted to raise diversity awareness among our teaching colleagues.

We hoped to promote diversity in architectural education at the beginning design level. Before this, little attention had been focused on diversity with regard to the first two years of architectural education. While conferences targeted to upper-year architectural educators had already discussed diversity issues -- from race and identity to emerging paradigms and pedagogies -- educators had not dedicated a conference to examining these issues at the foundation level of architectural education. We initiated such a dialogue by titling the 2004 conference *Not White: Diversity in Beginning Design Education*. The event was held April 1-3, 2004, at Hampton University -- an “HBCU” or “Historically Black College / University.” The conference drew 100 participants from architecture programs across the United States, including architectural educators and record numbers of student attendees and presenters.

Intent on discussing “diversity,” we defined this as “practices that include a wide range of people in learning-conducive environments and that explore a full spectrum of architectural ideas.” We envisioned two main foci of the diversity discussion: the first related to the theories and paradigms we perpetuate and the second to the communities of people we teach.

Regarding theories and paradigms, we hoped to challenge the established Beaux Arts and Bauhaus traditions that we feel are both Eurocentric and too commonly utilized by architectural educators worldwide. We sought to promote approaches that integrate a wider spectrum of design concerns into beginning design curricula. We encouraged integrating environmental conservation, material sustainability, new construction technologies, culturally-responsive urban and community design, and other evolving paradigms into early design studios.

Regarding the community of people we teach, we have been concerned with the lack of diversity that architecture programs attract as well as the “culture” or social environments that architectural educators promote within their studios. We have been concerned that most architectural classrooms in the United States do not reflect the racial make up of the nation, and we encouraged architecture educators to develop holistic teaching techniques and strategies that attract and retain increasingly-diverse talent. Presentations in this area ranged from race, gender, and ethnicity to equitable urban space and “fair housing.”

In preparing for the conference, we reviewed the 1995 Report *Building Community* (written by Ernest L. Boyer and Lee D. Mitgang and published by the Carnegie Foundation for the Advancement of Teaching). We also utilized the 2004 *Task Force Report on Studio Culture* published by the American Institute of Architecture Students. The conference agenda was enriched by three keynote speeches, which were sponsored by The Graham Foundation and the United States Department of Housing and Urban Development:

Dr. Sharon E. Sutton, FAIA, presented “Constructing a Cradle of Transformation: Tools for Reinventing Beginning Studio Education.” Dr. Sutton is Director of CEEDS, the Center for Environment, Education, and Design Studies, at the University of Washington. She is a Distinguished Professor of the Association of Collegiate Schools of Architecture (ACSA), former Kellogg National Fellow, and former President of the National Architectural Accrediting Board (NAAB). Her book, *Weaving a Tapestry of Resistance: The Places, Power, and Poetry of a Sustainable Society*, focuses on youth, culture, and the environment.
Ramona Austin presented “Space and Place in African-American Quilts.” Director of Hampton University’s Museum, Ms. Austin was hosting an exhibition entitled A Communion of the Spirits: African-American Quilters, Preservers, and Their Stories during the conference. The conference’s opening reception was held in the exhibition area of the museum.

Dr. Diane Ghirardo presented “What Does an Architect Look Like?” Dr. Ghirardo is Professor of Architecture at the University of Southern California. She has published the books Architecture After Modernism; Mark Mack; Out of Site: A Social Criticism of Architecture; and Building New Communities: New Deal America & Fascist Italy.

The compilation of conference papers included in this book suggests ways to improve the educational environment and to integrate diverse concerns into architectural design projects. The book offers examples of inclusive curricula and projects and we hope that architectural educators will use it as a teaching manual. The essays in this book were selected either by our double-blind, peer-review process or were included by invitation of the conference chairs. Each of the abstracts submitted to the peer-review process was reviewed by three educators from different universities. These reviewers were selected on the basis of their experience and expertise in beginning design education. Each paper selected through this competitive review process received a minimum cumulative score from those three reviewers. To indicate how each individual essay in this book was selected, we have provided a notation at the bottom of the abstract page that was originally submitted by the author, and which proceeds the full essay. The book itself was designed and produced by Shannon Chance but the papers were written and edited by each author.

We extend a special thanks to all who have provided leadership for this conference:

CONFERENCE SUPPORTERS
Hampton University Department of Architecture and Urban Institute
Graham Foundation for Advanced Studies in the Fine Arts
U.S. Department of Housing and Urban Development
Hampton University
Conference Chairs Committee of the National Conference on the Beginning Design Student

KEYNOTE EVENTS
Ramona Austin - supported by Graham Foundation for Advanced Studies in the Fine Arts
Diane Ghirardo, PhD - supported by the U.S. Department of Housing and Urban Development
Sharon E. Sutton, FAIA - supported by Graham Foundation for Advanced Studies in the Fine Arts
Opening speakers: Wayne Mortensen, Alex Bitterman and Beth Tauke

PEER REVIEWERS
Kathryn Clark Albright
Don Armstrong
Abimbola Asojo
Shannon Chance
Dr. Eric Connell
Urs Peter Fluekiger
Jane Britt Greenwood
Jeffrey Hartnett
Martha Abbott Ladner
Igor Marjanovich

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John Selfridge
Linn Song
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Stephen Temple
Claire Ueltschey
Melvin Mitchell

Dr. Carmina Sanchez
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Laura Terry
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Coordinator for Campus Tour on Historic Landmarks
Exhibitions and Digital Technology Coordinator
Coordinator for Campus Tour on Modernism

8 NOT WHITE: Diversity in Beginning Design Education
Architectural discourse of the past decade reflects a growing inclusion of issues related to minority groups. The historical invisibility of these groups, socially as well as in the studio curriculum, is the source of a number of articles and books calling for new studio pedagogies acknowledging these groups’ contributions to the built environment.

However, in spite of this call the architectural legacy of African-Americans and other ethnic minorities remains absent from the design studio. While this legacy occasionally occurs in specialized courses relating to ethnography, material culture and race and architecture, it remains unexamined in the studio context. This is striking given the significant influence that Black and other minority creators have exerted in creative fields such as music and dance.

This paper proposes a curriculum for beginning design studios which attacks the problem of cultural invisibility. The curriculum centers on techne — artisanship as a mode of revealing. Studio projects will be presented which explore techne as found in the material culture of African-Americans: the vernacular landscape, the Black renaissances in the fine arts, and the roots of Black culture emanating from the African Diaspora. The Eurocentric aesthetic of concealing gives way to a multicentric mode of revealing.

Donald E. Armstrong is an Assistant Professor at the Tuskegee University Department of Architecture. He is a registered architect and has received two A.I.A. awards for his work and a Faculty Performance Award for Teaching at Tuskegee University. He has published several papers on the role of self-build construction techniques in African-American history.

Carla J. Jackson, Assoc. A.I.A., NOMA is an Assistant Professor at the Tuskegee University Department of Architecture. A tenured faculty member for four years, her awards include a Faculty Performance Award for Outstanding Service at Tuskegee University, Faculty of the Year in the Department of Architecture (AIAS), Faculty Development Award, and Who’s Who Among America’s Teachers. She is currently pursuing a PhD in Interdisciplinary Studies with a concentration in Architectural Education.
Introduction

“I am invisible, understand, simply because people refuse to see me.” 1 This line from Ralph Ellison’s novel Invisible Man speaks for every marginalized person in America who has felt the majority gaze pass through them. Members of invisible cultures—ethnic minorities, females, gays and lesbians, the impoverished—inhabit a built environment which, for the most part, expresses the values of a mainstream which excludes them. A number of eminent architectural educators have written articles about invisibility calling for new studio pedagogies which acknowledge these groups’ contributions to the built environment.

However, in spite of this call the architectural legacy of these cultures remains invisible in the design studio. While this legacy occasionally occurs in specialized courses relating to ethnography, material culture and race and architecture, it remains relatively unexamined in the studio context. This is striking given the significant influence that minority creators have exerted in other creative fields such as art, music and dance.

This paper contains a curriculum for beginning design studios which attacks the problem of cultural invisibility. The curriculum centers on techne—artsanship as a mode of revealing. Studio projects will be presented which explore techne as found in the material culture of African-Americans: the vernacular landscape, the Black renaissances in the fine arts, and the roots of Black culture emanating from the African Diaspora. It will be shown that, within the right studio environment, the Eurocentric aesthetic of concealing gives way to amulticentric mode of revealing.

Promoting Visibility in the Design Studio

Invisibility plagues today’s architectural design studio despite attempts to eradicate it. Educator Brad Grant, in 1991, wrote one of the first articles on the problem of invisibility in architectural education. He stated, “Architectural education is influenced and directed by a Eurocentric cultural canon, used to facilitate conformity to Western political ideas and social and economic practice. Accordingly, many other social experiences and cultural expressions remain invisible—simply because people are not allowed to see.” 2 Other articles followed on invisibility and diversity in architectural education. The authors of these articles offer a number of types of studio activities designed to combat invisibility. 3

Three kinds of activities are frequently mentioned in this literature: 1) precedent studies of built environments associated with invisible cultures, 2) ethnographic field studies which immerse students in behavior settings associated with invisible cultures, and 3) culturally responsive design projects.

Precedent studies which are culturally focused uncover aesthetic canons outside of prevailing theory. Students learn that marginalized cultures influence mainstream architecture in ways that are often unacknowledged. They learn that the aesthetic codes of these groups often contradict the Western canon, opening up new avenues of design exploration. Students come to understand how the Western canon links architectural aesthetics with hegemonic practices. 4

Ethnographic field research also uncovers invisibility in the built environment. When students visit behavior settings associated with invisible cultures they are more likely to empathize with the members of those cultures. The students see the contradictions between the aesthetics of the subculture and the aesthetics of the Eurocentric canon. By experiencing “shared otherness,” the students understand a cultural world different from theirs. 5

When students design culturally responsive places they engage aesthetic canons outside of mainstream theory. They apply the knowledge obtained from precedent research and ethnographic research. The students acquire the cultural sensitivity necessary in an increasingly multicultural world.

Techne in the Design Studio

The term techne originated in ancient Greece and is associated both with making art and making useful objects. As interpreted by philosopher Martin Heidegger, the essence of techne is that “something concealed comes into unconcealment.” 6 Heidegger states that premodern architecture—as brought forth by techne—reveals the relationship between human beings, nature, and the sacred. Heidegger illustrates this in his description of a Greek temple:

“Standing there, the building holds its ground against the storm raging above it and so first makes the storm itself manifest in its violence. The luster and gleam of the stone, though itself apparently glowing only by the grace of the sun, yet first brings to light the light of the day, the breadth of the sky, the darkness of the night. The temple’s firm towering makes visible the invisible space of air.” 7

The temple manifests the phenomena of nature—storm, sunlight, sky and night—through its materiality and tectonics. According to Heidegger, objects made by techne—as such as the buildings and other material objects produced premodern cultures—have “four causes” to which they are indebted: material, form, use and maker. Design students can explore these causes in their studio projects. 8

The materials of which a building is made reveal themselves by being directly experienced in a particular setting and moment. Premodern builders make construction materials by extracting indigenous raw materials from nature which they work by hand into usable form. These materials abide through the life of the building, transforming due to weather and wear. These traditional materials offer a rich sensual experience of mottled colorations and variegated textures which manifest the natural history of that
particular material in its particular place of origin. They reveal the phenomena of nature which are “first brought to light” by the materials. In the studio, students can explore this potential of materials to un-conceal. They can learn about materiality by, in addition to investigating architectural materials, reflectively and critically examine the materials and tools they use in their own studio work: drawing and modeling media.

Architectural form, the second cause of techne, reveals the “materiality of materials.” Form establishes a building’s character: how it touches the earth and rises to the sky, how it receives sunlight; and how its materials are joined. Form is, according to Heidegger, indebted to material. In the temple, “The rock comes to bear and rest and so first becomes rock; metals come to glitter and shimmer, colors to glow, tones to sing, the word to speak.” Students can explore how form – as presented in the working and assembling of materials — reveals the nature of the materials.

According to Heidegger, architecture consecrates its use, the third cause of techne, when it evokes dwelling: “To dwell, to be set at peace, means to remain at peace within the free sphere that safeguards each thing in its nature. The fundamental character of dwelling is this sparing and preserving.” Architecture brings forth dwelling by “sparing and preserving” nature, community and human identity. In the studio, students can explore how dwelling informs the marriage of material and form, anointing the work of architecture.

The fourth and final cause of techne is the maker. The premodern builder engages materials meaningfully. During building “the corporeal body acts as a sensuous and thoughtful conduit linking the physical sensations of materially grounded activities with their social constitution [producing] awareness, understanding, knowledge, and material products.” According to Heidegger, dwelling proceeds building – the builder approaches the task in a spirit of “sparing and preserving.” Students can explore the role of maker on two levels: making architecture, and making presentation materials such as drawings and models.

Proposed Studio Curriculum

Techne as means of investigating cultural invisibility was introduced as the central theme of the first and second year design studios at Tuskegee University’s Department of Architecture in the spring of 2004. Eminent educator Booker T. Washington founded the Department 1893. The original campus buildings of this historically Black university embody a legacy of techne from its founding years when students made brick and constructed many buildings. Techne also appears in the work of another notable Tuskegee professor, George Washington Carver, who folded aesthetics into science, producing prescient work in agricultural sustainability.

Techne, by it very nature, uncovers and resists invisibility of all kinds, including cultural invisibility. When students consider techne as an aspect of culturally responsive design, learning is enhanced. Students combine the study of architectural precedents associated with invisible cultures with analyses of the types of dwelling that occurs in those cultures. This is especially relevant given the history of Diaspora associated with many marginalized ethnic groups. Techne-based ethnographies provide students with the opportunity to experience the materiality of invisible building technologies. Culturally responsive design becomes an act of placemaking – its objective to evoke the particular style of dwelling experience associated with the subculture which will use the building. Just as the architectural aesthetics of marginalized cultures falls outside of prevailing theory, the definition of “dwelling” for these cultures differs with the Eurocentric interpretation used by Heidegger and imported into architectural theory.

These studio activities center on a single question: How can dwelling for invisible cultures be achieved in the modern Western world? This query is part of a larger question facing architects today: Are dwelling and modernity compatible? Dwelling, as defined by Heidegger and the philosopher’s followers such as Norberg-Schulz, is only achieved through techne as premodern artisanship. This narrow interpretation forecloses any practical application of techne today. The curriculum proposed here calls for a broader, more complex definition of techne. It is based on the belief that new forms of techne, compatible with modernity, are possible. The key aspects of techne: its emphasis on materiality, its connection with dwelling, and, most importantly, its essence as a revealing, can be applied to a transformative critique of architectural modernity. The curriculum proposed here attempts to create platform from which students investigate new, more inclusive forms of dwelling and techne.
The primary learning goal is for the students to be able to use *techne* as a basis for designing culturally responsive places. The learning objectives which must be met by the students in order to reach this goal are:

1. To understand the terms *techne*, invisibility, dwelling, and place
2. To understanding the Eurocentric male bias of the Western architectural canon: canonic buildings, theoretical treatises and educational methods
3. To understand of the four causes of *techne*
4. To be able to make empathetic ethnographies of behavior settings associated with invisible cultures
5. To be able to make precedent studies focusing on built environments associated with invisible cultures as works of *techne*

First Year Studio Curriculum and Projects

The first year studio curriculum emphasizes the *techne* of representational objects – the drawings and models which represent existing, imaginary or proposed works of architecture. The intentional objects of studio investigations are the artifacts directly made by students investigating the idea of dwelling. Materiality and tectonics are emphasized in relation to these anti-factual objects, as modes of revealing. This *techne of representation* manifests invisible cultures.

Project: “The Roots of American Drawing”

In the project entitled “The Roots of American Drawing,” the primary learning objective is for the students to understand how forms of representation such as drawing – as *techne* – can reveal truths about the contributions of minority ethnic cultures to American drawing.

The project was designed to expose the students to the ethnic diversity behind the history of American drawing. Defining ethnicity as “the shared cultural patterns that unite one group and distinguish it from others in the larger society…an expression of common experience based on race, nation, language or religion, or more often some combination of these,” the students’ charge was to make comparative studies between drawings by visible (Euro-American) artists and drawings by invisible (non-Euro-American) artists. 14 (See Figure 1.)

Over the duration of the four week project the students also engaged in 10 hours a week of drawing exercises (drawing from observation) inside and outside of class. During these exercises the students practiced the techniques observed in the studies.

The projects that were the most successful in meeting the learning objectives showed a good analysis of the drawings and the role of ethnic identity in the making of drawings. However, most of the students limited their focus to the role of subject matter in the analysis of ethnic influence. The roles of technique and media were given scant attention.

The project itself, as a learning vehicle, was successful in introducing the students to the notion of invisibility by researching unrecognized works of drawing by minority artists. In future applications of this project a stronger connection will be made between the study of the techniques used by the invisible artists – as influenced by social context – and the application of technique in the students’ drawing exercises. This would allow the students to delve more deeply into issues relating to identity and creative expression.


In the project entitled “The House Personified: Architectural Tropes in Toni Morrison’s *Beloved,*” the primary learning objective is for the students to understand how architecture, as it occurs in the literary imagination, can uncover invisible truths about the oppression of minorities. 15

The students selected passages from Toni Morrison’s novel *Beloved* and made a series of drawings and an assemblage which interpreted the passages. Prior to this, the students researched African-American domestic architecture from the mid 19th Century time period in which the novel takes place. The students made drawings from archival photos of African-American wood-frame vernacular houses and made field sketches of houses in a historically black neighborhood near the Tuskegee campus, the Greenwood subdivision. (See Figure 2.)

The better student projects reflected thoughtful analyses of how Morrison used literary technique to imaginatively recreate a void in the historical record, the lifeworld of female slaves in America. However, some of the drawings and assemblages were less successful in communicating invisibility than the written explanations and tended to be disjointed from the accompanying text.

The project itself, as a learning vehicle, successfully exposed the students to how works of literature can use the poetic imagination to illuminate truths about oppressed cultures. In future applications of the project more time will be spent teaching the students how to make express their ideas in drawings and assemblages. This will be linked with their drawing exercises.

Second Year Studio Curriculum and Projects

The second year studio curriculum focuses on the *techne* of architectural objects, the built environment itself. The intentional objects of studio investigations are *places* – existing and proposed – as sites of dwelling. The roles of materiality and tectonics are emphasized as modes of revealing. This *techne of architecture* thus becomes a means of manifesting invisible cultures. The projects designed for the second year studios focus on using *design* as a form of techne to resist invisibility.

In the project entitled “The Museum of African-American Art,” the primary learning objective is for the students to be able to use the design process to uncover the contributions made to American art by the artists of the Harlem Renaissance.

The students designed a small museum housing a collection of artworks by African and African-American artists. They developed the building’s form, particularly its structural system, to express truths about African-American experience. Prior to designing, the students researched the Harlem Renaissance, focusing on painting, drawing and print-making.

The students began the project by researching the Harlem Renaissance and presenting their analyses in a presentation board and a paper. Next, the students selected two-dimensional works of art by members of the Harlem Renaissance and processed the images into architectural partis. The partis were developed through a systems design process focusing on the integration of space, enclosure and structure. The students made final presentations and a model. While the students were in the early stage of design, the class met in the worship space of the Tuskegee Chapel designed by Paul Rudolph. This space, which has towering brick walls bathed by sunlight entering through clerestory windows, embodies the idea of techne. Following a brief lecture on John Ruskin’s writings on the honest use of materials, the students reflected on the meanings of the Harlem Renaissance and developed concepts for expressing these meanings through materiality. (See Figure 3 and 4.)

The project generated several spirited group discussions. The better projects show a depth of thought concerning the meaning of the Harlem Renaissance which was successfully translated into space and form. However, some projects were based on shallow concepts and simplistic interpretations of the artworks analyzed. Many of the partis resorted to formalism without any real analysis of the Harlem renaissance as a social context.

As a learning vehicle the project engaged the students’ interest in the problem of invisibility. It also led to an understanding of the expressive power of architectural form. In the future, the social context of the Harlem Renaissance, and how it affected the art work, will be emphasized more strongly.

Project: “Sethe’s Hut”

In the project entitled “Sethe’s Hut,” the primary learning objective is for the students to be able to use the design of a diminutive building to explore issues of invisibility connected with an icon from the theory of architecture — “the primitive hut.”

The project “Sethe’s Hut” was designed to introduce the students to issues of invisibility at the scale of the detail. The students designed free-standing open-air pavilions made of local natural materials. Pre-design analyses were made of human scale and African-American vernacular architecture.

The students began by researching African-American and African vernacular buildings with a focus on tectonics — the material units and the details for joining materials. The students presented their findings to the class for discussion. The studio took a sketching trip to a group of early 20th Century Tuskegee Institute agricultural buildings.

As a preliminary exercise the students, working in pairs, drew measured elevation drawings of their partner’s body. The drawings were used to study human scale while making conceptual collages of the front of their “hut”. For their final presentation the students constructed large-scale models of their final design. (See Figures 5-8.)

The students were strongly engaged by this project. The better student projects reflect a clear formal relationship with native African and vernacular traditions while avoiding the temptation to resort to the picturesque. Less successful were the human figure drawings. Also, the collage phase produced trite picturesque images which were dropped during the development phase.

As a learning vehicle, “Sethe’s Hut” was extremely successful in getting the students excited about tectonic expression and in investigating African-American vernacular architecture. Future applications of the project will place more emphasis on the invisible meanings hidden in the notion of “primitive hut.” Also, more structure will be provided on the vernacular architecture studies – especially the idea of techne as embodied in the materials and tectonics of the case studies.
Conclusion

The first and second year students participating in this trial curriculum are engaging with the issues of invisibility, *techne* and culturally responsive design. They passionately participate in studio discussions of these topics and apply their thinking to their course work. As reflexive pedagogy, the curriculum development generates meaningful faculty dialogue which feeds back into the development process. That the issue of cultural invisibility generates such strong interest clearly indicates a desire, by faculty and students, to place more emphasis on culturally responsive design, as a celebration of dwelling.

NOTES

4. Grant, 158.
5. Grant, 152, 161-162 and Dutton, 89.
Preserving the Past and Designing the Future: A Tale of Two Communities

This presentation explores the revitalization through design of two communities that experienced oppression. In the first example, students design a museum of African-American culture in Boley, Oklahoma, to reconstruct the town. In the second example, students design affordable housing in Khayelitsha, South Africa, a squatter settlement that resulted from apartheid.

Boley is a historic African-American town, located in Oklahoma. Blacks that migrated from south to northern and western communities in hopes of escaping oppression around 1900 established the town. A recent project had interior design sophomore studio class design the interiors of the Boley Museum of African-American culture. The design problem was to develop interiors for a museum and an accessible bed and breakfast annex to the existing two-story building on the site, which currently houses the museum collections and an inaccessible bed and breakfast on the second floor. At the beginning of the project, students were presented with case studies from African and African-American culture to expose them to design in cultural settings. Students made several trips to the site to meet with the clients and survey existing conditions. User requirements were developed to include a gallery space, gift shop, outdoor sitting, storage and support facilities, as well as restrooms. Word Analogies and concept squares (Leigh, 2000) were developed based on the precedent studies. These were transformed into three-dimensional abstract models that formed the basis for their concepts and design solutions.

South Africa estimates its total squatter population to be at least 5 million. The objective of this project was to design low-income housing in Cape Town, South Africa. Students were presented a cross-disciplinary survey of Khayelitsha, which focused on design and social issues. The survey explored housing the urban poor in Cape Town through case studies, field research, design aesthetics, analysis of local materials, skills, and construction techniques. The class had several video-conferencing sessions with the students and professors of Technikon University, Pretoria, South Africa. The sessions addressed South African design aesthetics, slums, and squatters, and also involved several design critiques sessions. The students were very sensitive to the issue of apartheid in South Africa and avoided approaching the design solution solely based on the stylistic influences of the apartheid government (Cape Dutch Style). In the design solutions developed, the recurring elements were traditional South African elements, pitched roofs, and natural forms.

These two projects illustrate how students use design to rebuild communities that have experienced oppression. In the case of Boley Museum of African-American culture, design precedents are drawn from African and African-American environments in an effort to revitalize this historical black town. The design proposal was included in a US Department of Transportation grant application by the Boley Economic Development and Redevelopment Authority (BEDRA). In the South African case, an identity free from oppression is proposed by limiting the influences of the Cape Dutch style of the oppressors. Thus restoring pride in the traditional heritage of this long oppressed community.

REFERENCES
Introduction

This presentation explores the revitalization through design of two communities that experienced oppression. In the first example, students propose a museum of African-American culture in Boley, Oklahoma, in an effort to reconstruct the town. In the second example, students propose affordable housing in Khayelitsha, Cape Town, South Africa, a squatter settlement that resulted due to apartheid. In addition to exposing students to cross-cultural and global design perspectives, both projects represent pedagogical models of integrating diverse theories in design creative thinking and problem solving.

Boley Museum of African-American Culture

Boley is a historic African-American town, located in central Okfuskee County in Oklahoma. The town was established by blacks that migrated from south to northern and western communities in hopes of escaping oppression around the turn of the century. It was founded in 1903 by T.M. Haynes as a Creek Indian community and began on 160 acres that was owned by Abigial Burnett McCormick. A recent project in the interior design sophomore studio class at the University of Oklahoma had students design the interior of the Boley Museum of African-American culture for the Boley Economic Development and Redevelopment Authority (BEDRA). Mr. Maurice Lee Jr. the client representative presented the goals of the museum as twofold “firstly to preserve the artifact and history of a very unique town and situation which only occurred in Oklahoma (up to 50 all Black towns in the state of Oklahoma). Secondly, it is to lure tourists to the town to booster our income. Without the museum, there is very little to see. With the museum, there is a super attraction.”

The design problem was to develop interiors for a museum and an accessible bed and breakfast annex to the existing two-story building on the site, which currently houses the museum collections and an inaccessible bed and breakfast on the second floor. The design challenge was designing a creative and economical solution that reflected African-American culture. At the beginning of the project, students were presented with case studies from African and African-American culture to expose them to design in cultural settings. Elements and symbols from traditional African environments were studied along with planning concepts, building forms, materials and construction technology. This had a major impact on their initial conceptual ideas since African-American communities derive much of their aesthetics from traditional African spaces. Students made several trips to the site to meet with the clients and survey the site. User requirements were developed to include a gallery space, gift shop, outdoor sitting, restrooms, storage and support facilities.

Word Analogies and concept squares (Leigh, 2000) were developed based on the precedent studies of cultural, historical, and traditional elements in African societies. These were transformed into three-dimensional abstract models that formed the basis for their concepts and design solutions. The following are the top three solution selected by the clients. One student’s solution was based on the sun and community (Figure 1). The major elements in the design were the gallery displays that radiated out of the gift shop like the sun. This is related to the nature of community in African and African-American spaces where there is a central focus from which other elements evolve. Display partitions are organized to move along a track on the floor, radiating from the gift shop like rays of the sun. They are all independent, yet still part of a whole, thus reinforcing community. Another student based his solution on geometric elements from textile patterns in African spaces. He started by analyzing

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the patterns in two-dimension as a series of points and lines, and then transformed them to three-dimensional abstract forms by extruding the points and lines at different heights. This formed the basis for organizing his space. His final solution was based on a hierarchy of points and lines in space (Figure 2). Another student’s solution was based on simplistic and rustic design elements (Figure 3). Figure 4 illustrates the final design option selected by the clients. Figure 5 illustrates lighting design developed for the selected design option.

Overall, this experience offered students an opportunity to work on a real life community service project, which integrates cultural issues in the built environment. This theoretical concept of utilizing diverse cultures as a basis for studying design elements and principles is critical for design education. In this case, African and African-American cultures are used to derive a solution for this historically black town museum. The methodology presents an approach of introducing diverse design precedents in design education.

Khayelitsha, Cape Town, South Africa

South Africa estimates its total squatter population to be at least 5 million. In Cape Town, as in all of South Africa’s major cities, there are several squatter settlements located near the few African townships in the city. The Western Cape province where Cape Town is located has a racial composition of 60% mixed race, 25% Caucasian, and remaining 15% are African. Founded in 1652, it is the oldest city in Southern Africa. During most of the apartheid era, strict influx control regulations were enforced to prevent large numbers of Eastern Cape Xhosas (Africans) from migrating to Western and compete with coloreds for employment. Some migrants eventually came to Cape Town illegally. Neither the government nor employers provided adequate housing for African workers. This led to overcrowding in single sex dormitories where family members mostly women and children would come to join the male worker in his room. Most women and children were illegal residents in Cape Town under apartheid law. Eventually, as housing shortage increased, Crossroads squatter settlement emerged as an informal township constructed from corrugated iron and other scrap construction materials.

The objective of this project was to have Interior design sophomores design low-income housing in Cape Town, South Africa. Students were presented a cross-disciplinary survey of Khayelitsha which focused on design and social issues. The cross-disciplinary field research was carried out in summer 2000 in five slums and squatters in Cape Town, South Africa. The survey explored housing the urban poor in Cape Town through case studies, field research, design aesthetics, analysis of local materials, skills, and construction techniques. Sample questionnaire included information on age, gender, ethnicity, status in ethnic group, educational level, employment, marital status, number of people in household, number of rooms, sketches of existing house, skills possessed, current building materials, proposed design, access to infrastructure, means of transportation, and prospects for better housing.

Students were presented precedent studies, results from the cross-disciplinary field research, and South African design aesthetics. In the initial design stage students developed schematic sketches of their proposals and had several video conferencing sessions with students and faculty of Technikon, an institution of higher learning in South Africa. In the sessions, students and faculty of Technikon critiqued the design proposals developed by the students. For example, most of the students initial design proposals were too elaborate for low-income type prototypes. They also based a lot of the stylistic influences on the style of the apartheid government in the case of South Africa. This was partly due to the fact that in their research, they came across the Cape Dutch architectural style of the apartheid government in the South Africa. A lot of the traditional architectural styles and influences in South Africa are undocumented and difficult to research. Therefore, students had difficulty finding design precedents on traditional styles in South Africa. After the video conferencing sessions, the student redesigned their proposals after recognizing the need to respond to the cultural, climatic, and material technology issues discussed during the video conferencing sessions. The final designs were presented and critiqued in a final session with interior design and architecture students and faculty of Technikon, South Africa (Figure 6). Reactions from both sides indicated that the experience was positive. The video conferencing sessions offered an opportunity for University of Oklahoma students to learn about low-income housing and design in cultural and international settings.

The several video conferencing sessions made the students very sensitive to the issue of apartheid in South Africa and avoided approaching the design solution solely based on
the stylistic influences of the apartheid government (Cape Dutch Style). Rather they wanted to develop solutions that reflected the inhabitant’s African heritage. In the design solutions developed by the students, the recurring elements were the traditional South African hut, pitched roofs, and natural forms. Cultural-based design and low-income housing were a gray area for students on both sides. The video conferencing sessions offered an opportunity for the students to ask questions and develop a better understanding of the design problem. The South African faculty felt the experience provided an opportunity for their students to research undocumented traditional design styles. Professor Schmidt, the Technikon professor observed that in addition to being a very good educational experience for his students, the exercise was also an eye-opener and thought provoker for them. Annette Sadie, the South African technical facilitator noted it was a wonderful experience for their students who enjoyed every minute of the sessions. They were also curious as to when they could participate again. The South African team also observed that the Oklahoma team was shocked by the limitations of low-income housing in South Africa.

Another major evidence of the impact was in the design proposal developed by the students. Prior to the video conferencing sessions, University of Oklahoma interior design students had difficulty understanding scale, size, spatial requirements, and design aesthetics of a culture different from theirs. The University of Oklahoma students were also enlightened on global social, economic, and political issues. Prior to the project about fifty percent of the class were unaware of apartheid in South Africa. The experience gave the students a global perspective of design and wider perception of the built environment.

Conclusion
These two projects illustrate how students use design to empower and rebuild communities that have experienced oppression. Cross-cultural design studio experiences are imperative for students who intend to practice in a culturally diverse nation and an ever-shrinking global village. In the case of Boley Museum of African-American culture, design precedents are drawn from African and African-American environments in an effort to revitalize this historical black town. The design proposal was included in a US Department of Transportation grant application by the Boley Economic Development and Redevelopment Authority (BEDRA). In the South Africa case, an identity free from oppression is proposed by limiting the influences of the Cape Dutch style of the oppressors. Thus restoring pride in the traditional heritage of this long oppressed community.

REFERENCES
Designing a Pavilion for the World’s Fair: Celebrating Cultural Specificity in the Twenty-First Century

Introduction:
This paper will present the work of an eight week long project developed in the first year studio class of a five year BArch program during the spring semester of 2003. Studio instructors carefully designed the studio exercise in order to expansively open the topic of cultural specificity in both Western and Non-Western Traditions in the architecture of the world. Student research for the studio was supported in the class Introduction to Architecture, a mandatory lecture class.

Background:
The intention of the project was to introduce first year students to the diversity of traditions of the architecture of the world and how each tradition is related to the culture, history, climate and building traditions of the peoples who ‘make’ it. For this purpose, we chose countries from the continents of Africa, Asia, Australia, Europe, North America and South America based on the diversity and distinctiveness of their culture and building traditions. Each student was required to undertake research in order to facilitate the design of a pavilion to represent the country.

Research:
Before the building was programmed, each student was responsible for researching (in the architectural library and on the internet), the culture and indigenous building practice of the designated country and preparing a written and illustrated report. For each country, the major research topics included culture, indigenous building practices, and the work of contemporary architects who included these two aspects.

Site:
The site for the World’s Fair Project was loosely modeled after the site design proposed by Claude-Nicolas Ledoux in the eighteenth century for what is now recognized as the ‘ideal city’ of Chaux in France. The basis of Ledoux’s concept was to provide an egalitarian city layout for workers in the town designed around an industrial saltwork. The adoption of the site for the World’s Fair promised an egalitarian approach to site as well as site specific orientation for each of the pavilions.

Results:
A sample of some of the highly articulate student models for the pavilions is included in this abstract. The final paper will include a more in depth discussion of the research undertaken by the students and show how the research was then translated into a design project.

Note:
It is significant that this studio class was taught at a public Historically Black University. First year students are not as articulate in knowing about “the architecture of the world”. However, ‘by birthright’, our African American students are acutely aware of “cultural difference” and also of “cultural migration in the world”. This aspect will also be discussed in the final paper.
Introduction:

This paper presents the work of an eight week long project developed in the first year studio class of a five year BArch program at Southern University School of Architecture in Baton Rouge, Louisiana during the spring semester of 2003. Studio instructors Archie Tiner, Kestee Weir and I carefully designed the studio exercise in order to expansively open the topic of cultural specificity in both Western and Non-Western Traditions in the architecture of the world. Student research for the studio was supported in the class Introduction to Architecture, a mandatory lecture class which I taught during the same semester, the second semester of first year.

There were approximately thirty first-year students in the class. With the exception of one student from Barbados and one from Viet Nam, the class was comprised of African American students. Some were from urban centers outside of Louisiana. The majority of the class was from cities and rural areas in Louisiana.

Background:

The primary intention of the project was to introduce to all of our first year students some of the diversity of traditions of the architecture of the world and how each tradition is related to the culture, history, climate and building traditions of the peoples who ‘make’ it. For this purpose, we chose various countries from the continents of Africa, Asia, Australia, Europe, North America and South America based on the diversity and distinctiveness of their culture and building traditions. ‘From a hat’ each student in the class drew the name of a different country for which s/he was required to undertake research in order to facilitate the design of a pavilion to represent the country. Countries included: Argentina, Australia, Barbados, Brazil, Canada, Chile, China, Columbia, Costa Rica, El Salvador, England, Finland, France, Germany, Greenland, Haiti, Honduras, India, Indonesia, Iran, Ireland, Italy, Ivory Coast, Kenya, Korea, Latvia, Madagascar, Mexico, Morocco, North Yemen, Peru, Philippines, Senegal, South Africa, Sudan, Switzerland, Turkey, United States, and Viet Nam.

Imbedded in the World’s Fair Project was another major pedagogical intention. This was to replace the limited elementary formal language which first year students possess with a much more expansive and complex panacea of physical forms; forms which were derived from climate, culture and available craft and material tradition. These forms studied included both contemporary and traditional architecture of the country.

Research:

Before the building was programmed, each student was responsible for researching (in the architectural library and on the internet), the culture and indigenous building practice of the designated country and writing an illustrated report. For each country, the major research topics included:

Culture: including the history of the country, ethnic backgrounds of the inhabitants, languages spoken, religion, cuisine, everyday rituals, social celebrations, music, craft and dance traditions and other culturally specific traditions.

Indigenous Building Practices (both traditional and contemporary): including traditional materials and methods of construction, traditional structural forms and the relation of these to natural features, natural resources and the climate of the country. In some cases, building types were examined which had developed to specifically accommodate the cultural traditions. Contemporary architects whose work was culturally specific: i.e. where structural forms utilized were specific to cultural activities and/or traditional craft practice or building materials were utilized in the work.

The research results were presented in a two-day forum by continent. For the forum, chairs were arranged which in a circle in a large room and students presented their research by continent. We soon began to recognize both common and divergent characteristics of both culture and building practice.

More subtle and fairly sophisticated issues were addressed in the course of discussion. Students recognized that building forms and materials were often similar because of climatic conditions and materials available. For example, although they were on different continents, both contemporary and traditional buildings in Finland and Canada had pitched roofs to shed snow and were often built of wood. Some buildings in both parts of Asia and parts of Africa had grass roofs, reflecting both indigenous craft skills and availability of materials as a result of shared climates although not necessarily culture.
The effects of intercontinental migrations of people(s) were also discussed, especially in relation to eighteenth and nineteenth century colonization. For example, it was fascinating to students that countries situated in the same continent (for example Africa) would speak different European languages in addition to multiple indigenous languages; that the Dominican Republic and Haiti would have both French and Spanish populations on the same island in the Caribbean, while the first language of Barbados was English; that the architecture of Spain, El Salvador and Mexico would share similarities; that French is be spoken in Haiti, Senegal, Viet Nam, Switzerland and parts of Canada, as well as in France. Shared architectural traditions were also recognized (and problematized) for these countries, especially in relation to nineteenth century neoclassicism.

Subsequent student research on contemporary architects from each country was also very revealing as students discovered ‘cultural expression’ in their work. (See Figure 2 and 3.)

Overall Site Plan:

Inspired by the circular format of our forum, the site adopted for the ‘World’s Fair’ was loosely modeled after the elliptical site design proposed by Claude-Nicolas Ledoux in the eighteenth century for what is now recognized as the ‘ideal city’ of Chaux in France. The basis of Ledoux’s well recognized concept was to provide an egalitarian city layout for workers in the town designed around an industrial saltwork located in the center of the city. LeDoux’s plan features a large space in the center which houses the factory with worker’s housing and public buildings located in two concentric rings around the periphery. The site is surrounded by countryside. Ledoux’s comprehensive scheme and exquisite site drawings and perspectives were easily accessible even for first year students. Images of Chaux were discussed in the Introduction to Architecture class as a model for the site.

Like the city of Chaux, the elliptical site for the World’s Fair was located in ‘the ideal countryside’, a landscape which had north, south, east and west orientation but otherwise no specifically distinguishing features. Following the plan for Ledoux’s project, the overall site design featured a large open space (world plaza) in the center of an ellipse with a ring comprised of equally sized wedge-shaped sites for the pavilions. The idea was that parking for the World’s Fair visitors would be located off-site and visitors would arrive by public transportation to be dropped off along the ‘bus route’ which ran around the periphery of the elliptical site. Major pedestrian paths would occur between each pavilion site which lead to the large ‘world plaza’ in the center of the site.

Pavilion Site Plot:

Each student was assigned an equally sized plot on the larger site plan which was roughly organized by continent. As much as possible, special care was taken to try to ensure that countries in the southern hemisphere would have south facing gardens and countries in the northern hemisphere would have gardens facing north. This was determined in order to facilitate the healthy growth of plants which were indigenous to the countries (see program which follows) as well as to provide very specific solar orientation to assist the designers.

The peripheral end of each pavilion site on the overall plan was to contain a garden/ outdoor gathering space accessible from both the outer ring where the buses stopped and through the building. Although the garden was at the ‘rear’ of the site, it was recognized that...
the garden would also be experienced as a forecourt to each pavilion for people arriving by bus. The ‘front’ end of the plot would house the building with its public façade facing the ‘world plaza’.

Each student was furnished with both an overall site plan with north arrow showing the allocations of the various countries as well as how the site is connected to pedestrian and vehicular traffic. Each student was also furnished a plot plan which indicated the geometry and dimensions of the plot and the setbacks for the building footprint as distinguished from the garden/outdoor space.

General Program:
In recognition that each country would have very specific activities to be housed in the pavilion, the program was initially issued in a very general way. The general guidelines for the program were for a building with a building footprint no larger than 300 square meters, approximately 2700 square feet plus circulation space. (Here the metric system of measurement was introduced as way of discussing diversity in measuring systems.) As mentioned, the site diagram provided illustrated design setbacks for the building and garden areas. The setbacks ensured that the building would have to have at least two stories.

The program for *indoor space* had to include the following maximum areas:
- 1200 sf gathering place for 36 persons to gather in celebration of a cultural event
- 400 sf interactive room to house 5 computer work-stations and film screening for 18 persons
- 200 sf life museum for several people to partake in the celebration of everyday rituals (to be visible from the large gathering space)
- 200 sf administration area
- 300 sf washroom facilities
- 600 sf for two different areas for the display of artifacts
- 150 sf food sampling area
The total enclosed area was 3600 square feet with up to 550 sf added for circulation.

The program for *outdoors* included:
- a partially enclosed hard surfaced area for outdoor celebrations
- two separate outdoor areas which ‘showcased’ plants indigenous to the country
- a discreet place for the bus at the periphery of the site for the bus to stop bringing fifty people from the parking lot (waiting for the bus was also to be accommodated)

Specific Program:
The basic concepts of programming were covered in a lecture in the Introduction to Architecture course. Based on the general programmatic requirements, each student was required to write a specific program responding to culturally specific activities related to each country. The program was developed by answering questions about each space in the pavilion as follows:

- gathering place for celebration of a cultural event; What is the event to be celebrated for your designated country? Fully describe all of the activities which will take place in the space (there may be more than one). Describe all of the special furnishings required and the numbers of each. To which areas should the space be adjacent and why? What kind of natural lighting is required? What kind of artificial lighting is required?
- life museum for several people to celebrate everyday rituals; What is the ritual to be celebrated? Fully describe all of the activities which will take place in the space (there may be more than one). Describe all of the special furnishings required and the numbers of each. Describe adjacency and lighting requirements.
- artifacts display; Which artifacts from your country are you planning to display? Describe any special built in furnishings or space requirements to accommodate these artifacts. Describe adjacency and lighting requirements.
- food sampling; A very small amount of space has been designated for food sampling. In consideration of this, what kinds of food from your country will be featured? Describe all of the special furnishings and/or equipment required to prepare and serve the food. To which areas should the space be adjacent and why? What kind of natural lighting is required?
What kind of artificial lighting is required? (Remember that this particular activity could be housed outdoors).

a partially enclosed outdoor hard surfaced area for outdoor celebrations; What is the event to be celebrated? Fully describe all of the activities which will take place in the space (there may be more than one). Describe all of the special furnishings required and the numbers of each. Describe adjacency and lighting requirements.

outdoor areas which ‘showcase’ indigenous plants Which plants indigenous to your country will be featured? Describe all of the special planting areas which will be important for their display. What kind of natural lighting is best for the plants?

Results:

In the course of completing this project, the students in the first year studio at Southern University School of Architecture extended their understanding of the role of culture, language, politics, climate, and natural building materials in the making of culturally specific architecture. Because I was teaching both Studio and the Introduction to Architecture course, I was able to facilitate a fairly comprehensive research process to inform the design process in close consultation with Archie Tiner and Kestee Weir, the other studio instructors.

We celebrated both Western and Non-western traditions and developed a critical conversation about the collusion of the same and the fact that often these categories of understanding are contrived. This was especially powerful in our forum where students’ particular identity, primarily as Americans of African descent often lead to focused on issues related to the African Diaspora.

For example, we spent a lot of time discussing slavery in Haiti, the current political oppression and Haitian migrations to Louisiana. (The overwhelming sentiment among students was how much ‘better off’ they were as Americans!) Students were very intrigued by the fact that Latin American countries often had a fairly large percentage of people of African descent as well as good number of Asians. Our student from Barbados, also of African descent, shared his cultural traditions which, like his accent and demeanor, are a mixture of English and Caribbean.

Conversations about colonization and migration continued in discussion with our student who was born in Viet Nam, a professor who had spent time in Senegal and I, a Canadian from Acadia, the part of Eastern Canada from which the French were expelled by the English in 1755 primarily to Louisiana. We discussed how French surnames in Acadia are shared with the names of some of our students; for example, Comeaux, Etienne, Pitre.

Borrowing the site from Claude-Nicolas LeDoux, was important; in the end, not so much because of its’ egalitarian ordering principles, because it allowed us to assemble and arrange our models (both in the ‘parti’ phase and in the final design phase) as exciting parts of a collective whole. (See Figure 4 and 5.)

Finally, the models produced in the first year design project at Southern University School of Architecture for the World’s Fair, speak to the success of our carefully planned project. The models illustrate successful extension of the formal and spatial expression usually accessible to first year design students. This is also true for some of the architectural detail. For example, Brian Holmes’ China Pavilion illustrates an understanding of the formal walled courtyard and gate, the possibility of inhabiting a wall and the articulation of the structure in Chinese roof construction. The exuberance of Chilean culture is well expressed in the building and site design of Valencia Thomas’ project where the main activity to be housed is a wine tasting and dancing celebration. (Ms. Thomas cannot wait to visit Chile!) The use of very particularly formed Islamic arches in ‘thick walls’, but also a poetic architectural interpretation of ‘veiling’; through the non-symmetrical opening and closing of ‘secret spaces’ inspired by the Persian garden are apparent in Jarrett Davis’ Iran Pavilion. Here, one of the programmed activities to be observed and shared is the making of Persian carpets. The crazy and exciting urban cacophony which is life in twenty-first century Viet Nam is expressed in Trung Do’s pavilion for his homeland, where one of the main activities is a loud ‘television coffee house’. The architectural form and detail of Christopher Williams’ Finnish pavilion which houses a sauna and beer drinking facility, was inspired by careful study of the work of Alvar Aalto. (See Figure 6.)

Around the World and Back; Bringing Cultural Understanding Home:
While the first project for the semester took us around the world. The second project celebrated ‘being home again’. This was a project for a reception center and sculpture garden for Southern University Museum of Art (SUMA) located on campus adjacent to the museum. The designs drew inspiration from the African and African American artifacts in the museum. The semi-enclosed building and garden was also intended to enhance and celebrate the site located on a bluff with magnificent west facing views of the Mississippi River.

The site is layered with history. Once part of a plantation, it has direct views to a point on the other side of the river called “Free Slaves Point”. Both local myth and a sculpture of a ‘red stick’ by Frank Hayden mark the site as a Native American settlement named Red Stick (Baton Rouge) by French Explorers. In 1972, during a civil rights demonstration, two Southern University students Denver Smith and Leonard Brown were killed in front of the building which is now the museum.

The Program for SUMARC and the sculpture gardens was for a ‘semi-enclosed’ and ‘convertible’ Great Hall to house fifty persons, with at least three scales of space (for a public event, for small gatherings, and for individual reflection) as well as kitchen, washroom and storage areas to service the main space. In addition, there was a requirement to integrate sculpture gardens, which were three dimensional and enhanced the view.

The project was also to draw formal inspiration from the art in the museum. For this purpose, students did figure/ground studies of the works in the museum as well as considering the influence of African Art in the works of African American artists, Picasso and to a lesser extent of Le Corbusier. This was presented in a lecture by Dr. Eloise Johnson, curator of the museum, and myself. The form and space of the resulting buildings and site design were configured by working with the figure/ground studies.

Conclusion:

The World’s Fair project and the reception center designed by first year students at Southern University School of Architecture in the first year studio involved careful consideration of cultural traditions. This included analysis of ‘cultural forms’ and their integration into the design process.

It is significant that these alternative approaches (which incidentally facilitated knowledge of non-western traditions) were ‘layered upon’ more traditional approaches to architectural design. They did not eclipse or supercede more ‘time tested’ approaches. For both projects there was site analysis, programming according to user groups and consideration of climate. However, the student work shows that by utilizing study of forms and practices found in specific cultures or in African Art, the language of form was also greatly expanded in the beginning design studio.
Diversity in Design: The Journal of Inclusive Design Education

Relevant contemporary design education enables students to make critically sound and socially conscious choices in complex situations. It fosters actions that:

a) take the viewpoints, needs, and desires of ‘the other’ into consideration;
b) encourage thoughtful navigation between states, media, and disciplines;
c) relate various languages, systems, and cultures;
d) bridge data and knowledge; and
e) broaden and deepen the comprehensibility and accessibility of our complicated multi-environments.

To address these issues, the Center for Inclusive Design and Environmental Access has initiated a new academic journal entitled Diversity in Design: The Journal of Inclusive Design Education. This journal is a forum for in-depth and timely analysis of scholarly issues related to diversity, and, particularly, issues related to inclusive design. It focuses on the changing roles of the designer in increasingly diverse societies. Through peer-reviewed articles that examine diversity issues in design education and interviews with leading scholars/educators, the journal encourages a global community of designers and educators to create new knowledge, partnerships, and gateways to inclusive design education. The content of the journal will challenge the meanings of design in situations where traditional notions have been broken or reconfigured. It will advance the critical examination of who is doing the designing; what is being designed; where ‘design’ is taking place; why certain types of design are being promoted; and how these images, products, and environments are designed, produced and consumed. It will explore the ways that various diversity groups have affected the design disciplines and, in turn, the ways that these disciplines have affected various diversity groups.

The journal is a pioneering technological initiative that employs the most up-to-date information delivery technologies to ensure seamless information retrieval in a fully accessible W3C-compliant format. An invaluable resource for the multi-disciplinary academic design community, Diversity in Design is the only publication of its kind. This presentation is the formal introduction of this new journal to the design community.
Diversity in Design: The Journal of Inclusive Design Education with Alex Bitterman. Tauke is project director of a U.S. Department of Education Curriculum Models Project, part of the Rehabilitation Engineering Research Center on Universal Design at Buffalo directed by Dr. E. Steinfeld. In addition, she is a co-investigator for the National Institute of Disability and Rehabilitation Research, U.S. Department of Education – Field-Initiated Development Project entitled Universal Design Education Online. Professor Tauke’s awards include a National Institute for Architectural Education Award, the American Collegiate Schools of Architecture Robert R. Taylor Award, the Lily Endowment Teaching Fellowship, a National Endowment for the Arts Grant (with M. Lum), and the State University of New York Chancellor’s Award for Excellence in Teaching.

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“The sets worlds in motion is the interplay of differences, their attractions and repulsions. Life is plurality, death is uniformity.”

Octavio Paz, The Labyrinth of Solitude

The term diversity seems to be everywhere these days. It is peppered throughout university websites and design magazines. It can be found in the NAAB student performance criteria and has even been spotted in a few studio project statements. More and more, design competitions are including the term in their briefs. This year, it is the theme of the 20th National Conference on the Beginning Design Student at Hampton University.

Despite its ‘loaded’ content in our PC culture, the term ‘diversity’ has maintained enough potency to sustain a place of influence in our contemporary vocabulary, and, therefore, one might argue, it is worthy of our further attention and study. What are the underlying concepts of diversity that relate to our designed environments? Do we really understand the complexities inherent in these relationships? Is diversity a necessary component of the content, process, and participants in design? What are the consequences of the diversity agenda, particularly in education?

The term ‘diversity’ can be traced to the Middle English divers(e) meaning ‘sundry’, ‘several’, ‘many’ and to the Old French divers and Latin diversus meaning ‘different’, ‘contrary’, ‘separate’, ‘to turn aside’, ‘divert’.1 Because of this paradoxical history, we’ve inherited a term that now has multiple and often contradictory interpretations. One the one hand, diversity is considered to be variety and multiformity; on the other, it is identified as the fact or quality of being different. The ‘group’ component of the term refers to arrays, ranges, assortments, collections, and multiples. The ‘individualistic’ notion of diversity suggests distinctness, disparateness, uniqueness, unlike others. The incongruous development of the term has put ‘diversity’ in a ‘both/and’ situation that challenges the ways in which it is incorporated into design language, research and practice.

The complexities in diversity and design relationships, perhaps, stem from this set of oppositional definitions. Not only do these definitions refer to noticeable heterogeneity, but also diversity can be the more active condition of the change process itself. It follows that design then assumes at least two roles in these relationships: it can build assurances of variety and choice into its processes and products, and it can also be the source or catalyst for change.

Diversity is an important component in design and design education because, as the website for the next Design for the 21st Century Conference states “we are now more diverse in age and ability than ever before.”2 This increasingly diverse population will be participants in and recipients of all of our design thinking and making. However, as Pentagram designer Michael Beruit claims, “Modern design education, on the other hand, is essentially value-free: Every problem has a purely visual [and formal] solution that exists outside any cultural context…. Until educators find a way to expose their students to a meaningful range of culture, graduates will continue to speak in languages that only their classmates understand.”3 Moving beyond these self-referential modes could assist designers and design educators to develop processes and work that resonates with the broader population, that contains meaning for more people. As designers, if we imagine the wide array of possible values, we can uncover an equally wide array of possible design approaches and solutions that might manifest and support other ways of thinking and being. And that might be the way design becomes a primary catalyst for social and cultural change.

While these idealistic notions are encouraging, it is important to remember that the consequences of considering diversity and difference as a fundamental component of design education have yet to be fully determined. Nonetheless, we do know that learning about and intelligently contributing to our constantly changing and multiple designed environments
requires remarkable flexibility on our part. Making design choices that ensure both sensitivity and the possibility for challenge and enrichment for others and ourselves involves a level of tolerance—a willingness to explore ideas and ways of being that we don’t necessarily believe in or admire. Developing the ability to explore and understand issues in as many contexts and from as many points of view as possible is a crucial part of this endeavor. Equally important is an ability to comprehend the ‘connectors’ between these vantage points. Understanding differences and the ways we connect are as fundamental to design education as classic principles that concentrate on formal outcomes and conventional linear processes. It follows that a broader notion of scholarship focused on multiple notions of design and their attendant consequences can establish a set of frameworks through which this education can take place. Relevant contemporary design education and practice enables us to make critically sound and socially conscious choices in complex situations. It fosters actions that:

a) take the viewpoints, needs, and desires of ‘the other’ into consideration;
b) encourage thoughtful navigation between states, media, and disciplines;
c) relate various languages, systems, and cultures;
d) bridge data and knowledge; and
e) broaden and deepen the comprehensibility and accessibility of our complicated multi-environments.

To address these issues, the Center for Inclusive Design and Environmental Access has initiated a new scholarly journal entitled Diversity in Design: The Journal of Inclusive Design Education. This journal is a forum for in-depth and timely analysis of scholarly issues related to diversity, and, particularly, issues related to inclusive design. It focuses on the changing roles of the designer in increasingly diverse societies. Through peer-reviewed articles that examine diversity issues in design education and interviews with leading scholars/educators, the journal encourages a global community of designers and educators to create new knowledge and partnerships in inclusive design education. The content of the journal will challenge the meanings of design in situations where traditional notions have been broken or reconfigured. It will advance the critical examination of who is doing the designing; what is being designed; where ‘design’ is taking place; why certain types of design are being promoted; and how these images, products, and environments are designed, produced and consumed. It will explore the ways that various diversity groups have affected the design disciplines and, in turn, the ways that these disciplines have affected various diversity groups. Diversity in Design is dedicated to the task of promoting and sustaining critical investigation into all of the design fields and the ways that they address social and cultural differences.

The journal is an initiative that employs current information delivery technologies to ensure seamless information retrieval in a fully accessible W3C compliant format. Developers of the site have strived to make the site usable to as many participants as possible, regardless of browser or format.

Our first postings include an interview with GSD professor and architect Monica Ponce de Leon, principle in Office dA, on her socially focused critical practice; an article by Craig Vogel, industrial design professor at Carnegie Mellon, on the ways in which his changing physical abilities have affected his design thinking and processes; and an article by Andy Proehl, director of the Sony Design Center, on the role of design diversity throughout the product development process and the ways in which these roles have changed since the growth of the Internet.

We invite all of you to subscribe to this free online publication and, equally important, to submit your scholarly and design work for consideration. Articles will be peer reviewed and posted on a monthly basis, as well as e-mailed to those on the subscriber list. Please contact co-editors Beth Tauke tauke@arch.buffalo.edu or Alex Bitterman at aeb1@ap.buffalo.edu if you are interested in submitting your work for review.

The URL for Diversity in Design is www.diversityindesign.org.

We hope you will consider participating in this important project. It is through critical
study of the ways that our systems include or exclude meaningful developments of diversity in design that we transition from supporters of the status quo to arbiters of change.

NOTES
Crowded over, around, submerging and drowning the identities of our students is the multiple ways a person becomes misrepresented and misunderstood because of skin color, gender, geographical demographics or economic status. Minority students are especially vulnerable to being incorrectly ‘identified.’ Identity is distinct from autobiography or self portrait. The autobiography and self portrait often only promote guidelines for the student to reflect upon what they have been educated to see about himself or herself from the outside, rather than think about who they really are on the inside. The intention of my identity project, “The Sublime Chapeau,” is intended to express the ‘I’ of each individual existence inspiring the student to explore their identity while working through basic Design principles. A Beginning Design project like this one allows students to peel beneath the onion of autobiographical circumstance, societal qualifiers related to race, and erroneous power structures. Students unearth and express their potential as it relates to core characteristics rather than arbitrary labels.

Art objects and architecture develop from the intrinsic motivation to order our interior or exterior environments. However profound and powerful work does not simply copy obvious patterns but reaches out for new combinations and iterations of visual symbols. Neo-Piagetian Robert Kegan’s analysis of knowledge acquisition suggests that human development involves a succession of renegotiated balances. Kegan says the two greatest yearnings of human experience are the desire to preserve an independent boundary, and at the same time be included and accompanied. Minority students already facing societal barriers to inclusion and acceptance will find it doubly difficult to explore independent and innovative work in the studio classroom. However if creative achievement can be framed within the transformative power of investigating your true identity and not asking who you are for others, but who you are for yourself, it is possible create forms that are truly unique to the designer.

Creative activity is the forum for a constructive experience satisfying an individual’s need for existential knowledge by providing operations that exert change and control over tensions felt and observed regarding the chaotic components of life. Beginning Design become a unique place to teach the non verbal skills required for the clear symbolic communication an artist or architect requires while providing the appropriate format for exerting reflective knowledge about the symbolic identity of the student. Assignments that guide students into experiences of asserting an identity that was previously subsumed by a non supportive societal structure can be very liberating.

Bakhtin writes the “gateway of the ‘I’ is located at the center not only of one’s own existence but of language as well. This is because an intrinsic connection exists between the project of language and the project of selfhood: they both exist in order to mean. “Process Education” is a pedagogical model devoted to giving student’s greater responsibility and ownership of their right to communicate and negotiate the assessment of their projects. Students develop the ability to impact the evaluation process of their projects and those of their peers through open communication dialogue and discussion while furthering developing the voice that expresses their core identity.
Crowded over, around, submerging and drowning the identities of our students are the multiple ways a person becomes misrepresented because of skin color, gender, geographical demographics or economic status. We are born with a potential identity and in those early years are wide open to see the world and be one with the world accepting our place within it as natural and appropriate. However, day by day, says Douglas Harding, founder of the Headless Way philosophy, we are slowly educated to see ourselves as others reflect back to us what they think they see, or want to see. The role of cultural structure and relational roots has been central to recent debates in neurobiological and cognitive sciences examining what characteristics are innate and what is acquired. It is difficult to talk of identity without at the same time, referencing social structures and family relationships, or the familiar nature versus nurture. The Not White Conference, dedicated to understanding and increasing diversity in architectural and beginning design education, can consider research by Joe R. Fegan, Hernan Vera and Nikita Imani. They report in the Agony of Education and discuss at length the degree to which black students feel marginalized from the interaction between white peers and white faculty members at predominantly white universities. This paper will address the significance of assigning projects that allow a student to peel beneath the onion of autobiographical circumstances, racial qualifiers and erroneous power structures, to unearth and express their potential as it relates to their core characteristics and not arbitrary labels.

Central to research throughout The Agony of Education was the theme of black invisibility. White professors, students, staff members and administrators were not perceived as treating black students as complete human beings with distinctive talents, virtues, interests and problems. It is significant to note that identity is considered to be distinct from autobiography or the self portrait. Autobiography and self portrait often only promote guidelines for the student to reflect upon what they have been educated to see about themselves. Such projects only solidify the mythical self, rather than explore the real self. Jurgen Habermas suggests that so long as everyone’s right of co-existence is clearly recognized a constructive democracy will be possible. And although this may be true for a political reality it may not be true for the individual reality where there is a delicate balance between the ability to assert your own difference and as well, recognize or even embrace another opinion or perspective. Black students interviewed for The Agony of Education repeatedly talked about the painful effects of ‘anome’, which is where a person cannot trust the existing rules to be applied to themselves in the expected manner. A successful studio project creates circumstances where it is more difficult for a professor to form opinions about the student through the skewed lense of personal prejudice, cultural bias, or misplaced values and opinions.

It is easy to starve the original immense view of ourselves to one that is shrunken and limited. Circumstance and missed opportunity can keep one from discovering or remembering who you really are. College is a time to re-awaken or take charge of defining your natural and original self. However, Neo-Piagetian Robert Kegan’s analysis of knowledge acquisition suggests that human development involves a succession of renegotiated balances. Kegan says that the two greatest yearnings of human experience are the desire to preserve an independent boundary, and at the same time be included and accompanied. Because minority students already face illogical but real societal barriers to inclusion and acceptance they will find it that much more difficult to explore independent and innovative work in the studio classroom. However if creative achievement can be framed within the transformative power of investigating your true identity and not asking who you are for others, but who you are for yourself, it is possible for an the instructor to create guidelines which will provide a protective framework for the student to move in and explore and it becomes possible for unique, powerful and expressive forms to emerge.

Modern social sciences have advanced the notion that an individual and a social system make up each other in a reciprocal fashion and a person becomes aware of themselves as a subject through his or her active interchange with the environment and the resources and constraints offered by it. When a student becomes identified according to a label such as race, gender or status they become an object and not a subject. Because making art and architecture develops out of an intrinsic motivation to order our interior or exterior environments, a successful project will carry within it mechanisms to merge the subject/object split. Therefore, obvious but erroneous patterns of identification are not emulated or repeated but profound, powerful and new identities free from self conscious labeling emerge in new combinations and iterations of visual symbols. In terms of individual development art fulfills two simultaneous cognitive functions. On the one hand, “it provides reflexive knowledge about the inner state of an individual and gives the artist symbolic means to master inarticulate conflicts.” And at the same time it provides constructive knowledge about a person’s need to affect the environment which satisfies significant existential needs to “confirm a person’s existence as an autonomous agent.”

The existential needs of a person are as real as any physiological or biological need and function within the framework of an individual becoming aware of himself or herself. Existential needs are a function of the self reflective cognitive structure hardwired into the human condition. Art therefore has an adaptive function equivalent to the role of reason. Nietzsche suggested that “art and reason function simultaneously to grasp given amounts of reality and provide mastery over it in order to feel less controlled by elements of life that cannot be understood or easily explained.” The power of art is its ability to provide novel concepts about the human condition for which reason alone cannot answer. The young artist is given an opportunity to comment upon and create visual models for their developing pattern of experience. However, consciousness is the basis for how human beings construct a cognitive understanding of the world. Individuals understand line, space, mass, or form through the bodily and sensory negotiation of living. Pedantic and obscure lectures inventing a false complexity about known concepts such as, ‘line’ or ‘value’, can erode a student’s interest in the creative experience and career choice. However, Basic Design principles are fundamental to symbolic visual language,
and before students can be trusted with creating a tower, they must be able to understand a bridge, or at least swim across the moat. Projects that provide a framework to express basic ideas and opinions about identity become a significant place for the minority student, or any student to work out an understanding of themselves and design principles at the same time.

Mihaly Csikszentmihalyi writes “The person who can effectively code experience in visual media replays at the individual level the process that artistic cognition serves at the level of species adaptation.” According to Csikszentmihalyi the dynamics of artistic activity is a process by which the individual:

1) experiences a conflict in perception, emotion or thought: assigned or ascribed,
2) formulates a problem articulating the previously inarticulated conflict,
3) express the problem in visual form,
4) succeeds in resolving the conflict (puzzle) through symbolic means, thereby achieving a new emotional and cognitive balance,
5) The aim of the creative act is not to reduce a drive in order to restore a previous equilibrium but to reach out for a new one.8

The possibility of allowing the artmaking experience to assist in the rediscovery of your true identity is significant and should be given greater credibility in the culture at large while University programs functioning to develop artists and architects should recognize the overall potential of the studio experience. Studio projects posing questions in such a way that students come to consider the components of self that the world is seeing: while comparing this with the components of self that are being covered over by circumstances of time, culture and place, is a significant way to empower students to think about whether or not the life they are living is their own.

To acknowledge that “human beings are meaning seekers” 9 places the quest for understanding of identity within the framework of creative endeavor and if we consider the different approaches adopted in creative problem solving the role of intuition is of significant interest. Intuitive experience embodies the non-scientific experience that art making is, but too often the analytical approach of idea making is upheld in the academic setting, because the scientific approach is awarded so much prestige in our culture at large. And although analysis and development are important skills required to complete and finalize forms “an intuitive approach to problem solving does not make a pedagogical curtsy to understanding in order to induce a successful performance, but is instead is part of a larger struggle to gain deeper insight.”10 Creative problem solving should not begin with reasoned analysis because it tends to lead students steadily away from the objects and ideas they should be attending to. Intuition and exploring ideas through building maquettes, handling materials, or thinking through your fingers can link the maker to the potential object in such a way that the first layers of meaning become clear as the sensory encounter and subjective responses occur from interacting with the form. “One of the great findings of cognitive science is that our ideas are shaped by our bodily experiences—not in any simpleminded one to one way but indirectly through the grounding of our entire conceptual system in everyday life.”11 Philosopher Arthur Schopenhauer considered the content of all intuitions to be “partly determined by dynamic factors (what he called the Will) and hence, by the quest for meaning.”12 He felt it was not the case that intuitions receive representations and then pass that on to understanding, and then understanding extracts objects from these representations, but the “search for meaning pervades the entire sequence of object, exploration, discovery response and understanding.”13 Schopenhauer regarded the Will as a thing in itself. This ‘Will is in us all and can be felt and “is ultimately and basically real, and is as directly known as anything tangible or felt.”14 The “Will” is not to be regarded as pure knowledge or pure affect, but something that is beyond both and manifested as ‘constructive knowledge.”15

People operating in an intuitive mode are clearly using concepts in order to communicate but they return again and again to the object. The challenge becomes allowing students access to their intuition without controlling the outcome. We hope for insight inherent in the creative dynamics of the teaching experience to move their work forward to a greater depth and maturity without deadening their enthusiasm with the words, “that’s not right.” Sometimes the solutions come as pure feeling imbuing creative activity with significant clarity and in this circumstance the teacher’s primary task is to establish thinking and help it maintain its forward moving direction.16 The instructor strives to ‘engage the Will’ and

Figures 1-5: Student examples of The Sublime Chapeau.
win the initial commitment of the student to solving the problem embedded within the assignment. The commitment is required to release the intuitive power of the student and not split their intention so they are found asking “why am I doing this...” In a genuine intuitive mode consciousness is fastened upon the object of interest. If the object is an object of knowledge, our purpose is to see it clearly and understand it, and its possibilities in relation to other objects of knowledge, and know this will lead to greater awareness for the student and culture at large.

For the student asked to explore their essential identity in the assignment The Sublime Chapeau (aka Heidegger Hats), the problem to be solved is how to extract meaning from materials and structure in such a way that the finished form is the conceptual metaphor as the embodiment of identity. The intention of a project like The Sublime Chapeau is to invite expression of the “I” of individual identity. I recently learned that Heidegger was a member of the Nazi party. This was shocking news and although his philosophy and theory inspires the essential component of the project, the name has been changed to The Sublime Chapeau, as I had extracted Heidegger’s theory on the ‘transformational passage’ from a book called Beauty and the Contemporary Sublime. The concept being considered was what Heidegger called the ‘transformational passage’. The transformational passage occurs within a material when the material becomes more than what it is because of the conceptual intention of the maker, and what the new form represents even though the material itself has not changed and is often a very familiar, almost mundane material. Heidegger writes about how ‘The Temple’ exists as a temple while being made from the rock substance on which its stands. He explains how majesty is found in relationship to its location and is more profound because it is made from rocks extracted from the place being honored.

For The Sublime Chapeau, students are challenged to extract out of materials inherent qualities to identify what they seek to describe about their core self. Students use one material to form the structure and are allowed one joining technique. The structure is covered with a skin, and again they are allowed one material and one joining technique. The second material is described as a skin and not a covering because skin is integral to a form while a covering remains external and additional. Restricting the variety of materials and joining techniques encourages deeper problem solving skills. Students must deconstruct the nature of the materials to find the most amount of information possible. In this way, everything we observe is creating associations that will inform what the viewer will consider to be essential about the student who made the hat. Class critiques may involve writing paragraphs about what we believe the artist is trying to describe about themselves. For example:

1) the two ‘headed’ hat is the psychologist taking an art class, recognizing the dual nature to his vocational aspirations. The skin is multi-colored bark attached in a camouflage like pattern identifying the way he has hidden his true interest.
2) the young woman whose opinions are bravely vocalized on matters of injustice she holds close to her heart: the small close form is the metaphor for her heart, the cork tabs become the metaphor for the power she has to be vocal which at times must be insulated or stopped.
3) milk cartons dipped in melted wax crayons are specific to this student’s desire to be playful and acknowledging the child’s dependence on milk for growth and development.
4) the owl form becomes Kale’s way of identifying the kind of work and thinking he was doing, commuting back and forth from school in the night and early morning: while repeatedly being visited by an owl. The sweater skin addressed Kale’s interest in clothing and acknowledged how he had begun identifying himself through clothing.

The quest for understanding within this project requires student to be gently and firmly moved forward into extracting new associations about familiar materials because of the ideas that need to be expressed in relationship to presenting their identity. As well, the student is challenged to extract methods of construction from within the material itself, further binding them to unusual and unorthodox methodologies. The most successful Sublime Chapeau will carry within its form and function a paradox unearthed by the students quest for creating new associations within the conceptual metaphors extracted from the material in relationship to the ideas that need to be expressed. It is vital that the student’s choice, his or her center of engagement, not be demeaned nor that the thinking generated by it be derailed. The student must undergo the consequences of planning and implementation, if one is to bring any meaningful evaluation to it, however it is often challenging to lead students to the epiphany that appears when they discover the ‘transformational passage’ that exists within their idea and chosen material. The lines from a recipe book cut and woven into the hat crocheted with fishing line spoke strongly of how this person needs directions to move forward, but once clear on the course, she takes it directly.

Educational psychologist Johan Postalozzi suggests that if intellectual activity can spring up side by side with love, this central force will clearly express the greatest ideal of human action. Any significant approach to learning will take basically a positive attitude toward human potential and change. Intuition and love can interact in three specific ways in a learning setting: “1) the sense of caring and intuitive sensitivity between teacher and student, 2) the love and intuitive feel for the act of learning or teaching, 3) love for a subject area that can be felt by both teacher and student.”

Philosopher Ken Wilber writes on behalf of his passion for the coherent integration of human knowledge that “self-transcendence, which leaves no corner of the universe untouched, means nothing more—and nothing less—than that the universe has an intrinsic capacity to go beyond what went before.” In its comprehensive inclusivity, Wilber’s theory realizes a sensible integration of the vast realms of human experience and endeavor and provides an understanding of “how we can become more fully human and at the same time be saved from the fate of being merely human.” The agony of education is that a university should be the institution most devoted and committed to the enterprise of transforming the human condition by calling for reform,
however it is too often the final holding place devoted to protecting the self seeking needs of professorial ambitions and elitist attitudes. Rather than empowering students to take up their voice and exercise their “capacity to criticize and reform” students feel very threatened by a professor’s ability to play for power over their lives through grades. Minority students who struggle against prejudice that is “entrenched as a general moral scheme that represents the basic values of the society” in which they live will find it that much more difficult to voice opposing opinions on any topic in or outside the classroom.

Mikhail Bakhtin writes the “gateway of the I is located at the center not only of one’s own existence but of language as well. This is because an intrinsic connection exists between the project of language and the project of selfhood. They both exist in order to mean.” ‘Process Education’ is a pedagogical model devoted to giving students greater responsibility and ownership of their right to communicate and negotiate the assessment of their projects. In The Handbook for Cooperative Learning published by the Pacific Crest Institute educators are guided towards creative situations where a group of students create positive interdependence and students working in teams accomplish a common goal. All members must cooperate to complete the task and there is individual and group accountability. Each team member is responsible not only for learning what is taught but also for helping each other learn, thus creating an atmosphere of achievement rather than competition. Results of studies have shown “that the use of cooperative learning leads to improved academic achievement, improved attendance and retention, positive relationships among students and a sense of community.” Such models of co-operative and collaborative learning can make great strides in eradicating the marginalized experience of the minority student, and all students at large. All of my Design Foundation classes function from the model of co-operative learning. Students learn to teach other (there is role reversal, students see themselves as teachers) and when you teach you learn better. Students also discover that their own life experiences are important and can contribute positively to the learning process.

Heidegger said the question of existence never gets straightened out except through existing itself.

“Without compassion for oneself and for others, without hope or humility, the possibility to change form remains unattainable. What is otherwise left to be changed is but masks.” Buddhist scholar Robert Thurman believes “every liberal academic—not liberal in the sense of liberal vs. conservative, but in the sense of liberal arts—is an evangelist for wisdom. An evangelist for decency and compassion and ethics and should want to educate people to live a better life and to be a better person, to be more kind, to be more wise, more intelligent, and to understand the world better.” Educators at every level have the privilege of a position that places them in authority over the development of minds at every stage of development, from young to old. Wilber believes, as do I, that “it is not the forces of darkness but of shallowness that everywhere threaten the true, and the good, and the beautiful.” Each student is a deep and eternal mystery looking for guidance and a way forward. The subject matter found within their identity is the potential energy central to why education exists at all. They do not require that we have all the right answers, but they are hoping we might be able to guide them toward the meaningful questions to be asked.

NOTES
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6 Csikszentmihaly, 117.
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8 Csikszentmihaly, 121.
14 Noddings and Shore, *Awakening the Inner*, 60.
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Earth Moves: Challenging American Cultural Ground through a Taiwanese Earthquake Memorial Park Competition

This paper is based on my cross-cultural experience teaching a group of predominately White American-born beginning design students who worked on the Chi-Chi Earthquake Memorial Park, an international competition in Taiwan. In fall 2003, my Caucasian TA convinced me to take the international competition in Taiwan as the final project for my beginning design studios in the Landscape Architecture Program at University Maryland. This Taiwan-based international competition opened up a stimulating cross-cultural experiment for both my American students, and myself, a Taiwanese native, in our beginning design studio classroom.

In brief, the Chi Chi Earthquake was one of the most unbearable collective memories for the twenty-three million residents in the island of Taiwan. On the morning of September 21, 1999, at 1:47 AM, a massive earthquake struck awakening everyone on the entire island. The quake, measured 7.3 on the Richter scale, dramatically impacted the city of Chi-Chi which was both at the quake’s center and the Taiwan’s geographical center. The quake and its island-wide aftershocks led to the death of twenty-four hundred people, eleven thousand injuries, and five thousand rescued survivors. Meanwhile, the ground bellowed, buildings quivered, roads folded up, bridges cracked, mountains moved, the land slid, and people’s hearts were broken. Four years later, many of the victims’ families still remained homeless. In September 2003, the Taiwanese government announced the Chi Chi Earthquake Memorial Park Competition to the international design community.

After introducing the backdrop of the Chi Chi Earthquake and the Taiwanese cultural context, in this paper, I will first explain the demography and ethnic background of my class, as well as my role as a mediator between two groups of students. I will also explain the identity-based philosophy that I used to structure my beginning design pedagogy, because it is essential for students to nurture their own design vocabularies from their personal and cultural identities.

Second, based on different students’ projects, I will address the cultural challenges that occurred within the design processes, especially those drawn from daily desk crits and review presentations. I will focus on how these challenges lead to various cross-cultural dialogues and impacted how my students and I perceive our cultural spaces and identities. More importantly, I will discuss how these dialogues inspired me to invent new ways of proposing cross-cultural-based pedagogy for beginning design students. These pedagogical reflections stem from micro-scale issues that embody profound cultural meanings, as well as macro-scale phenomena that represent different cultural paradigms. I will explore these micro and macro scale issues through the following questions. How did American students shape their design concepts for the Chi Chi memorial located in a Taiwanese cultural setting that was foreign to them? How did American students engage in personal dialogues with Taiwanese students, and how well did they listen to the “others” experience in the “others” terms? How did American students perceive Taiwanese death rituals and civic religions? How did they transform these rituals into their memorial design languages? How did American students struggle to place the victims’ Chinese non-alphabetical-ordered names on the walls in their designs?

Finally, I will conclude my pedagogical reflections on how this cross-cultural experiment changed my teaching, and refreshed my approach to beginning design studio in the era of globalization.
There is a long tradition, in the field of environmental design, of looking at designers as creators and translators who are able to manipulate and interpret the unique languages of physical forms. Design professionals believe in the “universal paradigm” that the unique design languages are universally shared across different cultures. The vocabularies of universal design languages are unrelated to designers and users personal experiences that they learn in their native societies and cultures. With the emergence of the “universal paradigm,” design education has been focusing on how to familiarize with the universally shared standards so that they can eventually practice the standards everywhere around the world. However, during the past decade, scholars in philosophy, geography, cultural studies, and other humanity fields have challenged this narrowly focused “universal paradigm” that merely embodies a predominantly Angolan European cultural heritage. Scholars assert that the making of our everyday landscapes has always been intertwining with personal memories and sexuality, cultural identity and ethnic history. Richard Rorty urges that we pass through “unfamiliar others” stories and experiences to challenge our own assumptions. Henry Lefebre claims that we have to understand spatial practice, the representation of space and representational space in our process of making a space. Dolores Hayden states that the investigation of minority groups’ history helps us understand urban landscape identity. Robert Riley questions how gender plays out in our cultural landscape.

Under this theoretical revolution, design educators have also been reflecting on how to shape young designers’ vocabularies through innovative ways that provide better opportunities to integrate their conceptual, emotional, and empirical experiences within the cultures in which they were raised. However, while educators pay more attention to various ethnic cultures and identities in their design studios, the White students from the dominant Angolan culture often overlook the fact that their Whiteness is one type of culture (among many other ethnic cultures) that governs the way they perceive places and apply their design language. It is very difficult for White American-born students to reciprocally understand that their way of designing a space is also based on the customs practiced within their White culture. They frequently dismiss how Angolan culture has been significantly influencing the formation of modern design languages in America. In my paper, I want to share my cross-cultural experience teaching a group of predominately White American-born beginning design students who worked on the Chi-Chi Earthquake Memorial Park, an international competition in Taiwan. This Taiwan-based international competition opened up a stimulating cross-cultural experiment for both my White American students, and myself, a Taiwanese native, in our beginning design studio classroom.

In brief, in fall 2003, my Caucasian teaching assistant convinced me to take the international competition in Taiwan as the final project for my beginning design studio in the Landscape Architecture Program at University of Maryland. The Chi Chi Earthquake was one of the most unbearable collective memories for the twenty-three million residents on the island of Taiwan. On the morning of September 21st in 1999, at 1:47 a.m., a massive earthquake struck awakening everyone on the entire island. The quake, measuring 7.3 on the Richter scale, dramatically impacted the city of Chi-Chi which was both at the quake’s center and Taiwan’s geographical center. The quake and its island-wide aftershocks led to the death of twenty-four hundred people, eleven thousand injuries, and five thousand rescued survivors. Meanwhile, the ground bellowed, buildings quivered, roads folded up, bridges cracked, mountains moved, the land slid, and people’s hearts were broken. Four years later, many of the victim families still remained homeless. In September 2003, the Taiwanese government announced the Chi Chi Earthquake Memorial Park Competition to the international design community.

In following sections, I first introduce the identity-based curriculum that I developed for my predominant White American beginning design students in the Landscape Architecture program at University of Maryland. Second, I explain the journey of the “internal” earthquake, aftershock and recovery that occurred within my White American beginning design students when they realized that they had to work on a project within a culture that is foreign to their own. Third, based on students’ projects, I analyze how the students in a White culture went beyond their cultural boundaries and designed the Chi Chi Memorial Park with a bilingual design language that intertwined both White and Non-White, and both American and Taiwanese landscape vocabularies. In the conclusion, I reflect on how this cross-cultural experiment changed my teaching, and refreshed my approach to beginning design studio in the era of globalization.
Identity Based Beginning Design Curriculum

There are many ways to approach beginning design education. The one I value the most is engaging beginning design students, with their identities that stem from their emotions and bodily experiences of places, and everyday knowledge. Holding this belief, I structured my beginning design curriculum with four identity-based projects. Each project highlighted a response to identities within different contexts and scales. The first two projects (Landscape of My Heart and Shaping Landscape through Metaphor) focused on personal identity; the third project (Hornbake Landscape Theater) emphasized community identity; and, the last project (Memorial Design) incorporated a search for identity within society.

In the first project, entitled “Landscape of My Heart,” my beginning design students choose their favorite place on University of Maryland’s campus, and then they found a piece of artwork (i.e., music, dance, film, lyric, poem, drawing, etc.) that represented the same feeling as their favorite place. In the process of searching for the art piece, they also had to come up with a metaphorical name for the feeling that their favorite place evoked. At the same time, they created a three-dimensional sculpture that transformed their feeling and embodied the metaphorical name. By doing so, these beginning designers not only learned to conceptualize their personal attachment to a place in a metaphorical way, they understood how their favorite places corresponded to their personal histories. It was the first step within each of their individual searches for an identity within in the design field.

Based on the metaphorical name from the first project, beginning design students then moved on to the second project entitled, “Shaping Landscape from Metaphor.” In this project, they created a piece of landscape that transformed the metaphor defined within their first project. The location of their design was hypothetical, but the typology of landscapes was real. In other words, they could choose any type of real landscape for this transformation: a public plaza, neighborhood park playgrounds, creek walks, natural landscape settings, courtyard gardens, corporative landscapes, spaces on a university campus, and so on. One of the most important principles was that their landscape designs had to expand upon the representations of their feelings of their favorite places from the first project. The challenge was to design a space in which users who visited the new landscape experienced feelings similar to the one’s that they, as the designers, had about their favorite places on the Maryland campus. By doing so, the students learned how to communicate their personal feelings of a place via the manipulation of landscape vocabularies, i.e., topography, plants, water features, textures of materials, etc.

The third project entitled, “Hornbake Landscape Theater,” was a team project that focused on how the campus community of students, faculty and staff used Hornbake Plaza on a daily basis, and how the landscape of plaza reflected its users’ identities. Hornbake Plaza was the outdoor space that was shared by students, staff and faculty members of plant sciences, life sciences, biology, and the landscape architecture department. At the eastern edge of the plaza campus-wide users access the Hornbake media library. The plaza is used heavily on a daily basis. While the current design of Hornbake Plaza is functional, its design is not expressive of its context: even though the plaza is surrounded by buildings within the natural science disciplines, no reference (either literally or figuratively) is made to these disciplines. Therefore, in this project, beginning design students hypothetically redesigned the plaza with an inclusive approach in mind – an approach that attempted to embody the identity of the students, faculty and staff who used the natural science building surrounding the plaza.

Students were teamed-up with their classmates, and they had to use Hornbake Plaza as the outdoor stage to role-play the ways in which the imagined people would use their redesigned plaza. Meanwhile, they worked in teams, using recycled materials to build one-to-one scale, on site models. In doing so, beginning design students started to recognize the diversity of user groups’ needs and what a public space meant to different users. More importantly, by using the plaza as an outdoor landscape theater to perform and install life size models, they not only experienced the real dimension of their design, but also learned how to collaborate with each other in the process.

The final project was the “Chi Chi Earthquake Memorial Design.” The project called for the elaboration of the emerging identity of a specific society and a sensitive response to a particular event or movement within a definite time period of human history. Memorial designs provide a great challenge for beginning designers, in that they have to negotiate their own design concepts and creative sensibilities with the needs of various user groups.
within a society. During a previous semester, I had used the Martin Luther King Memorial Competition, and I observed an interesting phenomenon. Although a central aspect of the Martin Luther King Memorial called for a physical representation of the African-American, civil right movement, none of my White American students ever expressed any discomfort about intruding into the African-American culture, when they worked on this project. In fact, the design aesthetics that were developed by both White and African-American students, was more influenced by the “universal design language” of the modern memorial (i.e., rolling hills, rock fountains, wall with names, artistic benches and stairs, etc.) than the cultural nuances of the African American experience (i.e. African-American musical-literary-arts heritage, family migration histories, etc). In contrast to the detached White perspective that students took in their designs of the Martin Luther King Memorial, the Chi Chi Memorial in Taiwan lead my White students into an exploration of an unexpected journey into a foreign culture; a journey that seems to have affected their identities as young designers in the first phase of their design education.

Shaking White Cultural Ground from the Beginning

Although, in retrospect, the Chi Chi Earthquake Memorial Park design was the first project that profoundly impacted my White students’ cultural identities, I did not expect this significant outcome when I first considered taking it on as the final project for my beginning design students. At that time, I was more concerned about whether or not my White students would be able to handle the complexity of the context in which the 1999 Chi Chi Earthquake occurred, whether or not they could grasp the cross-cultural needs of users living within a different society. I also worried about two practical issues. First, they could not visit the site, the surrounding landscape, and the nearby communities. Hence, it would be difficult for them to experience the scale of the site. Second, the Taiwanese scale is in the Metric system, while my beginning design students just started their struggles with the American system of measurement.

In making my decision to use the Earthquake Memorial within my beginning design studio, I intensively researched the Chi Chi earthquake on websites, and discussed the matter with my colleagues, as well as with junior and senior students. I concluded that it might be an opportunity to open new windows for my students. Windows that would enable them to depart on a design journey that could potentially increase their cross-cultural design capacities. They might be able to understand, from the beginning of their design education, that there was more than one system for measurement, while there existed more than one cultural value of how to contemplate death and how to use public space. They might be more sensitive and more flexible toward different user groups’ native cultures in their future practices.

Shaking the White Studio Common Ground

I decided to give my students a month-long “earthquake” that would enable them to experience their anxieties about this “exotic and ambiguous” foreign project. Therefore, I announced that the Chi Chi Memorial Park Competition in Taiwan was their final project one month before it stared. This news indeed shook the very ground that my students had imagined a studio was built upon and worried many of them. Just like the Chi Chi Earthquake had occurred in Taiwan, my studios went through the major seismic shift in perception, the aftershocks, and the recovery period. During the major studio earthquake period, they complained that the conversion between Metric and American scales would be difficult and confusing. They felt disadvantaged at not being able to visit the site and experience the space. They were concerned that it was too challenging for them to design an earthquake memorial for a Taiwanese society whose cultural practices were so foreign to them and so far away. More importantly, they felt discomfort about designing the Chi Chi Memorial Park for Taiwanese people, because they questioned the imposition of their design within someone else’s culture. In other words, in the context of the Taiwanese Chi Chi Memorial, they suddenly realized that their cultural identity of American Whiteness was very different to those Non-White Taiwanese islanders who experienced the major earthquake in 1999 and were still invested in the process of healing themselves.

In order to relieve their ambiguity and tension and bridge the gap between the Whiteness and Non-Whiteness, my studios took three steps to “recover” from their internally felt earthquakes. First, all students agreed to practice both Metric and English systems at the
Hornbake Landscape Theater project that they were working on at that moment. Second, in the very beginning of the Chi Chi Earthquake project, my students had to conduct web research about the Chi Chi Earthquake, and the socio-cultural context of Taiwan. I also put together slide shows of various Taiwanese cultural landscapes, and the reconstruction efforts that communities around Chi Chi Township had undertaken from 1999 to 2001. The stories and slide images provided my American students with a glimpse of the local landscape, architectural vocabularies, and users’ activities. Finally, I invited Taiwanese students who were currently pursuing degrees at University of Maryland to my beginning design studio. The Taiwanese students led discussions and shared their personal experiences of the Chi Chi Earthquake in 1999 with my students. Taiwanese students also expressed their visions of the Chi Chi Earthquake Memorial Park.

Listening to Taiwanese Students’ Voices

During the forums, my American students asked their Taiwanese guests all kind of questions that they came up with while conducting their web research. Mark was confused by the political status of Taiwan, and asked, “Is Taiwan a nation or not?” “It is a very good question. But, no one knows the answer,” Chen responded to him. Chen briefed the class on China-Taiwan relations. Jeff wondered, “So, what do College students do daily?” Jing answered, “Our college life is just like what you have here, except most of us ride scooters to school. You know, we hang out with friends on campus, and we have to study hard to pass examines. But, we have more fun places to go after class. There’s a great night life in Taiwan. We can go to movies, Karaoke, and to all kinds of night markets for midnight snacks. Taipei, especially, is a twenty-four hour city. We never get bored.” She also emphasized that American, Japanese and Chinese cultures had profoundly influenced Taiwanese culture in the past century.

When the topic switched to the Chi Chi Earthquake, Annie, one of my American students asked, “Why don’t people move to other places? Why do they still want to stay in a very dangerous area?” Lin replied, “Taiwan is a very small island. We don’t have lots of land like America. Where can we move?” Lin explained that most victim’s families were poor people living on mountain sites. They had no choice but to stay where they were. Suddenly, her voice turned very emotional and she went on, “It’s our home. We do not want to move somewhere else.”

Jason asked, “What did you feel about the earthquake?” Yuh told him that her bat research labs were located in the caves close to Chi Chi at that time. When she revisited her research area after the earthquake, the twisted mountains and dramatic landslides stunned her. She said, “We feared nature. We could not fight against nature.” She thought that it was important to rebuild the relationship between humans and nature. Lin and other Taiwanese students also agreed that “rebuilding” and “healing” were the most important feelings that they had from the earthquake. They highlighted that they did not want to be reminded of the terrifying images of the Chi Chi earthquake. Instead, their preference was for a memorial park that could be a park-like open space that supported multiple functions. Just like most parks in Taiwan, it could be used as a memorial for contemplation, and it could also be a public park for local residents’ daily use.

Searching for Post Earthquake Identity for Taiwanese Society in Maryland

My students discussions with Taiwanese students were a turning point. After the discussions they began to rebuild and re-stabilize the common ground they had felt move beneath them not so long ago. More importantly, the American students heard the personal voices and stories told to them by their Taiwanese peers, and as result they transformed the stories and voices into cultural references that they then used to develop their design concepts for the Chi Chi Earthquake Memorial. At the same time the experience of passing through the “others” story became a mirror that helped my American students to view their White culture experiences from a different angle.

Shaping Design Concepts by Echoing Taiwanese Students’ Personal Experiences

During desk crits of my students’ conceptual schemes, I was very surprised by how much my White American students had been influenced by the Non-White Taiwanese students. My White beginning design students not only listened to their Taiwanese pals’ voices and
stories during the forums, but also echoed with the design concepts they pick up for their projects and the element that they applied on the site. Recall that the Taiwanese students had emphasized re-building, healing and the relationship with nature as the three major aspects that they felt captured their response to the earthquake. And these aspects became the basis of my American students designs.

Ken is a good example of a student who responded to the rebuilding aspect of the design. He said,

“My Concept for the Chi Chi memorial came from two Taiwanese girls who came to speak about their experiences. One idea that stuck out from the discussion was re-growth after the destruction. I decided to stick with this re-growth and design my memorial in order to show the idea of re-growth as a way of giving the people who visited it faith. There were two elements that supported my concept. First, the trees are growing on the footprint of the original building, on the site. The second is located in a ring of huge boulders that bring people together, and this is a sunken area with smaller boulders with flowers growing out of them. This is to emphasize the idea that re-growth comes from community.”

Cindy reaffirmed the Taiwanese students’ statement that they need space to engage in a healing process, rather than to be reminded about the disaster again and again. She said,

“The concept of my design is The Journey Through Healing, when a disaster like this happens, it is a horrible thing and it needs to be remembered and marked in history. I do not think a memorial is the right place for remembering the actual disaster though. I think that the memorial should remember the people that were involved and celebrate the way the community comes together to work its way to healing.”

In terms of the relationship with nature, Annie’s focus was Respect for Nature; Healing through Nature. She used the flora of blossoming in September to symbolize the healing power through nature. She said,

“The loss of life on September 21, 1999 was a horrible casualty as the Earth continued its inevitable rhythm. The design shows Nature as dominant. There are no overt built structures that compete with an idealized natural setting. …..The memorial site provides a space to enjoy nature. …..The plant material is an integral part of the memorial experience. …..The Memorial Island bursts with new life in a bounty of lush plant material. This is especially evident in September when the whole site is blooming in vibrant colors. …..The flowers are a gift from nature and symbolize the fragility and beautiful of the thousands of lives lost during the earthquake on September 21ª. Visitors walking through the site will be overwhelmed with color and fragrance from the varied and abundant flora.”

Developing Design Vocabularies from White to Non-White

The process of developing design vocabularies for Chi Chi Memorial not only challenged my White students to reflect on their American culture; but it was also a refreshing experience for me. Through the experience I began to understand myself as a Non-White instructor, and began to re-think my Taiwanese culture. My White beginning design students realized that many standardized memorial vocabularies that work perfectly in American context, make little sense within Taiwanese context. One example of this came up when students attempted to integrate victims’ names into the memorial site (as is typical of American memorial designs after Maya Lin). In the beginning of the design stage, many students proposed to have structures with victims’ names on them. Of course, my American students assumed that the name list would be based on an alphabetical ordering system.

During my desk crits, I explained to them that Chinese names were non-alphabetically-ordered. The sequences within the Chinese dictionary were based on the numbers of strokes of a word, not the alphabetical order. More importantly, in line with Chinese custom, family members preferred to be buried in the same graveyard after they expire. If the victims’ names were placed based on the numbers of strokes of their last names, husbands and wives with different last names might become separated. Therefore, many students either changed their design approach, or placed the names based on communities and locations.

In addition to the order of names, there were certain forms and colors that reminded people of death and therefore were “prohibited” for public space design in Chinese society.
In general, Chinese perceive memorial services, death rituals, and cemeteries as unlucky symbols within their daily life. Certain colors, especially black, that are associated with death, are colors that contain bad omens. Although many American memorials are constructed with elegant black marble, the local Taiwanese residents living close to the Chi Chi Memorial Park might not welcome huge black structures being dropped into their backyards.

More importantly, the way Taiwanese people express their emotion toward their loved ones in a public space is very different in comparison to Americans. One good example is my observation of how Americans use the Vietnam Memorial. When victims’ family and friends visit the Vietnam Memorial, they explicitly express their sorrow within the public space irrespective of whether or not other people are around. In Taiwanese culture, commemorating the loss of loved ones is an event that takes place at a private domain, their loved ones’ tombs or graveyards. Most Taiwanese people visit their loved ones’ graveyards more than once annually. At the graveyards, they perform a commemorative ritual by burning fake paper money, dedicating incense and displaying flowers, as well as food. Tombs, in Chinese culture are called “sweeping tombs” because members of the deceased literally sweep their loved one’s area. However, the ritual of sweeping the tomb is considered a private ceremony, and takes place only at private graveyards. It would be odd to perform the sweeping ritual at a public memorial spaces, like the Chi Chi Earthquake Memorial Park.

From a designers’ point-of-view, the critical challenge of the Chi Chi Memorial design was how to transform a public memorial into a comfortable space where Taiwanese users could make private connections with their loved ones who had lost their lives during the earthquake. Paul’s design, Healing the Nation, Healing the Community, and Healing the Individual, achieved this aim with an innovate solution. His memorial was a place that allowed for the healing process to be realized by dropping colorful pebbles into a manmade crack. In Paul’s design, visitors entered the site from various entry points and began an ascent into the memorial. The entry walk circumnavigated the raised plateau, at the center, and visitors arrived at a marble hardscape that represents the island of Taiwan. A large trough of colored pebbles awaited each visitor. Upon their arrival, each individual would take a pebble and drop it into the man made crack in the hardscape, enacting a symbolic gesture of the beginning of the healing process. This private gesture turned the space into a private space during a moment of meditation that went along with the dropping of the pebble. More importantly, the pebbles fell below into a museum area that allowed visitors to see the pebbles accumulate behind a large glass wall. This type of physical quantitative accumulation engaged viewers to experience the power of healing in a collective manner. As the pebbles ultimately fill the fault line that has caused so much sorrow in their lives, “together the nation will heal as one,” Paul stated during his review. He went on to say, “When the public space is transformed into a private space by those individuals that visit, the experience becomes much stronger and the connection between place and human spirit is created. The space becomes not only a memorial, open to all, but it can be a spiritual retreat for those that feel the need for any type of healing.”

Conclusion: A Cross-cultural Pedagogical Reflection

My White American beginning design students’ creative and sensitive design schemes opened up a new window for me – a window that enable me to read the Taiwanese cultural landscape that I had grow up in. Their positive responses in my final evaluations surprised me. On the one hand, they struggled with the foreign culture and customs in Taiwanese society. They were frustrated by the Metric system, and confused by the scale of the site that they could never visit. On the other hand, ninety percent of them said that the cross-cultural project resulted in their rethinking the set of assumptions that they hold about themselves and their own culture and how those assumptions don’t necessarily apply to others. “I have learned that you must consider what is customary to myself is not typical of others, so you must understand how culture reacts to situations before making final design decisions,” one student wrote on the final evaluation.

Another wrote, “I have learned how to begin to look at ideas from more than one perspective. And have realized that certain ideas are very western and are not all that important to people of other cultures. And it is important to be aware of this when designing.” Meanwhile, the majority of my American students recognized that what they learned from my beginning design studio was very important for the landscape architecture profession.
Their intelligent, genuine responses and open-minded attitude refreshed my approach to teaching beginning design studio in our current era of globalization. I realize that, within the six-week period of working on the Taiwanese Chi Chi Memorial project, my White beginning design students had developed a unique cultural lens through which they investigated their own White American culture. As a Non-White instructor, I do not fully understand how they develop the lens on their own, because I do not entirely understand the culture of Whiteness myself. However, in the context of the Chi Chi memorial design, when I tried my best to explain my Taiwanese native culture to them, the foreignness of Taiwanese culture perceived from their White cultural eyes transformed into a mirror that helped them to see who they were from an alien angle. Although I do not understand how they developed this White cultural lens, I do know that having created this lens for themselves they will view themselves and their world in a new light as they continue on in design journeys.

NOTES

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Diversity’s Effect on Accreditation: Lessons for Architectural Education

In 1994, the cover of the February issue of *Progressive Architecture* (PA), featured an article entitled: “Can this Profession be saved?” The following year, (September 1995), *PA* continued its examination of the architecture profession, this time focusing on “The Schools: How they are Failing the Profession.” In January 2003, the *Chronicle of Higher Education* added to this literary invasion by deploying a missile across the bows of architecture education with an article entitled: “The Multiple Failures of Architecture Education.”

All three of these articles paint a very pessimistic picture of the state of architecture education and forces one to question the grand narratives of architecture education.

What these articles do not examine is that the major burden of educating African American and minority architects is being carried by only seven accredited schools of architecture at historically black colleges and universities (HBCUs) who graduate 50% of all African American students in professional architecture programs. An immediate concern raised by these articles was whether their focus would be more positive if the other 103 predominantly white schools of architecture (PWSAs) devised programs that embraced minority students and/or fostered a more diverse architecture discourse. Another concern focuses on the lack of a proactive position by the leadership of National Architecture Accrediting Board (NAAB) to encourage diversity in architecture education (they would add “equality and diversity standards” to their accreditation criteria against the school of architecture’s mission and goals.)

There is no dictum of political correctness, quotas or expectation of quotas implicit in this proposal to expand the pool of minority and underrepresented architecture students throughout the non-HBCU architecture programs. However, a lack of initiative or effort on the part of NAAB’s leadership to create a climate of diversity or pluralism implies a passive rather than active belief in the values of difference in the architecture education community. This paper will present solutions derived from and implemented by regional accrediting agencies, the result of which harvested positive effects of diversity on accreditation. Architecture educators will learn a great

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abstract

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Dr. C. Barnabas Charles has been teaching at the university level for the past 15 years, and is the author of *Computers in the Professional Practice of Design*, McGraw-Hill, and *Multimedia Marketing for Design Firms*, John Wiley and Sons. In addition Dr. Charles’ current research focuses on the Evolution of Accreditation in the United States: *The impact which accreditation has had on maintaining standards in higher education.*

In Dr. Charles beginning design classes Critical pedagogy is being used as a teaching approach in an attempt to help students from the millennial generation question and challenge domination, and the beliefs and practices that dictate the built environment. Problem-based learning strategies and practices help these millennial students achieve critical consciousness. The educator facilitates students’ questioning of ideologies and practices considered oppressive, and encourage emancipatory collective and individual responses to the actual conditions of their own lives. This critical pedagogical style of student-centered learning empowers undergraduates to be responsive in an environment where they are exposed to a highly qualified teacher; hands-on experiences; problem-based learning; and high expectations. The students, after engaging in this arena, possess the ability to analyze critical elements of instruction as well as the flaws of societal constructs that makeup the built environment. The challenge of the classroom exercises promotes retention, critical thinking, and reflective and responsive learning while encouraging students to share this knowledge and attempt to change the oppressive nature of the society.
Problem Statement

What I want to find out is how architecture accreditation can incorporate “diversity standards” as one of the criteria for evaluating architecture programs to affect positive changes in how underrepresented and marginalized students can gain greater access to all architecture schools accredited by NAAB.

The present and past conditions for the underrepresented and marginalized in the architecture profession have been dismal, and the future looks just as disappointing. Unless drastic actions are taken by leadership architecture education organizations like NAAB to encourage architecture schools to emancipate the underrepresented and marginalized, the future for minorities in architecture will be as pernicious as have past and current conditions.

What the literature has to say about the state of the underrepresented and marginalized in architecture education and practice.

Three decades ago, Urban League President Whitney Young chastised the architecture profession for having only 1% African American participation in the profession, and here we are three decades later having made negligible progress (Landsmark, 2003). Furthermore, of about 120,000 licensed architects in the United States, only 1,408 (1%) are African-American (Mann & Grant, 2004).

There are currently 113 schools offering National Architecture Accrediting Board (NAAB) professional programs in architecture, leading to the Master of Architecture (M.Arch.) or Bachelor of Architecture degree (B.Arch.) (http://www.naab.org/cal_cat1724/cal_cat.htm). Nearly fifty percent (50%) of 1,069 African American students enrolled in an accredited Bachelor of Architecture program in 2002/03, and the 199 African American students enrolled in an accredited Masters of Architecture program in 2002/03, were being educated by 7 (HBCUs) Historic Black Colleges and Universities (AIA/NOMA)1 schools offering NAAB accredited professional programs (NAAB Statistics Report, 1989/99-2002/2003). These HBCUs are Florida A&M, Hampton, Howard, Morgan State, Prairie View A&M, Southern (lost accreditation in 2003), and Tuskegee University (Mann & Grant, 2004). This implies that the 7 accredited professional architecture programs at HBCUs educated an average of 100 African American architecture students per school per program. On the other hand the remaining 106 accredited professional architecture programs at predominantly white institutions educated less than 7 African American architecture students per school per school (Brazley & Poggas, 2004; NAAB Statistics Report, 1989/99-2002/2003).

According to NAAB’s statistics Report (1998/99-2002/03) of a total of 1,914 full-time architecture faculty, 4% are African Americans, 23.7% are women, .6% are American Indians, 4.1% are Asian/Pacific Islanders, and 5.75% are Hispanic faculty. This same report stated that out of a total of 1,156 tenured architecture faculty, 3.6% are African Americans, 17.5% are women, .52% are American Indians, 3.4% are Asian/Pacific, and 4.4% are Hispanic faculty.

Educating the Marginalized and Underrepresented

--NAAB’s statistical report for the 2002/03 academic school year reveals that approximately 13% of total student enrollment for B. Arch programs are persons of color; African American students were 3.64% of the total.
--Fewer American Indian students, Asian/Pacific Islander students and Hispanic students (B. Arch only) were enrolled in architectural programs in 2003 than 2002.
--Fewer African Americans and American Indians students graduated from B. Arch programs in 2003 than 2002.
--Fewer American Indians and Asian/Pacific Islander students graduated from pre-professional programs in 2003 than 2002.

American Institute of Architects (AIA) Membership of the Marginalized and Underrepresented

--AIA Membership Department data show as of 2002, there are 86% male and 11% female architects, (3% are unknown).
--AIA Membership Department data 2002 statistics show there are 69% Caucasian, 1% African American, 2% Pacific Islander/Hispanic, 3% Asian, 25% undeclared heritage, and 0% Native American/Alaskan.

Object of the Study:
The objective of this study is to question the grand narratives of architecture education and to inquire about questions of equity that are virtually ignored. What issues are not looking at?

1. Based on the NAAB’s statistics above, can we conclude architecture is education only for the elite?
2. Are underrepresented and marginalized architecture students welcomed non-HBCU architecture schools of architecture?
3. Is it the responsibility of non-HBCU architecture to educate the underrepresented and marginalized architecture students?
4. How can NAAB passively continue to accredit and reaccredit architecture programs which do not reflect the diverse demographics of the United States?
5. How can the leadership of NAAB “get away with” their present thinking/action concerning underrepresented and marginalized students? (What is NAAB really saying when its own studies for the 2002/03 academic school year reveals that approximately 13% of total student enrollment for B. Arch programs are ‘persons of color,’ African American students were 3.64% of the total)?

**Challenges to the grand narratives of architecture education and practice**

What is the National Council of Architectural registration Boards (NCARB) really saying when only 1,408 (1%) of about 120,000 licensed architects in the United States are African-Americans (Mann & Grant, 2004). What are the deans of non-HBCU architecture schools saying when of 1,914 full-time architecture faculty only 4% are African Americans? What else can be done to make architecture education and the profession more diverse?

According Ted Landsmark, President, Boston Architectural Center and Chair of the American Institute of Architects Diversity Committee, “The profession will not become more diverse until our schools do, because graduation from an accredited program is a prerequisite to entry into the profession (Landsmark, 2003).

Based on the analysis above, there is no doubt that there is a problem with a lack of diversity within the architecture profession and especially architecture education. The growth of the underrepresented and marginalized in architecture has stagnated. I am in complete agreement with Mr. Landsmark when he says that, “Our schools generally have the means and intentions of increasing diversity, but most fail to reflect the society…, and little has been published by the National Architecture Accrediting Board (NAAB)…on best practices (Landsmark, 2003). The charge for diversity in architecture education has to be championed by the accrediting agency (NAAB). The National Architecture Accrediting Board must have the courage to take bold steps to increase diversity in architecture education by following the examples of the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges, and Middle states Commission on Higher Education.

**Precedent “A:” Institutional Accrediting:** The Western Association of Schools and Colleges

The Western Association adopted a standard in 1988 requiring the 137 colleges it accredits to foster ethnic diversity on their campuses. The standards also say that such diversity should be reflected in the makeup of the institution’s faculty, student body, and governing board (Courtney, 1993).

Following is a list of what the Western Association of Schools and Colleges expected from the institutions and visiting accrediting teams:

1. Both institutions and our teams were asked not to define the challenge of diversity – or its attainment – solely in terms of numbers of minority-group students or faculty, staff, or governing-board members.
2. The visiting team was to look for presidential and faculty leadership in affirming that “diversity” does not mean a narrow effort to benefit only members of minority groups, but a commitment of talent and resources to widen everyone’s intellectual grasp and personal understanding.
3. Campuses should have written plans on how to achieve diversity that have been subjected to broad and searching discussion. The plan should address:
   a. Curricula.
   b. Recruiting and retention strategies for students and faculty and staff members.
c. Student–life programs.
d. Academic support for students.
e. The plan should have goals and some way of assessing whether the goals are
being achieved.

4. Each visiting team was expected to address diversity issues in their report evaluating the
institution in the following manner:
a. In a collegial spirit, they (the visiting team) analyze the institution’s self-study.
b. Ask questions.
c. Report perceptions, problems, and opportunities that become evident during the
visit.
d. Praise worthwhile efforts that are under way (Stephen, 1990).

**Precedent “B:” Institutional Accrediting: Middle States Association of Colleges and Schools**

(Commission on Higher Education)

In 1988, Middle States Association of Colleges and Schools (Commission on
Higher Education) also added a set of “diversity standards” to be met by institutions seeking
accreditation and reaccreditation. Visiting accreditation teams were to look at college
records to determine if the composition of the student body, faculty, governing board, and
the administration demonstrated a serious policy of recruiting and retention of minorities that
would result in the institution reflecting the demographic character of the nation (Bloland,
2001).

The “diversity standards” proposed by the Middle States and Western Commissions
received their share of supporters and critics. At one point, the Middle States Commission
“diversity standards” caught the attention of then Education Secretary, Lamar Alexander, who
asked the department’s advisory panel on accreditation, the National Advisory Committee on
Accreditation and Institutional Eligibility, to study the issue and report back to him. Hundreds
of faculty and college administrators wrote to Secretary Alexander with advice on whether
he should continue the department’s recognition of the Middle States Association of Colleges
and Schools (Jaschik, 1991).

The majority of university presidents in the Middle States region were quite
supportive of the “diversity standards,” as indicated in their letters to Secretary, Lamar
Alexander. According to Roger H. Martin, President, Moravian College, “(The diversity
standard) was only one of many recommendations and standards in the revised ‘Characteristics
of Excellence,’ and there was no indication in the statement that colleges’ commitment
to diversity carries greater weight in accreditation decision than planning and resource
allocation, curricula, outcomes assessment, administration, plant and equipment, budgeting
and accounting, or any other considerations (Martin, 1991).”

“Diversity appears as a standard for educational institutions because of our conviction
that we must deal with the larger concerns of society as they affect the educational process
if we are to fulfill our educational missions. The focus on diversity in evaluations will serve
to heighten the consciousness of each institution,” said President Fanton of New School for
Social Research in her December 13, 1990 letter to Education Secretary, Lamar Alexander
(Fanton, 1990). In its analysis of including ‘diversity standards’ in architecture accreditation,
NAAB can take courage from President Oscar I. Remick (of Westminster College) who in
his April 29, 1991, letter to Secretary, Lamar Alexander, stated that, “Westminster College
has found the commission’s “diversity standards” an incentive to move even more quickly
and decisively to achieve goals previously set” (1991).

**Precedent “C:” Specialized Accrediting: Council on Education in Journalism and Mass
Communications**

Richard C. Kunkel, member of the National Advisory Committee on Accreditation
and Institutional Eligibility, said that he would favor diversity standards by specialized
accrediting groups. He said it was legitimate for professionals in journalism, teaching, or
other fields to define the training their professionals needed. “Colleges that did not agree
could simply avoid seeking accreditation from that profession,” he said (Jaschik, May 15,
2003 adopted the following revised standards. They will go into effect in September 2004
and will be applied in accreditation reviews starting in the 2005 - 2006 academic year (http://
Diversity and Inclusiveness
The unit has a diverse and inclusive program that serves and reflects society.

Indicators:
(a) The unit has a written plan for achieving an inclusive curriculum, a diverse faculty and student population, and a supportive climate for working and learning and for assessing progress toward achievement of the plan.
(b) The unit’s curriculum fosters understanding of issues and perspectives, that are inclusive in terms of gender, race, ethnicity and sexual orientation.
(c) The unit demonstrates effective efforts to recruit women and minority faculty and professional staff and supports their retention, progress and success.
(d) The unit demonstrates effective efforts to help recruit and retain a student population reflecting the diversity of the population eligible to enroll in institutions of higher education in the region or population it serves, with special attention to recruiting under-represented groups.
(e) The unit has a climate that is free of harassment and discrimination, accommodates the needs of those with disabilities, and values the contributions of all forms of diversity.

Accreditation site visit teams will apply this standard in compliance with applicable federal and state laws and regulations.

Evidence:
1. A written plan
2. Syllabi and other course materials
3. Records and statistics on faculty and staff hiring and on promotion and tenure decisions
4. Records and statistics on student recruitment, retention and graduation
5. Records on part-time and visiting faculty and speakers.

As architecture educators and practitioners, we do not need external agents to further analyze or magnify the problem that neither education nor practice is reflective of the demographics of the United States.
--When three decades ago, Urban League President Whitney Young chastised the architecture profession, for having only 1% African American participation in their profession and negligible progress since then (Landsmark, 2003) we have a problem.
--When out of the 113 accredited architecture programs, 7 (HBCUs) Historic Black Colleges and Universities (AIA/NOMA) schools offering NAAB accredited professional programs are educating 50% of African American architecture students (NAAB Statistics Report 1989/99-2002/2003) we have a problem.
--When the AIA Membership Department data 2002 statistics show that there are 69% Caucasian, 1% African American, 2% Pacific Islander/Hispanic, 3% Asian, 25% undeclared heritage, and 0% Native American/Alaskan, we have a problem.
--When according to NAAB’s statistics Report 1998/99-2002/03 out of a total of 1,914 full-time architecture faculty, 4% are African Americans, 23.7% are women, 6% are American Indians, 4.1% are Asian/Pacific, and 5.75% are Hispanic faculty, we have a problem.
--When this same report stated that out of a total of 1,156 tenured architecture faculty, 3.6% are African Americans, 17.5% are women, 52% are American Indians, 3.4% are Asian/Pacific, and 4.4% are Hispanic faculty, we have a problem.
--When the NAAB statistical report for the 2002/03 academic school year showed approximately 13% of total student enrollment for B. Arch programs are ‘persons of color’ and African American students were 3.64% of the total, we have a problem.
--When fewer American Indian students, Asian/Pacific Islander students and Hispanic students (B. Arch only) were enrolled in architectural programs in 2003 than 2002 (NAAB Statistics Report 1989/99-2002/03), we have a problem.
-When fewer African Americans and American Indians students graduated from B. Arch programs in 2003 than 2002, we have a diversity problem. When fewer American Indians and Asian/Pacific Islander students graduated from pre-professional programs in 2003 than 2002.
When we have these issues we can conclude there is a diversity problem.

This paper has presented a discourse of the underrepresented and marginalized in architecture education and its practice. By unmasking past and current practices, the author aims to lend support to the marginalized and encourage positive inclusive transformation with architecture education (Foucault, 2000). What would we find about our educational mission, values, beliefs, and philosophy relative to power relations, social conditions, equity, and justice as these impact increased diversity in architecture schools and consequently architecture practice? Are we really part of the solution or as Brown (1993) so uncomfortably alleged, part of the problem (McGregor, 2004).

A suggestion has been made as to why it is defensible and essential for this accrediting body (NAAB) to foster equity, diversity and multiculturalism in their own activities and in architecture learning environments (Simmons, 1998). NAAB now has an opportunity to begin meaningful and honest discussions with its constituents as to whether we should actively pursue diversity in all architecture programs through the addition of a “diversity standard” or maintain the status quo.

**Next Steps: “Rules in Use”**

NAAB’s “diversity standards” will enable schools of architecture to explain their *rules in use* as they relate to diversifying their architecture programs. Alternatively, intermediate steps can be taken to find out why some architecture schools (like those located in HBCUs), have modified their *rules in use* to produce positive outcomes (performance indicators), while other institutions with similar *rules in use* do not produce the same outcomes. What are the external forces that would affect the *rules in use* of those institutions which have little or no indicators of diversity programs to attract the underrepresented and marginalized aspiring architects? The object of this next step in the research process in not only to find out the *rules in use* of the NAAB accredited programs, but to ultimately show these schools of architecture the consequences of what they are doing by not diversifying their programs, rather than telling them what to do. (See Figure 1.)

**Conclusion:**

In conclusion, I’d like to quote from Foucault:

“The movement by which, not without effort and uncertainty, dreams and illusion, one detaches oneself from what is accepted as true and seeks other rules — that is philosophy. The
displacement and transformation of frameworks of thinking, the changing of received values and all the work that has been done to think otherwise, to do something else, to become other than what one is — that too is philosophy...It is understandable that some people should weep over the present void and hanker instead, in the world of ideas, after a little monarchy. But those who for once in their lives have found a new tone, a new way of looking, a new way of doing, those people, I believe, will never feel the need to lament that the world is error, that history is filled with people of no consequence, and that it is time for others to keep quiet so that at last the sound of their disapproval may be heard” (Chagani, 1998).

APPENDIX 1
Recommendation for Diversity’s Effect on Accreditation: “Lessons for Architecture Education”

Five Recommendations to build Diversity into Architecture Accrediting
1. NAAB should develop diversity standards and guidelines that include requirements and suggestions for creating a more diverse and multicultural environment for all architecture programs which manifestation will be reviewed by visiting accreditation teams.
2. NAAB should use media and published materials to promote diversity and multiculturalism, both directly and indirectly.
3. NAAB should develop and disseminate policy statements and guidelines related to inclusion and cultural pluralism.
4. NAAB should encourage administrators to include in the structure of their architecture department provisions for subunits to emphasize multiculturalism and diversity as part of their mission.
5. NAAB should develop and sponsor special forums and workshops on diversity and multiculturalism for member accredited programs in architecture (Simmons, 1998).

NOTES
2 In his March 27, 2004 presentation to a group of Higher Education PhD. Students at Morgan State University, Professor Richard C. Richardson of New York University defined “Rules in Use” as the values and norms which influence the operation of an institution.

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What I Learned from My Assistantship: The Role of Research Assistantships in Beginning Design Education

“This semester was my first in the School of Architecture. As a graduate student, I was given an assistantship working with an assistant professor and a 3rd year graduate student in his final year of study. My assistantship was a research-based project focusing on campus planning and gateway development. I knew that the project would be a challenge, since I hadn’t had a lot of experience in architecture or collecting research. At the end of the semester I was surprised at how many skills I had obtained,” says one beginning architecture/landscape architecture graduate student.

Schools of architecture around the country use assistantships to fill a variety of needs in their programs. Too often this includes shelving books, opening and closing the model shop, running copies, and other such busy work. Learning design and research within these types of assignments is implicit, secondary, and usually disconnected from the skills, knowledge, and techniques they will need to become the successful architects the profession requires. Graduate faculty at one Historically Black University’s School of Architecture have begun a concerted effort to structure assistantships based explicitly on a foundation of promoting types of learning applicable to development of exceptional students. In this way, assistantships become a form of directed independent study rather than directed labor.

“My initial expectations were that we would be finding information for the professor to analyze and manipulate but to my surprise, instead of just being worker bees, the professor wanted our input and analysis of the materials that we came across. This meant that we would get an opportunity to get our hands on the information and mold the ideas that would be presented to the university and community. This approach was a great stimulus in that it expressed the confidence that the faculty had in our ability as students. Furthermore, having our names associated with the work instilled a certain sense of pride in what it was we would be doing,” explains one student.

This student/faculty discussion session for the Not White: Diversity in Beginning Design Education Conference will address the role of research assistantships in beginning design education. The co-presenters, including two graduate students, will reflect on what they’ve learned through their research assistantships during Fall Semester 2003. To provide background context, their faculty advisor will discuss the rationale of using assistantships to supplement the educational experience, particularly in terms of helping the beginning design student learn new skills, knowledge, and research methods not otherwise taught in the beginning student’s first year of study. The session will conclude with a discussion of how other students and professors can make the most of an assistantship’s learning potential.
Introduction

“This semester was my first in the School of Architecture. As a graduate student, I was given an opportunity to have an assistantship working in the School of Architecture. The assistantship that I was given was a research-based project. I knew that the project would be a challenge, since I hadn’t had a lot of experience with collecting research or doing design. At the end of the semester I was surprised at how many skills I had obtained” says one graduate student.

The School of Architecture at Florida A&M University (FAMU) is improving graduate education by doing something new, at least, something new to most administrators, faculty, and students at the school. Instead of using graduate students primarily as helpers and laborers, the graduate program leaders in architecture and landscape architecture have been encouraging faculty to use assistantships as an opportunity to mentor and teach graduate students the skills, concepts, and processes they’ll need to be successful in school and later as professionals.

Characterizing this approach as entirely new for the school is somewhat misleading because professors have previously served as mentors to their graduate assistants and many students have learned important skills through their assistantships. However, now the difference is faculty and students’ efforts are becoming more explicit, supported, and directed. Philosophically, the shift from a faculty-centered, labor-based model to a student-centered, teaching and learning based model is a profound distinction. Now, many students and faculty view the purpose of assistantships as scholarly exercise rather than physical legwork.

Paper Purpose

The purpose of this paper is to describe Florida A&M University’s School of Architecture (SOA) assistantship model for the benefit of other graduate programs that are looking to maximize learning opportunities within the existing structure of their institution. Interviews with administrators, faculty members, and graduate students will illustrate the SOA approach. The experiences of these people allow the reader to see the participants the advantages of creating student-centered assistantships.

Requesting and Assigning Student Assistants

Once funding and available graduate assistants are determined, here is how the graduate assistantships are proposed and assigned. First, administrators, faculty, and occasionally local non-profit organizations submit requests for student assistants. These requests include a description of the assistantship project and the skills a student will both need and learn from the project. Following the posting of requests, students sign up to collaborate with a faculty member or engage in a particular project. Next, the graduate program coordinators and graduate faculty review the student requests and create matches between students, teachers, and projects. The primary criteria for matching includes: 1) student year in program, 2) opportunities for enhancing student and scholarly well-roundedness, 3) balancing learning variety and continuity, 4) student interest and faculty need, 5) project time requirements, and 6) personalities. Finally, students and faculty members meet to discuss assistantship project responsibilities and schedule.

The Rationale

According to the Richard Rome, Director of the graduate program in landscape architecture, the idea to use assistantships for teaching and learning is really one that came down to us from the School of Graduate Studies and Research. Andrew Chin, Director of the graduate program in architecture added that we did not want students passively watching books in the library or tools in the woodshop – “we want these students to be active learners.”

Active Learning

The notion of using assistantships for creating active learners is an idea rooted in education literature. Most proponents of active learning emphasize the reflexivity between teaching and learning. Research stresses that active learning occurs in the presence of active teaching. Good (1983) coined the term active teaching, which means a positive and proactive approach to teaching in which teachers are directly involved in guiding learning. Using graduate assistantships for teaching and learning requires faculty to be more active than usual.
One faculty member remarked that having a graduate assistant is akin to teaching a directed independent study – it requires more time than a traditional graduate assistantship but has far greater rewards in terms of depth and satisfaction. In addition, Richard Rome commented “professors have a very different relationship with their teaching and research assistants than they do with their students. The assistant is just that, a participant in the whole endeavor. It is like working as a stagehand or behind-the-scenes. The assistant and the professor work together to make the event happen.”

The Assistantship Project

A significant factor in using graduate assistantships for teaching and learning is the assistantship project. The assistantship project affects the student’s motivation to learn, including the range of skills and concepts they can learn. Newell (2003) says “project-based learning emphasizes depth of understanding over content coverage and comprehension of concepts and principles rather than learning building block skills in isolation” (5). The SOA administrators attempt to support projects that are multi-dimensional and authentic, supporting the development of broad skills and concepts while emphasizing service to the school and community. In addition, preparing students to effectively write a thesis and grow as an architect or landscape architect is a special focus. As one student says, “the project creates opportunities to practice researching while exposing the student to model making techniques, the design process, and map reading to name just a few things that I’ve personally learned.”

While it is easy to conclude that the assistantship project is, as one student puts it, “simply the vehicle for learning,” there are other valuable aspects to the project. For example, one administrator remarked that the “greatest benefit is the sense of belonging that results from the experience of being an assistant and the possibilities for lifelong bonds in such relationships.” One graduate student also sees the opportunity to create bonds from the assistantship project saying that the project creates a bond between all involved by bringing the students, teachers, and local community together.

Labor and Learning

By basing the assistantship upon a project rather than a place or person, the focus from labor to learning is more apparent. All too often, graduates assistantships are time wasters for students, failing to challenge their intellect. Rome says, “using graduate students to fill staff positions undermines the very reason that students are seeking such an assistantship. Menial labor probably pays more off campus, and may provide more on-the-job training. We hope that our students actually bring something to the jobs that they are asked to do.”

One graduate student said “my initial expectations were that we would be finding information for the professor to analyze and manipulate but to my surprise, instead of just being worker bees, the professor wanted our input and analysis of the materials that we came across. This meant that we would get an opportunity to get our hands on the information and mold the ideas that would be presented to the university and community. This approach was a great stimulus in that it expressed the confidence that the faculty had in our ability as students. Furthermore, having our names associated with the work instilled a certain sense of pride in what it was we would be doing.”

The preceding student’s sentiment supports Newell’s (2003) claim that “when students have a choice of topic, have time to really investigate something of interest, have responsibility, and can see an authentic goal and rationale, intrinsic motivation and a heightened sense of alertness and interest becomes a natural by-product” (7).

Teacher’s Role

The teacher’s role in using assistantships for teaching in learning requires reanalyzing their expectations and methods. For most professors this means balancing the degree of directed and undirected support that they give their assistants. As one student says, “I believe that the teacher should help encourage the student to search for answers themselves. Not to give everything to the student.” Apart from the project requirements, many teachers are re-conceptualizing even the simplest of tasks like running copies or finding articles by asking themselves questions like: how can I get my copies while at the same time teaching a student a new concept or skill that they can really use? Or, in what ways can the student learn from finding articles and how can I encourage that kind of learning? This kind of thinking by the
teacher requires a willingness to do things differently — a trait that can become contagious — as one student says “the teacher shows the student different ways of looking at things. In this way, the teacher helps the student find their own creativity.”

In terms of mentoring, the teacher’s role is not parent but more of a discipline-based coach. As one student simply puts it, “the teacher should help put a face on the profession.” Johnson and Huwe (2003) say, “in graduate school, a mentor supports, guides, and counsels a student as he or she accomplishes the important life task of successfully navigating a rigorous graduate program and prepares to launch into a new career” (6). Perhaps the most effective way for teachers to mentor is by making themselves available and open to the enterprise itself.

Learner’s Role

Part of the student or learner’s role is to “listen and be open to ideas” says one student. While listening and openness is fundamental to learning, it is only a part of the overall purpose of the SOA approach. By using assistantship projects that build interconnected skills and conceptual understanding the school hopes to broaden the learner’s role toward “… one of carrying out self-directed learning activities rather than carrying out teacher-directed activities. Whereby students are defining their roles, tasks, and time management…learning how to communicate, show, affect, produce, and take responsibility…” (Newell 2003, 5-6). Regardless of the degree to which any one student can move toward this ambitious role, it is essential that as one student says “the student-learner have a desire to learn. Dedication is essential to achieving any goal.”

Conclusion

In the future the administrators, faculty, and students of the School of Architecture plan to continue their efforts at making assistantships an effective enterprise for teaching and learning. As Rome says, “we are working very hard to make all assistantships rewarding to the graduate student as well as the faculty member or staff person involved. In other words, the assistantship should enrich the student’s total academic experience, not only provide financial aid.” Even though “it’s premature to make any conclusions about what’s been learned from these new projects” Rome says “the program is definitely a success in sheer, economic numbers and in numbers of students served. We are now working on the quality of the experience.”

For other architecture schools that are currently utilizing a model similar to Florida A&M, we encourage you to report on your approach and progress so that we can mutually benefit from our different experiences. For schools that are yet to consider using their graduate assistantships as an explicit means for teaching and learning, we encourage you to experiment with the notion. For our part, we will continue to examine the opportunities we can provide to students that maximize their learning experiences in meaningful, lasting ways.

Finally, it is important to recognize that a faculty member and a graduate student assistant co-authored this paper. This student helped research literature, provide an account of his experience, develop an interview instrument for obtaining information from administrators, and help write and edit the paper. Thus, this paper stands as a testament to the use of student assistantships as a means to teaching and learning.

REFERENCES


Gender, Memory and (Psycho)analysis

Is gender implicated in the way our students design? If we ask this through the lens of experience (as understood through memory) to belief (as reflected in our unconscious) then the gendered systems we encounter in our culture and society are unconsciously expressed in our design work. Teasing apart the cause/effect relationship is difficult but we might actually find the psychoanalytic process a useful model in further understanding the relationship of memory to production (and ultimately to the meaning of the production) through a greater understanding of the creator as subject.

All discourses in are our society are gendered and the schism between mind and body is a binary that often associates and identifies one gender with thought, intellect, and reason, and the other with body, emotion, and intuition. For a designer, in this case a designer of space, it is important to work within a strategic, rational process of design, yet unknown is how the idea came to be- and then how it becomes rationally (and sometimes irrationally) understood.

The seeking of insight, as a design obligation, in directions simultaneously both internal and external, is an undeniable requisite for understanding architecture as both science and art. A natural receptiveness, a quality often associated with beginning students, could include openness to the external, in the material sphere as well as to internal stimuli and knowledge. The psychoanalytic community might refer to the third eye here, the focus being on self-understanding as a means of insight and discovery leading ultimately to the act of creating. Layered onto this is the belief that our individual unconscious knowledge is derived from our cultural stock and experiences.

Maya Lin, the architect of the Vietnam Veteran’s Memorial, the Civil Rights Memorial, and the Women’s Table Memorial merges the rational with the transcendental. She refuses to separate east/west influences, reason, and intuition. In the design studio and in public critique and debate, this is difficult and almost always avoided. The architecture student and the architectural professional are not encouraged to recognize, articulate, or legitimize this duality. Our unconscious emerges as preferences, desires and longings finding expression in form and space making. For the design instructor, knowing or even recognizing this connection between gender, culture, and how and what is made by our students. Every student taps into their uniquely defined psychology and in turn it appears in the work produced.

The role of learning from experience clearly plays a large role in how we acquire knowledge. What is learned? How is it learned? Memory involves tasks of both recall and recognition contained within many memory systems. The important distinction here is between explicit and implicit memory systems. The former are what most of us think of as memory, that is, the ability to access information in consciousness. The latter involves information that can bypass consciousness. Memory is the vehicle for the surfacing of unconsciously held beliefs. Like the analyst, the instructor is working closely, (through the work), with the creator, (our students), as subject.
Memory is a vase
Filled with vivid Words and Places
Mysteries gathered one by one
As petals 'round a timeless sun
Placed beyond where seasons be
Existence held- Internally.

Anonymous

Is gender implicated in the way our students design? If we ask this through the lenses of experience—the students’ and the teachers’—(as understood through memory) to belief (as reflected in our unconscious) then the gendered systems we encounter in our culture and society is unconsciously expressed in our design work. Teasing apart the cause/effect relationship is difficult but we might find the psychoanalytic process a useful model in further understanding the relationship of memory to production (and ultimately to the meaning of the production) through a greater understanding of the creator as subject.

Gender is constantly created and re-created out of human interaction, out of social life, and is the texture and order of that social life. Yet gender, like culture, is a human production. Gender is such a familiar part of daily life that it usually takes a deliberate disruption of expectations of how men and women act to pay attention to how it is produced. Gender signs and symbols are so ubiquitous that we usually fail to note them—unless they are missing or ambiguous. Then we are uncomfortable until we have successfully placed the other person in a gender status; otherwise we feel socially dislocated.1

Published in 1995 in the now defunct Progressive Architecture, the article “Women in Architecture” describes in general terms the difficulties women still face as architects and students, and suggests that architecture as a profession risks being consigned to the margins of culture unless greater diversity is achieved within its ranks.2 And yet many women seeking acceptance in the field disassociate themselves from talk of gender difference in order to escape being tarred by the brush of female otherness of being contaminated by things female. For example, the notion, “woman architect”, widely disdained for presupposing an odious distinction contaminated by things female. For example, the notion, “woman architect”, widely disdained for presupposing an odious distinction contaminated by things female.

Consider the list Mark Wigley presents in his essay “Untitled: The Housing of Gender”: “The active production of gender distinctions can be found at ever level of architectural discourse: in its rituals of legitimization, hiring practices, classification systems, lecture techniques, publicity images, canon formation, division of labor, bibliographies, design conventions, legal codes, salary structures, publishing practices, language, professional ethics, editing protocols, project credits, etc.”4 We are all—teacher, student, administrator a part of this production of gender distinctions, yet as Nancy Fraser has written, “Although gender dominance is ubiquitous, in sum, it takes different forms at different junctures and sites, and its character varies for differently situated women. Its shape cannot be read off from one site or one group and extrapolated to all the rest.”5 There exists a collective cultural experience and yet each of our individual experiences is unique—what might be of interest to a psychoanalyst (or a teacher) is the ramifications of this duality- for the analyst the way ones’ experiences affect and impact what is created in human relationships; to the teacher, the way these gendered experiences affect how the teacher/student relationship and what is created spatially and materially; in this case, by the design student.

Again, why might any of this be important to us? Because gender has an undeniable role in how we experience the world, our place in the world, how we see ourselves and understand and interpret our experiences. This occurs both at the scene and time of the experience- but perhaps more importantly, later, as we recall the world and our movements, feelings, emotions, understandings of us in the world; and then as we create in the world.

In Jane Jacobs’ book The Death and Life of Great American Cities she does not specifically identify gender as an issue, but she does speak from a woman’s experience. Her subjects are mothers, children, the everyday and the ordinary, the informal, really all that which pertains simply and directly to the domestic life.

Maya Lin, the architect of the Vietnam Veteran’s Memorial, the Civil Rights Memorial, and the Women’s Table Memorial merges the everyday and the other- the rational with the transcendent. She does not separate east/west influences, reason and intuition. The architecture student and the professional are not encouraged to recognize, articulate or legitimize this duality. Our unconscious emerges as preferences, desires, and longings finding expression in form and space making. For the design instructor, knowing or even recognizing this connection between gender, culture and how and what is made by our students is an important pursuit. Every student works with their uniquely defined psychology and in turn it appears in the work produced.

The seeking of design insight, as a design obligation, in directions simultaneously internal and external, is an undeniable requisite for understanding architecture as both science and art. (Psychoanalysts too describe their craft in this way). A natural receptiveness, a quality often associated with beginning design students, could include openness to that which is external in the material sphere as well as to internal stimuli and knowledge. The psychoanalytic community might refer to the third eye here, the focus being internal, self-understanding as a means of a more universal insight and discovery; this leading ultimately to the act of creating.

56 NOT WHITE: Diversity in Beginning Design Education
Memory

Why memory if we are talking about internal insight and self-understanding? A familiar and often-used assignment given to first year students is to ask them to recall an early personal memory of a space they have occupied. For this assignment I have asked my students to draw in an emotive way their very first memory. Not surprisingly it is often their bedroom they recall- the view from their bed, often looking out- out of a window, out into the space of the room. This assignment is really asking students to recall what they know from personal experience. Peter Zumthor in his book Thinking Architecture writes of the importance of his earliest memories of being in his grandmother’s house and how these very specific material, spatial, really sensual memories directly and indirectly inform his work now. As a mature, educated designer it is interesting to note his increased reliance on memory as source and inspiration for his creative work.

Memory involves both recall and recognition contained within many memory systems. The important distinction is between explicit and implicit memory systems. The former are what most of us think of as memory, that is, the ability to access information in consciousness. The latter involves information that can bypass consciousness. Many of us complain about our memories, meaning our explicit memory systems. Little do we realize how effective our implicit memory systems are. There is a distinction also between short and long-term memory. The idea behind short-term memory is that at any moment in time, we cannot bring to mind all the information that we possess or even all the information that is potentially available to us. Instead we are limited in our ability to recall and process the information of which we are currently aware. On the other hand, long-term memory is the store of information that you have accumulated over time and on which you can call. It is long term in the sense that it can contain memories acquired a long time ago, for example, of events, experiences, ideas, etc. These memories are inexplicably linked to our cultured experiences- our gendered experiences.

“We have two minds then- two ways of knowing, two kinds of memory- one above the surface, in our moment to moment awareness: the other is below the surface, guiding us through life operating on autopilot”. What you know, but don’t know you know, affects you more than you know. That’s the bottom line of more than 300 experiments on our powers of unconscious learning. A person’s unconscious learning can anticipate patterns too complex and too confusing to be consciously noticed. The value to us as educators and architects is what role this plays in inducing creativity in our students. “Creativity’s intuitive dimension stems from unconscious processing.” Our unconscious creates a reality for ourselves depending on our assumptions. “we don’t see things as they are, we see things as we are.” Going back to Maya Lin, in her book, Boundaries, she says, “I feel I exist on the boundaries.” Her work consistently embodies this. She, like Zumthor understands how a buildings’ material act on our perceptions and experiences. Louis Kahn in the British Arts Center and the Kimball Art Museum meant to stimulate our imaginations through the careful and combined use of materials and detailing. He was recalling an earlier place and time, and both of these buildings are quite specific and at the same time emit a universality- if one is to believe it possible. At the very least his buildings enable a shared emotional response.

In the photographs of iconic modern buildings by Hiroshi Sugimoto he is trying to capture emptiness. His attempt is to create an image of unreality. This emptiness or unreality then opens the way for a new interpretation of reality in the eyes or the psyche or the imagination of the viewer. His photographs are intentionally not factual and specific. The blurring makes them unstable and not readily recognizable. There is an attempt to create emptiness in order to re-create a different fullness in the imagination; to imagine an existence full of potential creativity. I have asked my students who I have taken on extended study abroad trips to consider seeing and how seeing affects what are seen. This is an attempt then in trying to capture something else, something beyond, or something that only they might see while looking through the lenses of the camera. There is a tendency for us to see buildings as strictly objects, or as strictly an interior. I ask my students to try to look beyond the exterior formal and material qualities of the building to see and capture the intangible- the psyche of the building as experienced by them. These fuzzy photographs, if you will, recall other experiences, other possibilities that they’ve had. They transpose our socially defined selves to another place and time, uniquely their own. This act opens up for them imaginative possibilities that spring from their unconscious with its biases and past- bringing them to the surface of consciousness and directly into view. Like the psychoanalytic process, it is an
Psychoanalysis

“The process of creating—whether it be writing, speaking or building, is making manifest, in an outward expression that which we imagine within.” In her research Frances Downing has found that images architects draw upon carry emotive, experiential and objective information. These images have strong sensual qualities—light, color, texture and scale. “The mental image is a self-portrait of secret wishes and desires, as well as ground for common cultural values and assumptions. The mental image presents a personal biography as well as a vehicle for the designer to manipulate future projects.”

The relationship between analyst and analysand (the patient) is remarkably like that of the teacher to student. Language is the means of expression in analysis—between analyst and patient—it is the bringing from within to the outside through speech, much like drawing or other means of visually communicating is to architects—language to one and drawing to another—both are symbolic.

“When we move through space with a twist and turn of the head, mysteries gradually unfolding, fields of overlapping perspectives are charged with a range of light—from the steep shadows of bright sun to the translucence of dusk. A range of smell, sound and material—from hard stone and steel to the free billowing of silk—returns us to primordial experiences framing and penetrating our everyday lives.” (Steven Holl 1996)

This depth of experiencing the world from an architectural point of view is analogous to the depths of recollections of an analysis. The studio instructor critiques the work of the student but like a good analyst, the instructor will help draw out patiently the unique insights each student brings to the work. The analysts couch, like the drafting table or computer station is like a magic carpet floating through space and time, imagining and creating anew (together) from a constructed past. The marks left in the world, through design, tell us much about who has made them.

NOTES
3 Ibid, xi
4 Ibid, xii
5 Ibid, xv
6 Peter Zumthor, Thinking Architecture (Baden: Lars Muller Publishers, 1998), p. 9
9 Ibid, 61
10 Ibid, 73
13 Ibid, 23
14 Ibid, 21
Section-Plane Construction from Cube Design:
Three Dimensional Modeling of Sections through a Cube Designed with Solids and Voids as a Tool for Understanding the Importance of Sections in Design

The boundaries of a square can hold many two dimensional areas of space whether defined by the geometries of the square itself or by external forces. The boundaries of a cube therefore can hold many three dimensional volumes of space. To explore the possible variations within the volumes of space the designer must think, visualize and draw in sections cut through the space.

For the beginning architecture design student this understanding of three dimensional space is one, if not the most important design concept they must begin to explore. To consciously “think in section” is crucial for a successful designer.

This exercise begins with the design of a 3 inch wooden cube (from Jonathan B. Friedman’s Volume exercise in Creation in Space) containing solids and voids using one inch cubes and 3 inch by $\frac{1}{4}$ inch rods. From this exercise the student transforms the cube into a 3-dimensional exploration of sectional planes. A series of nine sections are cut through the cube and drawn at 2:1 scale. These nine sections are cut three horizontally, three vertically and three vertically perpendicular to the previous verticals. Section cuts are chosen to communicate the most information as possible about the original cube design. This project enables students to mentally imagine planar sections or walls cutting through the solid masses of their earlier cube designed of solid pieces. They must think inside the space of the solids.

All nine sections are then constructed into a 3-dimensional planar model with the same relationships as the original cube. Each student designs in study model using chipboard to explore the diverse methods of joining the intersecting planes and methods of support for the “floating planes” which result from the solids surrounded by space. Each student designs their own method of joinery for the many intersecting planes. The diversity of approaches varies depending on the students experience in model-making such as airplane modeling as a child, construction, shop work and background experience in areas such as sewing and sculpture. This joinery becomes very important depending on the material chosen for the final model. Various materials and connections are explored with a partial full-scale materials study model experimenting with numerous connection types, some being able to be disassembled and others permanent. Students using no permanent connections or joinery are able to disassemble the planes and correct mistakes before the model is completed.

Models have been constructed a diverse range of materials such as various papers both homemade and store bought, soft and hard woods, metals such as copper, aluminum cans, Plexiglas, foam board, Bristol board, stained glass, plastics, craft mesh, hog wire and even sculpting clay. A challenge is created as the student tries wrapping their mind around the puzzle of connections and joinery. The lack visible means of connection allows the pure reading of the intersecting planes. This project is a challenge in both design assembly and model craftsmanship. A two-point perspective is then drawn of the final model reinforcing graphic skills learned earlier which drawing only the cube.

The dialog between the intersecting sectional planes creates even more volumes of space bridging between the masses of the original cube. This project enables students to explore the possibilities of designing architectural space with the section plane model as the genesis for creating space.
The first design studio for the beginning architectural design student introduces a varied design vocabulary, an understanding of space, systems of order, and graphic communication skills used in the field of design. As part of the design process, students are introduced to creative and critical thinking skills. It is important that beginning design students are given the opportunity for the development of perceptual understanding and the visualization of ideas. We must give them the chance to analyze opportunities, develop and evaluate alternatives, and conceptualize form into three dimensions. Our challenge is to establish a diverse environment and a yearning for inquisitiveness, imagination and discovery.

For the beginning design student, the understanding of three dimensional space is one, if not the most important design concepts they must begin to explore. To consciously “think and explore spatially” is crucial for a successful architectural designer. This design studio exercise challenges the student to enter and “move through” a design of their making in order to read the spaces that already exist and explore the potential for further spatial development. To “think in section” is the goal. Sections convey the underlying conceptual strategies and ideas that are most clearly evident in a successful design. This project also addresses the issues of creating structure, materiality and connections.

Geometries within architecture can be very seductive with their endless possibilities. The geometries of the square include right-angles, axial symmetry, proportional ratios, curves, circles and triangles among others. The edges of a square can contain many two dimensional areas of space whether defined by the geometries of the square itself or by external forces. The edges of a cube therefore, can hold many three dimensional volumes of space. These geometries of the square and cube engage the student in dealing with the relations, properties and measurements of the solids, surfaces, lines, points, planes and angles that are all a part of architectural space. To explore the possible variations within the volumes of space, the designer must think, visualize and draw in sections cut through space.

This first semester first year design project begins with an exercise designing a cube, initially derived from Jonathan B. Friedman’s Volume exercise in Creation in Space (Dubuque, Kendall/Hunt, 1989). The students design a 3 inch cube which is implied by balancing the use of the wood solids and spatial voids. This dialog between the solids and voids creates volume. The model is composed of 12 one inch wood cubes and 12 wood rods, 3 inch by ¼ inch long. The students manufacture the cubes in the model lab from standard scrap lumber which they have planed and cut to size. This is typically the first introduction and use of tools and equipment in our model lab.

For this project, Section-Plane Construction, the student transforms the wood cube of solid and void spaces into a series of three-dimensional sectional planes, cut through the cube. The nine total sections are cut as three horizontal slices and six vertical slices, three which are cut perpendicular to the first three verticals. The locations of the cuts are chosen to communicate the most information possible about the original cube. Typically, cuts are taken at the center of each cube or rod, allowing for the planes to intersect at center points. Section cuts are never taken through joints, but always through solids. Students draw these sections at 2:1 scale with pencil on trace paper, pocheing what is cut through as solid. These poched planes become the basis for the three dimensional models which now become six inch implied cubes. These sections are seen as a series of planes, showing where the cut was taken, much like showing the slice or “kerf” of a saw blade through wood solids. As a result, the “slice” becomes the material plane through space, that was previously occupied by a solid volume. (See Figure 1.)

It is through the act of “making” that the meaning of these sections begins to coalesce into understanding. These nine sections are constructed into a 3-dimensional planar model maintaining the same relationships and proportions as the sections through the original cube. The use of different colors or patterns for each section poched in the drawing, and then continued with color or pattern in the study model helps the student differentiate which pieces belong to which sectional cut when model construction begins.

The first study model constructed is usually the intersecting planes of one solid...
small cube. Next, one total vertical plane intersecting the horizontals and other verticals is explored, before the whole. Finally, as all the larger pieces come together, the puzzle of supporting the small "floating" planes becomes a challenge. These "floating" planes are the result of section cuts through solid rod pieces which may not be contiguous to other pieces and therefore have no means of support. Cutting a section through the same piece, in a different direction, can often solve this problem. The explorations of structure, both in stability and support, and the exploration of materiality, dealing with connections, become by products of the exercise. (See Figure 2.)

This project is a challenge both in design assembly and model craftsmanship. The adeptness and proficiency of various skills such as measuring, cutting, assembly, joining and finishing are explored and developed. The models must be built to convey the beauty of the design but also have structural stability. Having no top or bottom, the models must be capable of being handled and displayed in various positions.

Investigations into a diverse assortment of construction materials are explored with several small study models. Final models have been constructed of wood, various metals (copper, brass, aluminum) as well as wire, Plexiglas, foam board, Bristol board, handmade papers, stained glass and even sculpting clay. Several projects have combinations of materials and colors for the different planes. The choice of materials, finishes, color variations, opaqueness or transparency within the design, can create a sense of order and new relationships throughout the model. A challenge is created as each student puzzles and explores the intersections, methods of joinery and connections for these planes. (See Figure 3.)

The problem solving of joinery depends on the materials chosen for the model. The level of sophistication and diversity which occurs often relates to the student’s previous experience in building things. Construction or carpentry experience, model making as a child, shop courses and background experience in areas such as sewing and sculpture have an effect on the materials choice, joinery and craftsmanship. Solutions such as stitching in textured materials, to welding and riveting in metal have been used as well as the typical glued or pressure fitting connections. Many use no glue and are able to disassemble and reassemble the planes, allowing for changes or corrections to be made. Often the lack of a visible means of connection allows for a purer reading of the intersecting and bypassing planes.

Once the final model is completed, drawing is another communication skill explored. First the student completes freehand sketches, and then constructs a two-point perspective drawing. The use scale, line weights, line quality and color are graphic skills developed. The students are challenged to create the same sense of depth of space with two dimensional skills that they were able to achieve with three dimensions. (See Figures 4 and 5.)

Photographs are taken in daylight to cast shadows and enhance the shaded areas, revealing the play of light and dark. Models constructed of a transparent medium are able to capture the wonderful play of light through the various planes and shadows that are cast. (See Figure 6 and 7.)

The dialog between the intersecting planes creates even more volumes of space bridging between the masses of the original cube. This enables students to explore the possibilities of designing space, with the section plane model as the genesis for creating space. While creating space, that limitless area in which all things exist and move, students learn to define the boundaries of that space.

This exercise gives the beginning design student a strong sense of accomplishment and pride in their work. Verbal presentations and critiques of the models, drawings and design development sketches are vital for the conclusion of this project. Self confidence is the key to challenging students to the endless inventive opportunities ahead of them.

This first semester design project has many further reiterations and possible avenues to explore. Often, students want to continue development, by adapting a human scale and creating a true architectural design, but as with many projects and works of art, they may never be finished, they just stop in interesting places. To deepen the mystery of what the student thinks they know, or all of us for that matter, is the role, challenge and joy for the
true educator.
A Search for Clarity

Ideally, searching for clarity is a perpetual activity. One might go so far as to say that such a search is synonymous with what we usually call Design. It entails a persistent questioning of preconceptions and the avoidance of any absolute indemnity. A genuine search includes an inevitable complexity and time consumption that stems from a steady maintenance and persistent fine-tuning in order to remain in contact with an appropriate frequency. The world in which we reside is a dynamic and diverse place and is often perceived in illusive and obscure ways. A reliable search can help us breach the obscurity by avoiding complacency, pretense and hopefully, misguided understandings.

This presentation concerns itself with:
the maintenance of a search for the architect’s role in contemporary society.
The exploration considers a myriad of factors, but makes no claim to be all-inclusive.
There is consideration given to a variety of perspectives on the subject including the layperson, the student, the academician, and the University administrator.

The search also ventures into a variety of common architectural stereotypes that the author has found to be obstacles in defining the profession of Architecture on behalf of the beginning design student. The diversity of opinion concerning our profession is an integral part of our persistent misunderstanding of the architect’s contemporary position and our inability to communicate as poignantly and definitively as might be desired. The collective array of architectural roles discussed is impressive and perhaps even excessive, but the diversity is relevant and undoubtedly an important factor in revealing a clarity. In the spirit of solidarity among design professionals … and because I am an architect, this presentation attempts to expose a hint of clarity within the array of divergent opinions.

The ideas of time and space, being consistent measuring devises throughout the history of Architecture are explored as vehicles for suggesting a clarity.

TIME - By acknowledging our continual displacement and replacement in time, we are able to free ourselves from the many incongruities pervading the profession to practice our art in a way that is both respectful of the tenants of the profession, as have always been and at the same time true to the fresh, unexpected quality of immediacy.

SPACE - Despite the diversity of roles an Architect manages, our professional advantage is the awareness that architecture inhabits a place in a way that recognizes its rich authentic and persistent stimulus. As such, we can be forever reminded that life and consequently Architecture is about the inclusion of such a quality.

Brian has spent a total of twelve years teaching Architecture, Graphics and Industrial Design. He resided in Tuscany for two years working with the Italart Cultural Study Center in Castiglion Fiorentino. Brian currently teaches at NDSU having spent the past couple years playing music and making baskets in Rhode Island. Brian has a passion for sharing an interdisciplinary reality with curious students. He brings a strong pedagogical bias to the table that strives for curricular coordination among faculty in an effort to build a solid pedagogy that fosters confidence and creative liberation.

His previous professional experiences as craftsman, potter, musician, architect, traveler, builder, basket maker and teacher have provided an awareness of the communion of all creative endeavors. Brian makes pottery because it feels good to be centered. He makes baskets because he enjoys the structural idea of warp and weft. He considers himself a maker because he is an architect and he draws as a means to many ends. Besides teaching, potting, weaving, and building, Brian has spent much of his life making music with a pervasive one-drop in support of Rastafari.

Research interests include design education, sustainability and the pervasive position of human beings in relation to the creation of architectural space. For the past fifteen years, Brian has managed to maintain a steady production of designed products for the sake of public consumption.
As a teacher residing in a university, I am ultimately concerned with education. I am an architectural design professor and, as part of my independent pedagogical stance, have always considered myself obligated to construct a solid and well-articulated foundation on which my students can base their future. Even though I am keenly aware of the rapid pace of change and exchange in an academic environment, it seems only fair to provide every new batch of students with a learned understanding of the direction in which they are heading; to give them an idea of the nature of the place that they intend to inhabit. This is important for many reasons beyond it being the very essence of their enrollment in the University. One being that the myriad conditions that bring students to study architecture in the first place are usually saturated with strange misunderstandings and often-bizarre expectations. On the other hand, the committed, the curious and the youth in general usually come equipped with a strong desire to clarify the unknown. They simply want to know what they are getting into so they can corner the potential for participation. I too appreciate the discourse, for it is a persistent reminder of our assembly. For everybody involved, a working definition seems like it would be a useful reference. (See Figure 1.)

I often wonder however, if it is perhaps contrary to the purpose of education to think that we even need a working definition for our specified course of study? Maybe the slate is better left clean so as to construct an understanding free of preconceptions? I try to maintain an appreciation and even a celebration of the thought that our relation with life is in constant flux and am therefore well aware of the idea that pausing in time to render an understanding as if it were a still life is far too limited of a vantage point. The cubists have successfully proven that such a position inaccurately represents reality based on its static relation with time. We now know that as time and space corroborate, it is our obligation to acknowledge the often-neglected temporal dimension, occupy it and, most importantly, invest an interest in it if we sincerely desire an environmental understanding. This quandary of definition would truly be a simple matter if our ability to understand an issue was simply a function of recognizing the effects of time. However, a definitive understanding either in or out of time is always more difficult when we have no apparent limits to confine the understanding. Without parameters, the playing field is large, multifaceted and seemingly unruly. We usually welcome the lack of limits. It is probably the very reason for our fundamental engagement in most creative adventures, but the absence of limits also presents us with quite an obstacle if we desire to “wrap-up” an idea like Architecture into a neat, tidy, communicable package.

I can say with some experience that a discussion concerning the definition of our professional duties has more than enough space to develop a complex and multifaceted debate. History has persistently plagued me with dispute when I exorcise my conviction to provide foundational support. The expectations explode into the atmosphere and sometimes, morale gets lost in the excitement. While I could attribute the confusion to the persistent debate between the profession and the academy, the fact is that the uncertainty is pervasive and profound in every milieu.

I have heard it said that: The architect (such as Mies van de Rohé) is a conductor who keeps track of the various factions of a construction project. He is the one who prompts the appropriate task at the appropriate time and controls the chain of events that lead to a completed and successful project. He is in possession of the proverbial big picture. He sees the interconnectedness of all the parts and of the parts to the whole as well as their underlying logic, all the while maintaining the fundamental purpose of the project. He is uniquely capable of delegating assignments in a timely and efficient manner so as to make the dream, a reality.

The architect (such as Phillip Johnson) is a leader responsible for providing a team of designers with the necessary vision for a successful project. She is the one with the answers and the one who articulates the bottom line of resolution. Such an impression leads to the fact that an architect is also a governor who might be seen as a ruler of workers. Under the Architect are those who are void of the understanding that lies only in her possession. The architect contributes to an intellectual science, not manual labor. This hierarchical understanding places a keen distinction between the workers who engage in manual labor and the Architect who has transcended practice with a knowledge that includes implications of an unquestionably profound, theoretical nature.

The architect (such as Renzo Piano) is an Inventor who reliably redefines what is new by giving birth to the previously unknown. In pursuit of a meaningful existence, the Inventor intentionally places convention under scrutiny in hopes of overcoming preconceptions
and revealing a superior relationship with not only our profession, but with life. The Inventor recognizes that within the infinite nature of time and space, we have not yet exhausted the range of opportunity that awaits our attention. He walks into the future anticipating change rather than routine, views life as a challenge and is anxious and willing to take risks when engaged in creative pursuits.

The architect (such as l’Corbusier) is an Artist who exercises creative spirit and meaningful expression for the celebration and delight of life. While the motives often appear cryptic to those who are unwilling to participate in the game, Architecture becomes a formal expression of our collective position within Time, in the cosmos, or in relation to our gods. It provides civilization with a tangible beacon of contemporaneity. The artist manages to communicate using an architectural language, that cannot be expressed with words or any other means of communication.

The architect (such as the anonymous monk) is a public servant, in that she provides a service to the community for the sake of accommodating human beings. An Architect engages in sustaining the pursuit of improving the quality of life by providing the public with the essential attributes of health, safety and welfare. As a bottom line, the architect works and is paid according to the social value of his work. This social dimension separates the work of an Architect from that of an Artist or a designer. The public servant has chosen his path based on a belief system that supercedes the self with the collective. The Architect is known to exploit his professional specialization for the sake of the larger context of which he is merely a part.

The architect (such as Aldo Rossi) is a historian who works in the present and walks into the future with a keen understanding of our inseparable connection with the past. The historian refers to the precedent of the past and brings its relevance forward to the present. He works in the continuity of time to acknowledge the joy the past has provided so that we can relive the pleasure forever more. The historian goes beyond relishing nostalgia to a redefinition of the past in today’s light. He knows that history is not a vocabulary of form or material, but rather a complex of spatial dimensions and juxtapositions waiting for their contemporary re manifestation.

The architect (such as Frank Lloyd Wright) is a professional who acts with respect, carries the attitude and proudly advocates the heritage of the profession of Architecture. A professional maintains a posture concerning the sustenance of quality. He is the datum from which the ideal of quality is arbitrated. The passing of time cannot faze the professional. Style and fashion rise and fall while the professional is able to see through the surface, confronting the substance that transcends time. He represents the profession in all his actions and stands as an icon for the social, ethical, and aesthetic responsibilities associated with our trade.

The architect (such as Daniel Liebskind) is a politician who is competent in the interaction with government officials and intimately aware of the codes and policies that govern every building project. The politics of architecture includes those activities such as the necessary lobbying and gerrymandering entangled in securing and executing a commission within the complex interactions of the designers, the manufacturers, the legal sector, the general public and of course, the client. A politician might be mistaken for a figurehead, but transcends the stigma by truly being able to find value, responsibility and pride in kissing babies and smiling at cameras.

The architect (such as Filippo Brunelleschi) is a humanist who sustains a historical lineage and acts on behalf of the inhabitants of planet Earth by providing a recognizable scale and culturally rich dimension to the built environment. He holds tightly to the idea that Architecture is ultimately for addressing human needs, whether they be physical, intellectual or spiritual. Scale is an issue for the humanist because it pertains to every facet of our lives; from what we eat, the size of our residences and cities to the technology we utilize and the speed at which we travel. The humanist wants to insure us that the world in which we reside appears as it is and not as an illusion masking the truth. He proudly occupies a distinct vantage point and dependably measures the world from a human perspective.

The architect (such as Charles and Ray Eimes) is a fortuneteller, friendly with the zeitgeist and able to predict future trends so as to consistently occupy the cutting edge. No matter how experienced or wise, the act of creation is a mysterious activity, even to those of us who engage regularly. Some approach the mystery of the future as would a scientist imagining that the process can be controlled in a rational way. Others approach the enigma, as would the alchemist thinking that there is an appropriate combination of ingredients that result in creation, similar to how one bakes a loaf of bread. The fortuneteller however, engages the process by surrendering her ego to the mystery of the universe and welcomes its assistance in every creative venture. She knows that a creative act is not hers alone. She attributes success to the recognition of the spirit that carries the truth and knows that it is only with the assistance of the spirit that the unknown can be revealed.

The Architect (such as Frank Gehry) is a technologist who essentially inhabits a virtual world. Despite a pale complexion and sometimes even atrophied social skills, he stays abreast of the latest technology and has an extreme appreciation for the network of digital convenience so pervasive in our contemporary media-savvy society. It might be that the technologist is easily seduced by the moment, placing complete trust in whatever the system has to offer, but he has voluntarily embraced the digital environment as an appropriate means of creating, presenting and producing our built environment … for better or for worse.

The architect (such as Walter Gropius and Sambo Mocabee) is a teacher responsible for educating the public about issues of quality. The primary task of the educator is to provide the client with a designerly understanding that satisfies the choice to engage a collaboration with an Architect. Consequently, the client / Architect dialogue serves as a vehicle for the Architect to remain in tune as well as refine his own understanding of the profession. The architect acts as educator in the office while she accepts the responsibility of mentoring interns, thus supporting the profession. She is an educator in the University as she introduces concepts and theories and provides instruction and guidance to hungry students. She is educator to the construction industry with consistent demonstration of expertise and desire to push the conventional envelope. Even if the education process occurs anonymously without
notice or announcement, the completed work is didactic in its ultimately gathering light and casting shadows for all to see.

The architect (such as Carlo Scarpa\textsuperscript{13}) is a craftsman involved in a creative activity of “making”. What architects do in the absolute most fundamental way, is make - things. Whether it is drawings, walls, details, or just decisions, Architects are makers. Like most crafty endeavors, Architecture is a one-of-a-kind artifact. It is of course bigger than a weaver’s rug, a basket maker’s basket, a blacksmith’s horseshoe, or a potter’s t-pot, but Architecture is hand-crafted by artisans in a very similar fashion. Architecture is about the melding of ideas, materials and disparate energies into the material reality of a habitable environment. The quality of an architectural product is a simple function of how crafty is the Architect. He must be keenly aware of the execution of details at every scale and be able to distinguish between precision and expression … between a mechanical accuracy and a Human endeavor.

The architect (such as Victor Papanek\textsuperscript{13}) is an ecologist who acts as steward for our planet. A recent consideration finds the Architect as both a local and a global resident. She is well versed in maintaining a broad focus and therefore protects our precious resources from those whose vision is too shallow or perhaps tainted by a vision of economic opportunity. An architect is empathetic with the harmony of the Earth’s ecosystem and acts with caution and respect in her environmental collaborations. She is not influenced by fashion, trends or technological acrobatics and at the same time, she in not a ludite. She is guided by the desire to do the most appropriate thing for the sake of the residents of spaceship earth. Every thing and every time is her responsibility. She maintains a unique holistic perception by focusing on the future while engaging in the present and learning from the past. There is an urgency to think and act locally so as to take control of immediate circumstances with a participatory agenda unaffected by the increasingly pervasive doctrine of disengaged apathy.

I have no desire or reason to disagree with any of the above architectural characters because I am quite sure that the diversity has an important relevance. The collective array of versatility is certainly impressive, but naturally leads to the question of whether it is \textit{how much} of each role is portrayed or simply \textit{which} role is played that defines the Architect? Vitruvious could answer that question without hesitation, as could Palladio because they each inhabited a different world than the one in which we presently reside. Their world was finite, centered and seemingly comprehensible. With time, we have ironically lost much of that clarity and can no longer be so sure of our relative cosmological position, which tends to make most every definition we seek these days, a difficult assignment.

The irony lies in the construct of our global village. Today there is much more available space to derive understandings and misunderstandings … more geographic space, economic space, cosmologic space and even fantastic space to mention a few contemporaneous opportunities. If the understanding of an Architect’s role was simple and clean once upon a time, today we can no longer make such a claim.

While I know it is not true, I like to think that our considerations concerning the role of an Architect have always been in flux? I imagine that our understanding of the profession as it evolved with time, reached a point when it became so congested with inflated expectations and multifaceted obligations that it fell victim to a structural failure and violently exploded. It is not too unlike any concept that endures the likes of time. As the idea is forced through the many various forms of expression and communication that belong to different moments in history, the idea changes and we consequently interact with it differently. Perhaps this hypothesized structural failure came as a result of the world eventually becoming vast and complex enough that it could simply no longer facilitate such a pretentious, all encompassing profession? (See Figure 3.)

Whatever the reason, it might be that the various understandings and compound liabilities that resulted from the structural failure’s explosion flew through the air and landed in a broad variety of diverse places. These assorted places then each adopted a different way of understanding the role of an architect and consequently the architecture in each place became a reflection of that unique understanding. So it is that we have become descendants of an architectural catastrophe that has left us with an incomplete and often confusing comprehension of our professional heritage?

While we are all well aware that the aforementioned eruption theory is a considerable stretch of the truth, what we can say with some certainty is that first and foremost, an Architect is a designer. Ironically however, a designer is not necessarily an Architect. That lack of
reciprocity presents us with an incongruity because automatically, an Architect is more than one thing. She is at least a designer and something else that a designer is not … necessarily. In addition to that particular irony, another broad swooping certainty is that she is also one who carries an attitude that sustains contact with every aspect of her life. An architect’s designerly actions are ‘usually’ governed by a posture that carefully considers a rather broad perspective of concerns and leaves very little space for being idle, neutral or disengaged from critical thought. Without such an attitude of persistent engagement, the professional edge of an Architect dulls, becomes diluted and its status is compromised. (See Figure 4.)

Architectural ideas are not abstractions. They can be seen as products of the places we inhabit. An Architect must reside in a state of consciousness that includes a big enough horizon to render the environment - clear. While the space around us is dense with all sorts of pollution and congestion, and the predominantly concrete and asphalt surface on which we walk is also dense and not easily penetrated, the Architect must be knowledgeable of the many ways to access the seemingly impenetrable breadth of our environment. I like to think of the architect as one who is primarily responsible for recognizing opportunities. One who walks through life with open eyes and identifies potential … occupying the edge that separates convention from invention, the present from the future, the simple from the complex and the beautiful from the ugly. She has a highly refined skill in reading above, below and between the lines. (See Figure 5.)

The super heroes residing in our psyche, capable of achieving such feats as seeing through that which is opaque, envy the architect’s keen perceptual skills. Like the super hero, the architect is also a good neighbor because she has a knack for utilizing this keen perception to benefit others. She is a soothsayer and translator of stories. Her stories are told by investing ideas in material. She is able to express and subsequently foster a quality of life by transforming material into space and time. The architect is fluent in many modes of communication. She voluntarily constructs the communiqué. In addition to telling stories, she draws … writes … models and of course, builds. She is fluent in plumbing, electricity, physics, and Italian. She employs metaphors. She articulates with kindness because as was mentioned earlier, she is a maker. She realizes connections between seemingly disparate entities and discovers the potential for unity because she is a builder. She carries a keen respect for materials and tools as she does for history and the entire breadth of allied arts because they are her partners in the realization of meaning. If not a super hero, an Architect is at least a crafty entrepreneur. (See Figure 6.)

The attention given to contextual circumstance is a reliable dimension of the profession of architecture. The idea of context is big and spans many dimensions, perhaps the most important being temporal, which provides us the opportunity to interact with contemporaneity. An architect today cannot expect to act, as did an architect fifty years ago. Time flows, and is incessantly taking us on a ride without conclusion. If we dare notice, the ride has brought us to a unique place in time that provides an opportunity for liberation from the many dogmas that often plague our profession. I suspect that time always provides a place for us to question that which we are given, but we usually ignore the opportunity because the interrogation is often uncomfortable. It requires a maintenance that consumes energy. We tend to perpetuate the well-known myths of our profession simply because we are able to do so… because we are able to do so, simply. Maybe we do not want to have to deviate from the understanding that has been so clearly articulated in our textbooks. Maybe we do not want to admit that despite our professional devotion, we might be clinging to an anachronistic comprehension. We remember and appreciate the story as told and celebrate our authority over it.

By acknowledging our continual displacement and replacement in time, we are able to free ourselves, despite the confusion and disorienting complexity, to practice our art in a way that is both true to the tenants of the profession as have always been and at the same time true to the fresh, unexpected quality of immediacy. Our optimum vantage point therefore is certainly not static and at the same time, not necessarily kinetic. It might instead be considered an intersection. We reside in a place that is conducive to dreaming. Our advantage is to inhabit a place rich with an authentic and persistent stimulus so as to remember that life is about the inclusion of such a rich quality and it is the Architect’s contract to perpetuate it. What Architects are able to do well is that which segregates them from those people who tend to be ‘clients’. They know how to devise a plan and execute it … to materialize it … to realize it. Such a trait is an attribute to the profession of Architecture and
envelops everything else they do. It is a trait that we all, despite our livelihood, could use a little more of. The biggest obstacle for students to overcome when learning to be Architects, is to bring their ideas to fruition. There is often a tremendous hesitation by students because they tend to lack the self-confidence necessary to find fruition. There are numerous reasons why we rarely arrive at a bonafide conclusion, but the fact that the idea is carried only so far is a denial of the very definition of design, which I understand to mean the development and transformation of an idea to a refined and meaningful state.

What Architects do is change a mental construct into a physical construct. The ultimate conclusion of a design process is to build, so that we are able to interact with the idea on a physical scale. The objective is to be effected by the idea … to be physically consumed by the idea.

The fundamental evolution of an architectural design goes from the idea residing in you - to you residing in the idea. (See Figure 8.)

REFERENCES
In the fall semester of 2003 the School of Architecture at North Carolina State University implemented a mixed media representational course supplemented with online content. The goal was to establish a medium that disseminated instructional content and displayed student work. This pseudo virtual classroom, however, was intended to function actively as a medium through which student’s perused each other’s work and accessed instructional material pertinent to their education. Due to the relatively large class size, approximately 65 students, and the wide range of representational techniques covered, both hand and digital, it was clear that course instruction must be supplemented with a medium that promotes self paced individual development as well as an awareness of the work of one’s peers. In such a large class it would be virtually impossible for student’s to see all other’s work within the development as well as an awareness of the work of one’s peers. In such a large class it would be virtually impossible for student’s to see all other’s work within the traditional model of “handed in” assignments. No doubt, interaction occurs within the studio amid the flurry to complete assignments. Student’s exchange techniques and often participate in a healthy form of competition. This however, is typically contained within the boundaries of the individual studio, and its corresponding room, floor or building, limiting the awareness of a diverse range of student work to a familiar few. It was decided therefore, that students would post work to their own website, effectively re-presenting the content produced for each individual assignment. Each website is in return linked to master index on the course website, establishing a publicly accessible online student gallery. With the completion of each assignment, gallery size increases and a catalog of student work is established.

With any representational course, the produced artifact is reliant upon the content chosen for study and presentation. Its associated scale, complexity and materiality affect the range of techniques employed as well as the general interpretation associated with each exercise. For this course, each student was assigned a noteworthy recently completed building. They proceeded by selecting a segment of their assigned building. Size and complexity of segments varied with the scale of each building. This segment served as the focus of all subsequent exercises throughout the semester. As media and techniques varied, the object of presentation remained constant. With this, students focused exclusively on what and how to represent rather than simultaneously designing content and deciding how to represent it. The media affected message.

This paper seeks to prompt a discussion concerning the introduction of representational techniques to the beginning design student. The growing number of digital techniques and yet the value of traditional techniques has dramatically increased the architect’s repertoire. The learning curve, however, associated with many of these new digital tools is significant and the resulting work produced by students is often tethered to the computer and difficult for others to observe and learn from. How does one respond to these increased pressures? Does this require an increased level of specialization within a student’s curriculum or is it essential for students to develop a facility with all these tools? The implementation of the representation course at North Carolina State University was intended to explore these new pressures through the use of alternative teaching methods. The content of this paper discusses in depth many of the issues that prompted the creation of such a forum and speculates upon the potential for alternative methods to enhance the effectiveness of an increasingly complex set of techniques and their implications upon the creation and representation of architecture.

Jeremy Ficca received his professional BARCH from Virginia Tech and his post-professional Masters of Architecture from Harvard University. Professor Ficca has taught studios at The Boston Architectural Center and Harvard University and practiced in the offices of Machado and Silvetti, Pasanella+Klein Stolzman+Berg and The Office of Peter Rose as a senior designer and project manager. During his tenure at these offices, Jeremy’s professional experience included notable projects such as The Getty Antiquities Museum Expansion in Malibu California, the Princeton University Master Plan, the University of Utah Museum of Art, Whitney Museum of Art expansion study as well as private residences across the United States.

Professor Ficca’s research involves common and emerging materials and their application related to topics of production, culture and customization. His research was included in Harvard Universities Immaterial / Ultramaterial exhibit and publication and presented at national conferences. Professor Ficca joined the faculty of North Carolina State University in the Fall of 2002 as a tenure-track Assistant Professor of Architecture. He was awarded a 2003 North Carolina State University Faculty Research grant to explore variation within serialized manufacturing related to the surfaces of architecture. Through his research, Jeremy seeks to probe emerging alternative relationships between design and fabrication fostered through the use of digital techniques.
The influence of digital media upon the practice of architecture, albeit still in its relative infancy has affected all facets of design and production. We as architects have been prompted to reevaluate if not adjust the way we operate on a daily basis. The fact remains that for the majority of practice, the computer and its associated digital media has largely been relegated to two roles; an instrument for the efficient production of drawings and an instrument of representation. The relative timid use of digital media can be traced to many factors, unfamiliarity and subsequent skepticism of its benefits; a longstanding method of working and conventions based on hand drawing and cost, time and anxiety to mention but a few. Over the past decade a generational gap became evident between those new to the profession, equipped with emerging skills related to the use of digital media and those well positioned within the profession with limited understanding of the potential of this new media, let alone the skills to operate it. As is the case of many technological advances throughout history, the resulting application has widely conformed to existing conventions and preconceptions. The academy and a select group of practices linked closely to it have in some cases embraced the discipline and unanticipated behavior this new media brings to the design process. In both cases, the academic environment affords the opportunity for a critical engagement of an instrument that is another tool in an architect’s repertoire, but also a medium with evolving influence. The pedagogical dialog related to the infusion of digital media within the academic environment is broad and well documented and suggests alternative studio models such as paperless studios. Where and how digital media is introduced to the student requires consideration.

This paper reflects upon the integration of digital media within the curriculum as implemented through the creation of a course addressing both analog and digital media. It seeks to propose alternative models of instructional forums in which education and evaluation respond to the opportunities and constraints associated with the learning and application of these new tools. Furthermore it prompts a reconsideration of the position of digital media instruction within the curriculum and its impact on the culture of studio and the curriculum in general.

**Analog Osmosis, Digital Dismay**

The dissemination of analog representational techniques, specifically drawing, has occurred across a wide range of forums, including but not limited to self-instruction, workshops and formal drawing classes. Typically these are tethered to the design studio either in the utilization of its physical space or in association with a particular studio design project. In the design studio the object of representation usually is the object of design. Exceptions, such as precedent studies or found object documentations are typically limited in content or duration. The reciprocal relationship between design and representation promotes a design process integrally related to the media, allowing for the coexistence of multiple forms of representation. This is evident in the drawings of Carlo Scarpa where the drawing sheet seamlessly blends sketches and technical drawings at multiple scales. (See Figure 1.)

Historically, the relatively shallow learning curve of many of these techniques promoted dissemination down through the ranks in which students taught each other, resulting in a general culture of resourcefulness. Simply stated, students are inspired and compelled by the work of their peers. Conversely, digital media often involves a steep learning curve and requires pointed instruction. Additionally, the intrinsic tether between hardware and software results in design artifacts that are often exclusively virtual. This results in a selective display of work, often inaccessible to one’s peers other than at the time of review or jury. Compounded by each other, these two factors potentially contribute to a studio environment in which the development of technical and design skill is compromised by a lack of dexterity with the tools. Although the design studio is the forum for the infusion and application of digital media, it must not be degraded into a lab for software instruction. For these evolving sets of techniques to become truly integrated into the studio sequence the foundation of skills and awareness of potential must be laid elsewhere.

**Becoming Digital**

The position of digital media instruction within the curriculum determines its utilization by the students and affects its subsequent utilization within the profession. If it is to be utilized as a tool for design inquiry, not merely an instrument for efficiency, students
must begin the process of experimentation early in their education. They need not achieve mastery, but rather become familiar enough with the technology so as to be able to strip away its mythological veneer. This requires time for experimentation with each of the various studio topics within a curriculum. The utilization of digital media in the creation of form is quite different than the study of site and context. By providing foundational skills early in the curriculum confidence and familiarity are fostered. This promotes a skillful and thoughtful engagement of the tools later in their education and eventually in the office.

At North Carolina State University a required digital media course and digital studio sequence aim to promote this engagement. The lecture course occurs in the semester preceding the digital studio, allowing students to develop a repertoire apart from the typical demands of studio. The College of Design at North Carolina State University has a rich tradition of making in which, the value of analog techniques, as a tool for representation and a cornerstone of visual education, remain significant. Indeed, digital media should not supplant this heritage. It’s use within the studio however is inevitable and requires consideration in light of current teaching pedagogies. Analog and digital media reveal noticeably different issues and biases.

With hand drawing, the drawing describes a three dimensional object or building that does not yet exist. (See Figure 2.) Notions of abstraction, process, scale and context are tied to the drawing surface and the process of hand drawing. Scale, paper size and orientation are all considered at the onset. Process is recorded through each sheet of paper or layer of trace and readily available for reference. Replacing hand drawing with digital media in the entry studio undermines the ability for students to recognize these issues. The computer allows one to work directly on the three-dimensional object, effectively eliminating the abstraction of hand drawing and flattening the distance between designer and object. As a consequence of this, the effect of working on the computer is cumulative. Nothing is lost. The designer moves from detail to ensemble and back again, potentially inverting traditional design hierarchies. Although it is feasible to address some of these issues through digital media, such as saving unique files for each iteration, their latent value within the process is best conveyed to the entering student through analog techniques.

**Implementation**

To encourage the infusion of digital media within the architecture curriculum an analog and digital representation course was implemented. Currently this consists of undergraduate and graduate students and occurs in the third semester for undergraduates and first semester for graduate students. Due to the relatively large class size, approximately 65 students, a workshop or studio model would prove ineffective for instruction. This was compounded by the objective to address both analog and digital techniques over the course of one semester. As a result, work would be completed at desks, on laptops and in computer labs, fragmenting and limiting individual consciousness of peer work. If such a course is to be effective at fostering an infusion of digital media into the foundation of design inquiry, beyond instilling the necessary skills, it must present the discourse associated with the media and promote a culture of shared knowledge. As a result, a hybrid format was adopted, providing lectures regarding topics related to the application of digital media within the discipline of architecture and tutorials for the software utilized. This was supplemented by a course website which provided all course related material and functioned as a portal to online galleries of student work. At the commencement of the semester, students were instructed on the basics of website creation. Following this, they were required to post individual websites that functioned as a medium to display completed assignments. With the completion of each assignment, gallery size increased and a catalog of student work was established. Hand drawn assignments, such as planometric and projected drawings were scanned and posted, eliminating the necessity to submit originals. The course website permitted a public perusal of all student websites while providing a means for assignment evaluation by instructor and teaching assistant. This promoted familiarity with peer work from other studios or programs (graduate student studios are located in a separate building than undergraduates) and encouraged a dialog outside of class.

As with representation in general, the final product is reliant upon the content chosen for study and presentation. Its associated scale, complexity and materiality affect the type of techniques employed as well as the general interpretation associated with each exercise.
The techniques addressed; analog planometric and projected drawing; raster and vector manipulation; website creation; two-dimensional digital drawing and three-dimensional digital modeling, rendering and animating were numerous and for some, relatively complex. (See Figures 3, 4, and 5 - images from Architectural Representation Course at North Carolina State University, Fall 2003.) Assignments therefore, focused exclusively on representation. Utilization of this media as a design tool would occur in the following semester’s digital studio. Students were each assigned a unique noteworthy building, from which they chose a segment of reasonable size and complexity. This provided the content for each of the ensuing exercises. With the object of inquiry given, students could focus exclusively upon utilizing the tools to assist in representation. Although the end goal is to foster a critical utilization of digital media across all facets of design inquiry, to start, students must develop a reasonable dexterity with the tools. Considering this, design and representation would prove burdensome and divert student focus. For efficiency, assignments often combined more than one technique. Perspective hand drawing assignments for example required students to draw, scan, digitally manipulate and post online. This promoted a hybridization of techniques while allowing students to develop analog and digital skills simultaneously. As a result the course addressed a number of techniques.

As the area of influence of digital media upon the design and construction of buildings expands, the knowledge and skill required to navigate this terrain steadily increases. The emergence of digital manufacturing tools such as CNC milling machines and stereolithography within architecture programs expand potential techniques and provide a means to physically manifest, information previously limited to the virtual realm. This however, adds to a growing list of techniques utilized by students and prompts consideration of how best to equip students with the skills required in the context of existing curricular demands. Although there are many tools, their interrelation points to a common thread, the three-dimensional digital model. From this, emerge most digital representation techniques, suggesting a primacy of the medium. Plans, sections, animations and physical models can all spring from this source. As a result, digital media instruction should center on the process of three-dimensional modeling and survey other techniques to expose the connections. This provides time for focused instruction while promoting a design process that utilizes emerging tools. Conversely, a cursory survey of all methods, including modeling, would leave students ill equip to fully utilize the medium in their subsequent studios.

The dynamic of studio will continue to change as digital media becomes more transparent to the process of design. Through this, the instruments for the exchange of ideas and displaying of work will take on new forms. Web based galleries and student hosted websites suggest compelling extensions to the space of studio and offer tremendous potential for new forms of collaboration. The interface of digital media, however is not neutral and simultaneously draws us closer yet further apart. It is through this paradox that we should consider alternative methods of education in which the media is not only a tool for design but also a medium for the collective exchange of ideas.

NOTES
1 Gregg Lynn, Animate Form (New York: Princeton Architectural Press, 1999)
Site as Seeing –
the Search for Identity and Meaning

between black and white
what color?

between fear and courage
what dream?

belief and doubt
the age old dance
between what is hidden
and what is seen. . .

the world
a room
a crowd
a face

the eternal struggle for meaning. . .

The use and exploration of the site as tool, storyteller, guide and dreaming:

tool:
In utilizing the site as a tool, the design student identifies the physical and contextual elements of the site (natural and man made)

storyteller:
In exploring the site as storyteller, the design student identifies the cultural and geographic elements of the site that give it its identity and fixes it in time (artifact and invention)

guide:
In approaching the site as a guide, the design student constructs a framework (actual and conceptual) that serves as a touchstone for his/her design

dreaming:
In allowing the site as dreaming, the design student creates a place that is a dialogue between the didactic and the possible (program and objective)

Through each step of the above process, Boundary, Gate, Path, Hearth and Line serve the dual purpose of assisting the student in identification of the diverse quantitative characteristics of a site as well as in the uncovering of the diverse qualitative possibilities of a design. In this way, the student begins to understand what physical and conceptual influences make a site unique and how application of that knowledge can root a “place” in its own history while giving it identity and meaning.
On the first day of class in Design I, I ask my students to draw their ideal house and to site it in their ideal location. The majority return drawings that depict fancy suburban houses that have three car garages, a grand entry, an identifiable style such as Colonial, Mediterranean or Tudor and a swimming pool. At most, the shy presence of a tree or two in the background is the only indication as to where this house might exist. At this stage in the students’ education, the “ideal” is informed by what they have seen and experienced in their immediate environment and through the media. In subsequent design studios, this challenging question of the “ideal”, though disguised in a given building program and an assigned site, and the answer, wrapped up in the newly acquired accoutrements of graphic and model making skills, still lies at the heart of their design education. If one of the primary objectives of design studio is to have the student learn to design, based on architecturally informed criteria, an “ideal” solution to a problem, how may they be taught to define “ideal” and why is it important?

In the first year design studios, projects introduce students to two and three-dimensional spatial concepts, fundamental architectural principles and the tenets of intellectual and theoretical inquiry. These precepts of design are then reinforced and further explored in the second year design studios where emphasis is given to the concept that architecture, while being informed by program, precedent and function, must be a synthesis of both ideological and pragmatic concerns. To the design student, this world of academic endeavor seems disconnected from the reality of built architecture. For in the words of John Berger, “Seeing comes before words. The child looks and recognizes before it can speak.”1 Surrounded by a visually oriented culture, in which the built landscape is identified by its homogeneity, given significance through repetition, and assigned meaning depending on its degree of predictability, it is natural for the student to be skeptical of, if not totally bewildered by, ideological concerns. Little of the built environment they have experienced to date appears to be imbued with theoretical and/or abstract ideas. It is not because built spaces do not possess them but because they have not been taught to see beyond the surface of the object to its essence. For “there is also another sense in which seeing comes before words. It is seeing which establishes our place in the surrounding world; we explain that world with words, but words can never undo the fact that we are surrounded by it. The relation between what we see and what we know is never settled.”2 Therefore, it is here, at the threshold between what is known and what is unknown, between what is seen and yet unseen, that the exploration of diversity in terms of what may be “ideal” plays an extremely important role in the students search for an architecture imbued with individual identity and meaning.

Site as Seeing

The site is the student’s first introduction to the phenomenology of architecture. Anchored in space and time, it is a tangible entity that can be visually observed, experienced and documented in its realness. In addition, the less tangible elements of a site (physiological and psychological data) may be investigated and documented. A seemingly blank slate,
it harbors, for the student, a myriad of possible creative solutions. Through the use and exploration of the site as tool, storyteller, guide and dreaming, both quantitative and qualitative information is gathered:

tool:

In utilizing the site as a tool, the design student identifies the physical and contextual elements of the site (natural and man made). This gathering of information includes the traditional physical elements of analysis such as views, topography, wind direction, and sun orientation. It also encompasses the psychological and physiological contextual elements of: boundary as indicated by public/semipublic/semiprivate/private and hierarchical spatial characteristics; gate as indicated by existing pedestrian and vehicular entry/egress patterns as well as innate entry/egress patterns, path as influenced by boundary, anchored by gate and augmented by hearth; hearth as indicated by potential focal point/gathering locations; and line as indicated by and explored through physical movement as well as visual connection through the site.

storyteller:

In exploring the site as storyteller, the design student identifies the cultural and geographic elements of the site that give it its identity and fixes it in time (artifact and invention) through the use of cognitive mapping. This catalogued information includes the actual, existing conditions found on the site: visible boundary, gate, path, hearth and line as determined by the presence or lack thereof of existing structures, utilities, traffic patterns and landscape elements; and encompasses the invisible: boundary, gate, path, hearth and line as indicated through an investigation of the history of the site (what former buildings or building uses the site harbored in the past), as well as the history of the surrounding built context and future development. Moreover, the physiological and psychological aspects of the site are investigated through the engagement of the five senses and recorded via the media of poetry, photography, audio recordings, and small installation pieces. In this way, the quantifiable, physical attributes of the face of the site as well as the qualitative “fingerprints” of the character or personality of the site are revealed and assembled into a reading that is factual (artifact) but has the potential for fiction or myth (invention) depending on the individual’s interpretation.

guide:

In approaching the site as a guide, the design student constructs a framework (actual and conceptual) that serves as a touchstone for his/her design. With this newly acquired knowledge of the site, he or she is now in possession of information that has been gleaned from intuitive and associative knowledge as well as objective data pertaining to the site. This knowledge then serves to assist the student in constructing a vocabulary of form and function that is then articulated and developed through the language of spatial organization and construction. Thus, the accommodation of program is no longer seen as being an objective separate and different from concept but as a part of a process that is reciprocal in nature. Through a personalized assimilation of the gathered information, he or she may determine and implement a methodology that offers individualized identity and meaning to their designs. This methodology is made coherent in the solution through the discernable implementation of the physical, physiological and psychological tools of boundary, gate, path, hearth and line.

dreaming:

In allowing the site as dreaming, the design student creates a place that is a dialogue between the didactic and the possible (program and conceptual objective). This stage of the process serves the two fold purpose of addressing the constraints and realities of program while asking, through the posing of informed questions derived from research and exploration of a specific location, what the site, and by extension of its framework, the place might be. Through the acknowledgement and understanding of the latent power of past and present occupation and use, the student is given a means of interpreting and harnessing the inherent and potential determinates that may contribute to and/or dictate the future life of the site as a definitive marker of place and/or a contributing element of the built landscape. Influenced in
this way, the actual form of the building takes shape out of the perceptions of the student, its identity assigned through their internalized experience and personalized analysis of the site and its meaning revealed through the externalized product of the student’s design solution.

Site as Seeing Diversity

Through each step of the above process, boundary, gate, path, hearth and line serve a dual purpose. First, these basic design ordering principles assist the student in the identification of the diverse quantitative characteristics of the site and in the uncovering of the diverse qualitative factors of a site in a familiar yet interpretative way. Second, these principles form the basic components of a design language that is universally recognized yet individually defined which allows the student to see not just the surface and exterior components of the built landscape but to recognize the features and characteristics that compose the identity and interiority of space making and place. In this way, the student begins to understand what physical and conceptual influences make a site unique and how application of that knowledge can determine and influence the “ideal” solution to a design problem by rooting a “place” in its own history while giving it a contemporary identity and meaning. This is crucial to the education of the architectural design student if he or she is to fully comprehend the potential of the existing environment in which their buildings will either possess and define their sites or be invisible and mute. The “ideal” embodied then, in a design that, in the words of Brian MacKay-Lyons, “reveals history of place through design celebration of history and the dreams of occupation on a particular site.”

NOTES

2 Ibid
Using a Sensory Approach for Analyzing and Representing Sense of Place

This student/faculty co-presentation session describes the rationale and outcome of an innovative studio project from Fall 2003 at an Historically Black University’s School of Architecture. The project entitled, “St. Mark’s Trail: A Sense of Place Study,” was a three-week long project in a landscape architecture studio. The project had 4 primary educational purposes. First, recognize and utilize student diversity in the studio project. Second, encourage sharing and collaboration throughout the studio. Third, teach students the tacit concept of “sense of place”. Fourth, encourage a unique sensory-driven approach to analyzing and representing sense of place. The sensory-driven approach was unique because focus was shifted from using typical architectural skills such as drawing and model-making as a means of analysis and representation to integrating the senses (sight, smell, hearing, etc.) into a creative presentation format that included music, video, slides, smells, and other elements.

The studio participants were a small but very diverse group. Participants included first year students with little formal design experience and 2 students in their final year of the professional program. Demographically, students ranged from white to black, urban backgrounds to rural upbringings, international students to American citizens. Students also ranged in age from 21 to 31. These differences posed several challenges. The instructional challenge was to find a way to validate each student’s diverse prior experiences within the project’s structure and goals. Another challenge was developing a project that was appropriate for the beginning design students as well as the more experienced students.

The project began with a brief statement outlining the goals, requirements, and evaluation of the project. The goal of the project was to employ alternative methods of representation to evoke and portray a sense of place in two different sites. The first site was St. Mark’s Trail, a former railroad now serving as a popular rails-to-trails linear park. The second site was chosen by the students and had to be both comparable and contrastable to the St. Mark’s Trail. The project required students to analyze and represent the two sites by using their senses – particularly sight, sound, touch, and smell. The final presentations were a particularly important part of the project because students were encouraged to use their imagination and creativity to engage the senses and represent the sites. Some examples from the project presentations include the use of video clips for visual effect and the use of cans of tuna and coastal plants to reflect the smells of the seashore. In one project, students created a carpet using fresh sod to demonstrate the softness of turf under foot.

The instructor, students, and outside faculty deemed the project a success for several reasons. First, by using the sensory-approach and requiring students to use their senses rather than a set of typical architectural skills beginning design students and more experienced students were able to equally contribute in the exploration and representation of the two sites. Second, the creative freedom inherent in the project presentation gave beginning design students direction without overwhelming them while the more experienced students were given the flexibility necessary for innovation. Finally, the project presentations demonstrated that cultural and ethnic differences could enrich the understanding and representation of sense of place.

Participants that attend this student/faculty co-presentation will: 1) learn about a new method for teaching the ‘sense of place’ concept, 2) understand the importance of using a non-typical approach to teaching less experienced students, and 3) hear, in the words of the students, the benefits of this project in terms of learning, diversity, and beginning design education.
Introduction

“...place varies with the intentions, personalities, and circumstances of those who are experiencing it” (Relph 1976, 57).

In the Fall of 2003, at the Florida A&M University School of Architecture four students in the Masters of Landscape Architecture program took part in a three-week long studio project entitled, St. Mark’s Trail: A Sense of Place Study. This project, now known as the place project, required students to use their senses and prior experience to explore, compare, and represent their concept of place in two separate locations. This paper examines place and describes the place project, including its rationale, participants, and outcomes as they relate to diversity and beginning design education. In the spirit of collegiality, the paper is co-authored by the studio professor and two project participants.

To understand the phenomena of sense of place and the place project it is helpful to first develop an understanding of place and its defining features. The next three sections will discuss various concepts of place and the relationship between place and the senses, experience, and memory. (See Figure 1.)

Place

Walter (1980) says, “We call locations of experience ‘place’” (162) explaining that, “Experience means perceiving, doing, thinking, and feeling.” (162). Through our daily travels, our experiences shape our perceptions of place. Our experience-based place perceptions may cause us to love or hate a place for reasons we have difficulty articulating, leaving us to remark, “I like it just because.” Anyone trying to explain the inherent qualities of a place is essentially explaining a set of qualities inherent to them. Thus, exploring a place and trying to describe its essence is a journey into our own identities, a representation of who we are. As Calvino (1985) says, “We can know nothing about what is outside us if we overlook ourselves. The universe is the mirror in which we can contemplate only what we have learned to know in ourselves” (119).

Noted geographer and writer, Yi-Fu Tuan (1975) calls place:

“... a center of meaning constructed by experience. Place is not only known through the eyes and mind but also through the more passive and direct modes of experience, which resist objectification. To know a place fully means both to understand it in an abstract way and to know it as one person knows another. At a high theoretical level, places are points in spatial system. At the opposite extreme, they are strong visceral feelings. Places are seldom known at either extreme: the one is too remote from sensory experience to be real, and the other presupposes rootedness in a locality and an emotional commitment to it that are increasingly rare. To most people in the modern world, places lie somewhere in the middle range of experience.” (151)

Through Tuan’s conception, we see that geographically, place is like a site - existing nowhere else in the world. For the place project, students chose a site that they could dramatically compare and contrast with a site given to them by their professor. As Tuan says, these specific sites symbolize both unique places and strong feelings. Most students found their site on a map easily enough, but characterizing a place would take a system more complex than that of a map – it would take an explicit examination of their own senses and experience.

Asking someone to explain the essence of place is not an easy assignment. Cultural geographer J.B. Jackson talks about reading establishment and the vernacular of a place in the 1988 video “J. B. Jackson & The Love of Everyday Places.” Jackson was able to read place clearly and call attention to signs of history and human presence in a way that many others are unable. Jackson related the story of a place’s past, as well as read into its potential path for the future. Not requiring this depth of insight, the students still gained an understanding of how to read a place for its sense of being.

The next two sections will look at place as the students did, in terms of human senses and human experience. The human senses were defined as an individual’s intimate ability to smell, see, hear, taste, and touch. The knowledge an individual derives from his or her collective memories of experience includes observations and storytelling that affect sense of place.
Sensing Place

In an effort to ease the understanding of place, students isolated the human senses; ultimately helping in two ways, first, with the organization of their explorations by making their observations more deliberate and less tacit, and second, by making the representation of place easier to organize in their final presentations.

Porteous (1985) describes the use of the senses in understanding place as more than just visual. Porteous says that “‘intimate sensing’ or ‘the appraisal of land and life at the ground level’ involves not only visual sense but also sound, smell, taste and touch, body and soul as well as mind” (250).

The students’ system for examining place began with the basic senses, which were seen not just as a starting point for appraisal, but also as tools to relay perception. In the outcome of their presentations, students consciously employed their senses to convey their perception of their sites, for example, by simulating a smell or sound. When focusing just on the senses, the students were able to re-create specific characteristics of their sites. Expressing specific thoughts and feelings through this focus guided their expression of sense of place.

Experiencing Place

Relph (1976) says that “place varies with the intentions, personalities, and circumstances of those who are experiencing it” (57). Knowing the differences between the students participating in the place project makes it unfair to expect their experience to be the same. For example, a student’s fear of alligators prevented him from going down the same paths as other students. Undoubtedly, this affected his experience of the place while at the same time; it was his experience of the place. The awareness of diversity in experiencing place was built into the project. Regardless of the shared ability to sense, students still experienced the places uniquely for themselves. However, since students worked in teams, they did have to reconcile their differences, thus opening up a dialogue explaining why they see what they see.

“Humanistic geography defines place as a center of meaning constructed by experience” (Karjalainen 2003, 1). If meaning is a construction of experience, it stands that people having similar experiences will define a place similarly, and those with different experiences will conflict. The place project asked different students to experience a place and then represent it similarly. This is a hard task and one rarely asked of students. However, it is an important exercise because in the future as a landscape architect, these designers will need to convey their design for a place to someone that may be vastly different from them. In this way, experientially empathizing with a client will help to design an appropriate place for that person.

The Place Project

The purpose of the place project was to help beginning landscape architecture students learn about place and the role of place in the landscape. In terms of educational sequence, students study place in their first semester of the master’s program because often it takes a long time to grasp intellectually the concept of place and even more time to learn how to use the concept of place in design. Thus, in order to graduate landscape architects with the ability to design places, students need an early and thorough introduction to the subject of place.

Project Participants

The place project participants were a small but very diverse group including three first year students with little formal design experience and two students in their final year of the professional program. Demographically, students ranged from white to black, urban backgrounds to rural upbringings, international students to American citizens. Students also ranged in age from 21 to 31. These differences posed several challenges. The instructional challenge was to find a way to validate each student’s diverse prior experiences within the project’s structure and goals. Another challenge was developing a project that was appropriate for the beginning design students as well as the more experienced students. (See Figure 2.)
Educational Purposes

The place project had four primary educational purposes. First, recognize and utilize student diversity in the studio project. Because the ages and backgrounds of each student ranged dramatically, validating diversity was critical not just for this project but also for building a sense of community within the graduate program. Thus, the project became a community builder. Second, encourage sharing and collaboration throughout the studio. This purpose supports the notion of building a learning community among students. In addition, this was one way for students to capitalize upon their uniqueness while finding salient ways to contribute. Third, teach students the assumed concept of place. As future landscape architects, students need to become positive place-makers. Fourth, encourage a unique sensory-driven approach to analyzing and representing sense of place. The uniqueness of the sensory-driven approach is in the shift from using typical architectural skills such as drawing and model making as a means of analysis and representation to integrating human senses and experience.

Project Structure and Requirements

The project began with a brief written statement to students outlining the goals, requirements, and evaluation of the project. The goals of the project were to employ alternative methods of representation to evoke and portray a sense of place in two different sites. In teams of two or three, students were asked to reveal the sense of place of the St. Mark’s Trail and another place of their team’s choice. The second place had to be different from the St. Mark’s Trail in some obvious way. The only restrictions regarding the student’s site selection was that their second site had to be a local site and a linear landscape.

Equally important to having students experience and investigate place was the final presentation. After experiencing each site thoroughly, students presented their findings to the class through a combination of different media. The necessity for using mixed media, rather than typical architectural modes such as drawing or model making, arose out of the realization that the presentation was more of a re-presentation of place and as such, could not be brought to life with drawings and models. In representing the place with a high degree of accuracy, sounds, smells, feelings and memory would need to be involved. Thus, the presentations were open-ended and dependent upon the student’s experiences with each place.

For students, the open-endedness of the place project was one of its most appealing aspects. The open-endedness let students build on their strengths and prior knowledge while exploring all the possibilities of representation. Appreciating the open-endedness did not eliminate the innumerable directions the students could move and the fact that these were beginning students, led to some confusion and overwhelming feelings. Thus, several requirements were assigned to help students effectively regulate their use of media as it related to their representation of place. Issued were the following requirements:

The presentation should have a minimum of 10 images that visually represent the place.
- The presentation should have a soundtrack to be used as background music or as an element that will drive the presentation.
- The presentation should have a written narrative such as a brief essay, poem, keywords, song lyric, or other appropriate form.

Project Evaluation

Holistically evaluating each team’s product- the presentation- was done due to the interrelated elements of the place project. The instructor, the students themselves, and several outside critics evaluated the presentations. Evaluation instruments were developed cooperatively between the teacher and the students. Providing evaluative feedback from a variety of people helped students clearly see how different people perceive the same place. Also “within one person the mixing of experience, emotion, memory, imagination, present situation, and intention can be so variable that he can see a particular place in several quite distinct ways” (Relph 1976, 57). Some of the questions used to evaluate the student’s presentations were:

- Does the overall presentation capture the sense of place for both sites?
- Have the two places been compared or contrasted insightfully rather than obviously?
- How does this team’s representation of place differ from your own?

Learning from the place project
There are many outcomes of the place project worth mentioning. However, it should be noted that since the project reported in this paper happened less than a year ago, many of the expected outcomes couldn’t be measured just yet. For example, answers to questions like could the place project help students become better at designing places or to what degree did the student build upon what they learned from the place project in later studios may not become evident until later.

What is clearly evident is the innovation, effort, and creativity that each student put into the project. Perhaps this is because of the high degree of ownership and responsibility each student was given in terms of selection and formatting of their project. Most educators agree that when students are given ownership of authentic projects, motivation and commitment will rise. Students seemed actively involved in the project and genuinely concerned with their own learning and performance.

In terms of diversity, the most obvious outcome is that diversity never became a negative issue or obstacle throughout the semester. In fact, the openness and respect students showed towards each other’s differences were remarkable. As the semester progressed the students showed not only respect for each other’s diversity but also a sincere desire to learn more about what makes each person who they are. Can this be contributed solely to the place project? Maybe not, because the students participating were certainly above average thinkers and kind humans. However, according to participating students, the project was unlike any other in that it encouraged the use of prior experiences and perspectives that were rooted in each student’s own identity.

From a presentation standpoint, some examples included the use of video clips for visual effect and the use of tuna in cans to reflect the smell of garbage on a derelict site. In one project, students created a carpet using fresh sod to demonstrate the softness of turf under foot. Overall the project presentations were extremely effective because the viewer was never just a passive viewer, but instead a participant, actively experiencing the place using a range of their senses. Just as the student went to the site and smelled, looked, and touched, so did those who experienced the presentations. In fact, it would be unfair to call the presentations anything other than experiences of places. (See Figure 3.)

Student Reflection

As a student involved in the place project my understanding of sense of place has greatly improved, merely from having the concept better understood, due to our explorations of actual sites with the senses in mind. With a background in fine arts and no previous formal landscape architecture courses, I was eager to understand the idea of sense of place. I felt its relevance within landscape architecture, architecture and culture. Our challenge as a group was to reproduce the felt sense of place through various mediums (imagery, sound, smell, and touch).

The level of diversity within our groups was obvious. What became clear to me through the project was how my sense of place was affected by having previously visiting both sites chosen by my group. In many ways, my memories of these places were the same when revisited. An interesting side affect of traveling with this diverse group to the different sites was my ability to create a clearer sense of self. This was particularly due to the metaphorical mirror my classmates held up for me to gain a clearer reflection of my own identity as a Floridian and nature-lover. This understanding of self came out of recognizing our diversity. Gaining that knowledge came through the observed physical discomfort of my two classmates when visiting the coastal site. A Do Not Feed the Alligators sign caused one of my classmates to become very jumpy and the awareness of the small shoreline fiddler crabs caused my other classmate to refuse to walk out on to the oyster bar.

Discovering the Sense of Place for this particular site was a bit challenging due to the different experiences shared by my classmates and myself, but we understood for the sake of the project that an agreement would have to be met. Viewing the site from different perspectives allowed a decision to be made. A view close-up, with the insects, potential alligators, and crabs was overshadowed by the all-inclusive view of the open expanse of Gulf waters, sounds of the winds through the trees, and the migrating monarch butterflies fluttering about; thus helping us jointly concluding that the dominating sense of place for this particular site was one of serenity.

In conclusion, the place project was challenging on many levels. A fine-tuning of the senses, working with a diverse group, and utilizing various media for the final presentation...
contributed to the success of the project and understanding of sense of place.

REFERENCES
Cultural Perceptions of Form, Proportion, and Scale

University environments offer a wide range of opportunities for students to gain knowledge and understanding of people from diverse cultures and backgrounds. Opportunities range from interactions with people from many different countries, to courses provided by the university that raise students’ awareness of multicultural issues within our own country. In an effort to support the multicultural mission of the university helping students understand the cultural aspects of aesthetics can be introduced into design curriculums. In the Department of Architecture and Interior Design at one Midwestern university first year design students were given a studio problem designed to support this mission. The primary goal of the project was the introduction of the design principles of proportion and scale.

Western (European) architecture has greatly influenced the design curriculum of most American schools of architecture and often what we teach about proportion is drawn from classical architecture. However, even a cursory look at the art and architecture of people groups, less influential than the ancient Greeks, shows that proportion is repeatedly used as one of the mediating patterns between unity and variety. All cultures develop proportioning systems that are aesthetically satisfying and often reflect an ecological relationship between the people group and the natural environment in which they live. The scale of architecture also reflects the relationship of a people group with their environment. When the human form is used as a measure it reveals useful information about its designers and builders, such as whether they perceive an ability to exert control over their environment, whether they are at the mercy of their environment, or whether they see themselves as one with the environment.

For this project students were required to research a single human culture and identify art, architecture, and functional artifacts within the culture that have commonality in form, proportion, and scale. The cultures ranged from the Balinese of Indonesia to the subway painters of New York City. Students used information they learned about their people group to develop a design concept that controlled the creative decisions of their design. Each student’s design was based on a proportioning system used by their people group and each design included a scale figure to show the relationship between the people group and their environment. This assignment was beneficial on many levels. First, it required students to learn about a culture other than their own. Second, it required the students to explore how human scale is related to design. Third, it required them to learn how to identify relationships between components of a design as ratios. Finally, it allowed students to develop an appreciation for the aesthetics of those from traditions and backgrounds other than their own.

abstract
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This paper introduces an assignment given to architecture and interior design students in a beginning design class. Two academic issues form the basis for this project. The first is the need for students to develop awareness, understanding, and appreciation for cultures other than their own. The second need is to introduce the design principles of proportion and scale in a way that has meaning for the students and will provide a basis for the transfer of those principles to future designs. The first objective supports the mission of most American universities; the second supports the mission of most beginning design curriculums.

University environments offer a wide range of opportunities for students to gain knowledge and understanding of people from diverse cultures and backgrounds. Opportunities range from interactions with people from many different countries to courses provided by the university that raise students’ awareness of multicultural issues within our own country. Unfortunately, few students take advantage of the opportunities to let themselves be engaged by people from other cultures. One way departments of architecture can support the multicultural mission of the university is to introduce cultural aspects of aesthetics into design curriculums. Many departments leave this task to travel programs and to those who teach architecture history, but it is also possible and desirable to let the students be engaged by different cultures in the design studio.

Within the broad category of aesthetics, the principles of proportion and scale provide windows through which one might begin to understand and appreciate the views of another culture. Western classical architecture has greatly influenced the design curriculum of most American schools of architecture and often what we teach about proportion is drawn from classical architecture. However, the art and architecture of people groups, less influential than the ancient Greeks, show that proportion is repeatedly used as one of the mediating patterns between unity and variety. All cultures develop proportioning systems that are aesthetically satisfying and often reflect an ecological relationship between the people group and the natural environment in which they live (Langhein, 2002). The scale of architecture also reflects the relationship of a people group with their environment. When the human form is used as a measure it reveals useful information about its designers and builders, such as whether they perceive an ability to exert control over their environment, whether they are at the mercy of their environment, or whether they see themselves as one with the environment.

A mid-semester project was developed to promote the multicultural mission of the university and to give students an opportunity to learn about proportion and scale. Students in one beginning design class had already been introduced to some of the elements and principles of design such as line, form, rhythm, texture, unity, and variety in a progressive sequence. This project was intended to introduce scale and proportion as two additional principles to add to their repertoire of design tools.

For this project students were required to research a single human culture that was not a part of their heritage. They were to identify art, architecture, and functional artifacts within the culture that have commonality in form, proportion, and scale. Students were asked to develop their own design based on selected designs from their people group.

Over 300,000 million indigenous people representing thousands of different cultures have been identified in this generation (Alderete, 2004)), yet at the beginning of the project not one of the American students in this midwestern architecture class was able to name a people group they were interested in researching. They were aware of broad groups such as Native Americans and Japanese, but few had ever been challenged to separate the idea of national identity from cultural subgroups. This project had the potential to open the eyes of some students to begin to understand another people group and to see the world through the cultural eyes of another.

Anticipating that most students would not be able to identify a culture to study, a list of people groups from which they might choose was made available to the students (see Figure 1). Many on the list are contemporary indigenous groups that have maintained a cultural identity into this generation, such as the Newar of Nepal, the Balinese of Indonesia, and the Huichol of Mexico. Others were urban people groups that have a unique culture with distinctive design such as the subway painters of New York and the Pachinko players of Japan. There were others on the list, such as the ancient inhabitants of the Indus Valley, that represent cultures that have left important information about the culture in the form of artifacts, but are no longer in existence.

Students were instructed to pay particular attention to the relationship of artistic or architectural objects and the natural environment to identify the ecological relationship between the people group and the environment in which they live. Students looked for connections to the environment in the material and form of the architecture and in artifacts. They were also instructed to pay attention to the scale of the architecture of their people group and draw conclusions about the culture’s relationship to the environment. The students were instructed that the concept and the design solution should remain abstract. The design solution could be simple or complex, organic or geometric, but the concept would be the governing factor in the completed form of the design solution.

Description of Project

The design program required the students to identify at least five examples of design (art, architecture, and functional artifacts), executed over several centuries, that had commonality in form, proportion and scale. These examples would serve as the inspiration for their designs. The students were told to be able to defend their conclusions about the design trends within the culture they chose. They were to develop a design concept that would control the creative decisions of their design. The concept will give intellectual order and meaning to the solution.

The physical requirements of the process included:

-A composition fixed on a base that defined an 8” x 8” x 8” cube.

**NOT WHITE: Diversity in Beginning Design Education**
A composition, with a minimum of two forms that reflected the form and proportioning system of the chosen culture. The forms were to define mass and provide a mass/void balance within the composition.

-A scale figure of a human form was to be placed in the composition to show the symbolic relationship between the design and intent of architecture and design in the culture.

-A graphic rendering of a reversal of mass and void (i.e., space becomes mass and mass becomes space).

The format required that the figure be entirely black and white. If the base was black the forms would be white. If the base was white, the forms would be black. The forms were all to be constructed of one material. Possibilities included museum board, plaster, wood and paper mache. The finished model was to be mounted to a 12” square, white or black, rigid base.

The assignment also included a project report in the form of a spiral bound booklet and a graphic rendering of a reversal of mass and void. The project report provided information about the people group with pictorial examples of their architecture, art, and functional artifacts that influenced their design. They also provided a summary of their research and recorded the design process and final solution.

Results

This assignment was beneficial on many levels. First, it required students to learn about a culture other than their own. It is difficult to weigh the actual impact of this type of project on students. There is anecdotal evidence that the students were intrigued by the culture they studied. They each know something more about another culture than they did before this project. Each student used the art and architecture of a people group to draw conclusions about how they live, and to understand their relationship with their environment. Many students focused on the physical environment, but several students also drew conclusions about the social and political situations of the people group they studied. A student who studied the Azeri people of Azerbaijan noticed the prevalence of arches with a 1:3 ratio of width to height. This observation might have provided enough inspiration for an adequate design. In his research, however, this student discovered that the Azeri are a unique people group who had been bound to Russia as a part of the Soviet Union. With the fall of communism, this group was able to reaffirm some of its cultural identity. The resulting design was inspired, not only by the forms and proportions of the architecture of the Azeri, but also by the political situation of the people of Azerbaijan (see Figure 2).

This project also required the students to explore how human scale is related to design. The introduction to this project included a description of a European cathedral with immense scale in relation to the human frame. The students were asked to speculate on what the scale of such a structure said about those who built it. They speculated that the cathedral could be a tribute to the greatness of the God for whom it was built. The small scale of the human in relation to the building shows human dependence on the mercy of a sovereign and powerful God. On the other hand, it shows incredible design and engineering skill to be able to complete such an immense structure. It could represent the control humans have to move and manipulate the natural environment.

One student noticed that the defining ratio of the culture he studied was 1:1. Almost all of the artifacts of the Sami of northern Europe were based on a square or circle, and supported the reliance of this nomadic people group with their natural environment. He also noticed that human, animal, and natural elements were all symbolized at the same size in the art of his people group. He drew the conclusion that the Sami see themselves at one with the earth; not victims or conquerors, but partners. The student noted the repetition of human figures and reindeer in the artwork of the Sami and used that as the inspiration for his abstract design (see Figure 3).

Another benefit of the Cultural project was that it required students to learn how to identify relationships between components of a design as ratios. This project was presented as an introduction to proportion theory, and an attempt was made to keep it very simple for the beginning design students (and their professor). It was not expected that at the end of the project students would completely grasp the complexities of proportional theories. The goal was to help the students discover simple, intelligible ratios (Schofield, 1958). In previous years when the curriculum introduced proportion, students were required to research proportioning systems (e.g. geometric, arithmetic, golden section) and create a design based
on one of these systems. Frequently, students would choose the Fibonacci series and try to develop a design based on the measurements 1,2,3,5,8, etc., without acknowledging the ratio relationship of one number to another. In the Cultural project, students had to examine art and architecture with their rulers. They measured relating lines and forms and formed ratios, and were surprised to find that ratios were consistent in the relationships they were observing. A variety of proportions were discovered. Several students observed that ratios of 1:2 in the art and architecture of their people group. Others identified a repeated relationship of 1:3. Several students observed the repetitive ratio in their culture was 1:1.6182. Finding the Golden Mean on their own and seeing the beauty of that ratio in the art and architecture of their people group was much more meaningful than being told about it. Having students “discover” certain proportions on their own strengthened their understanding of how they can be used in design. Rather than the instructor telling them proportion is an important principle of design, they were able to acknowledge it for themselves.

Finally, this project allowed students to develop an appreciation for the aesthetics of those from traditions and backgrounds other than their own. There was a broad range of people groups studies. Many of the groups, like the Hopi and the Inuit are indigenous groups who maintain a close connection with the natural environment. Many of their artifacts are functional, yet adorned with images of their environment such as birds, fish and life-generating forms. The students were challenged to consider why a culture with so few technological benefits would take the time to make products necessary to daily life beautiful. On the opposite end of the spectrum were urban groups such as the Subway Painters or “Writers” in New York City. This people group also showed a clear connection with their environment. The student who researched this group found that the writers are expressing their creativity with aerosol and sending messages about their environment throughout the city on the surface trains. Kids from the poorest neighborhoods in New York are thinking about balance and rhythm, and gestalt as they produce their art (see Figure 4) The creation of visually satisfying images is important to all cultures.

For this project students were required to research a single human culture and identify art, architecture, and functional artifacts within the culture that have commonality in form, proportion, and scale. Students used information they learned about their people group to develop a design concept that controlled the creative decisions of their design. Each student’s design was based on a proportioning system used by their people group and each design included a scale figure to show the relationship between the people group and their environment. This assignment was beneficial on many levels. First, it required students to learn about a culture other than their own. Second, it required the students to explore how human scale is related to design. Third, it required them to learn how to identify relationships between components of a design as ratios. Finally, it allowed students to develop an appreciation for the aesthetics of those from traditions and backgrounds other than their own.

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Figure 4 - Subway Painters of New York City.
Preparing Students to See: the Role of Vocabulary in Teaching Diversity in Basic Design

In the late fifties Jerome Bruner demonstrated that seeing was a function of the readiness of information organized through experience in language. We see what we are prepared to see. Our students see what we prepare them to see. Unfortunately, many of our students graduate blind to the diversity in their social and physical environments.

Color, for example, is frequently taught as if there is clear and compelling evidence that using reds makes a space exciting and using blues makes a space calming. These approaches largely ignore ever-expanding research on perception. What we do know is responses to color frequently vary according to social and cultural roles. An optimum education for beginning students requires that we teach them vocabularies that incorporate current research in perception, society and culture.

In 1998 house color became a statement about class and heritage in Southgate, a predominately Mexican-American community south of Los Angeles. Twenty-five years ago Southgate was an Anglo community. As the Mexican-American population increased so did the intensity of house color: bubble gum, hot lipstick, daiquiri lime, bright fuchsia, pumpkin, full-body lavender. Color preferences became a political issue. Color ordinances eliminating Day-Glo colors were proposed. Provocative colors were out and taupe and beige were in. Associating the color-rich Mexican palette with poverty and downward spiraling property values, second and third generation Mexican-Americans were the most vocal supporters of the color ordinance. How do we teach beginning students to recognize and use an array of value positions in making design decisions?

This paper presents beginning exercises and active learning strategies that teach students inclusive vocabularies, preparing them to see variations in responses to the environments they create.
An optimum education for beginning students requires that we teach them vocabularies that incorporate current research in perception, society and culture.

In the late fifties Jerome Bruner (1957) demonstrated that seeing was a function of the readiness of information organized through experience in language. We see what we are prepared to see. Our students see what we prepare them to see. Unfortunately many of our students graduate blind to the diversity in their social and physical environments. Environmental color, for example, is frequently taught as if there is clear and compelling evidence that using red makes a space exciting and using blue makes a space calming. These approaches largely ignore the ever-expanding research on color perception. What we do know is that color meaning and preference frequently vary according to social and cultural roles.

In 1998 house color became a statement about class and heritage in Southgate, a predominately Mexican-American community south of Los Angeles (Labi, 1998). Twenty years ago Southgate was an Anglo community. As the Mexican-American population increased so did the intensity of house color: bubble gum, hot lipstick, daiguir lime, bright fuchsia, pumpkin, and full-body lavender. Color preferences became a political issue. Color ordinances eliminating Day-Glo colors were proposed. Provocative colors were out and taupe and beige were in. Associating the color rich Mexican palette with poverty and downward spiraling property values, second and third generation Mexican-Americans were the most vocal supporters of the color ordinance.

Teaching students to value and use information on diversity in design-decision making requires they be taught to see diversity in the world around them. Students in architecture frequently begin their education learning about the received culture of a predominately middle to upper-middle class group of white males. Students learn the “basic principles” underlying the architecture of the masters. They are frequently taught these basic principles (form, color, etc.) as laws, not unlike beginning students in physics are taught the laws of thermodynamics.

This instructional strategy insures students see the world through a carefully circumscribed template. Students often leave beginning programs believing that their peers and future clients see identical worlds, sometimes with disastrous results. C. A. Winkelhake and his colleagues at the University of Illinois at Champaign-Urbana designed a set of beginning exercises that can be used to build a foundation for teaching diversity. These exercises introduce students to a series of conceptual frameworks and supporting vocabularies that require students to identify and use the value positions of others in design-decision making.

In the first exercise in the series beginning design students are introduced to the image as a relationship between an object and a perceiver. Students begin with a figure-ground exercise not unlike the figure-ground exercises that we were given as students or that we may use as teachers. There is, however, one critical difference. Not only are students taught to see and manipulate both foreground and background they are also taught to see diversity in the image worlds they and their peers inhabit.

**EXERCISE 1:** TOTAL (object perceiver)
A twodimensional (x, y) area and a group of perceivers

**OBJECTIVE:** You must be able to make a 2D object (area) which exhibits a total figure-ground alternation. When your instructor and classmates look at your finished surface they should see “ground” as figure as well as “figure” as figure. The total involvement of both will verify the fact that you have a complete 2D object. Also, the quality of your workmanship is important. Your instructor will evaluate your craft. Accordingly, the two criteria of acceptable performance in the first part of the first exercise are (1) FIGUREGROUND ALTERNATION and (2) QUALITY OF WORKMANSHIP.

**PROCEDURE:** Use the three initials of your name to form a total figure. What is left overgroundmust also form a total figure. Notation: Mount your figure on a 10” x 10” piece of illustration board. Remember that the initial figure must be made up from the initials of your name. Use each initial only once. Experiment with different kinds of glue on scrap material to find the one that gives you the best results.

Put all the rough sketches you develop throughout this exercise in your sketchbook-journal and briefly comment on each one of them. These sketches and your verbal descriptions will serve as a record of your progress in the development of your design.

Although clearly critical to the exercise, many students choose to disregard “a group of perceivers,” and “classmates;” statements that require them to use their peers as a perceiver group. The reader will not find this behavior particularly surprising, because we know students in a majority of educational settings are focused on the teacher as the audience for their work. There are always a few students who immediately recognize the multiple audiences for the problem they’ve been given and begin engaging students around them in an attempt to evaluate alternative solution simulations as well as full-scale solutions to the exercise. Students are given one in-class period to generate alternative solutions. Final solutions are evaluated the following period.

Requiring students to begin with the three initials of their name insures that students develop individual solutions, documenting their ideas as they develop. The Esheresque transformation from initials to final figure-ground (FG) occasionally includes responses to suggestions from classmates as well as their instructor. The processes of sketching and notetaking immediately enable the instructor to teach simulation as a useful conceptual category. During exercise evaluation instructors are presented with opportunities to teach
students about relationships between direct and indirect perception. In the process of evaluation students discover, many for the first time, that their peers’ responses to their FGs in sketch form are sometimes different than their peers’ responses to the full-scale objects they create. The important lesson here is that judgments in response to object simulations are not necessarily equivalent to judgments made in response to the objects themselves.

Teaching students to see variations in vocabulary and vocabulary meanings as they move from one sub-cultural group to another can easily be made a product of student-teacher exchanges during evaluation. For example, students attempting to get feedback from their peers frequently experience discourse problems. Their successful and unsuccessful attempts to elicit “useful” information often result in the recognition that many of their peers use the English language in unexpected ways. The language and the visual notations that they and their peers use are not always as effective in communicating design intent as they might have hoped.

As students begin presenting their FGs the process of building the students’ conceptual vocabularies begins. Students stand before the class with their work. Each student in turn takes her FG to the front of the class. Students decide where to place their FG: to pin or tape it to the wall, to hold it, to place it on the chalk rail, etc. As each student presents her FG the other students respond to the question: “Do you see total figure-ground alternation?” Teaching context in this setting is relatively straightforward. Students immediately see that the physical visual context for their FG may deserve more attention than they at first imagined. Is their FG best presented against a dark ground, a light ground or a middle value ground? It is now clear to them that it makes a difference.

Meaning is added to their vocabulary as their peers begin presenting their ideas verbally. One of the first three students to present will invariably describe what she sees in her FG. They learn immediately that giving meaning to shapes can in some instances improve the chance that their peers will see alternation in their FG. In a few cases, however, they learn to their surprise that orally presenting the meanings they see in their FG carries risk. They discover associating meaning with shape can forever fix a shape as either figure or ground. Meaning and context are now a part of their conceptual vocabulary. Students begin to use “meaning” to think about the image: painted, sculpted or built. They learn that their FGs are more likely to work if both figure and ground are either meaningful or meaningless. They are now poised to see meaning as a context for what they and others see. Viewing position is added to their vocabulary as they discover that distance and angle of view influence the perception of their FG. The ideas of worldview and point-of-view now have concrete referents in the students’ experience. The conceptual categories of object, perceiver, image, context, meaning, viewing position and simulation are ready for use.

Exploring diversity in worldview has operational significance when they read Nayda Labi’s article on the politics of color in Southgate, California. Students are prepared to use their developing conceptual vocabulary to talk and think about color preference and color meaning. Asked to read van Gogh’s letters to Gauguin and his brother Theo, students are prepared to consider explanations for alternative readings of the expressive significance of van Gogh’s painting of his bedroom at Arles. Through his letters we know what the painting meant to him. To Gauguin he writes:

“Still for the decoration (of my house) I have done… my bedroom with its furniture of whitewood which you know. Well, it amused me enormously to do that interior with nothing in it, with a simplicity a la Seurat: with flat paint but coarsely put on, the neat pigment, the walls a pale violet…. I wanted to express an absolute calm with these very different tones, you see, where there is no white except in the mirror with its black frame…” (Gombrich, 1972)

To his brother Theo he says:

“My eyes are still strained, but at last I have a new idea in my head… This time it is quite simply my bedroom. Color alone must carry it off, by imparting through simplification a grander style to things it should be suggestive of rest and sleep in general. In other words, the sight of the picture should rest the head, or rather the imagination… The walls are pale violet, the floor tiles red… the doors are green, that is all. There is nothing in the room with the shutters closed. The squareness of the furniture should express the undisturbed rest…. The shadows and the modeling are suppressed, it is colored with flat tints like the Japanese
prints.” (Gombrich, 1972)

We may be excused for not sharing the absolute calm he envisioned, but our students are ready to see and begin to understand the ways in which audience response may vary across perceiver groups. Unlike the designers of the pictorial plaque on the Pioneer spacecraft, we have access to developing knowledge of the sentient beings we design for. Studies on color since the turn of the last century have shown us that there is a good deal of variability in color preference and meaning across cultures, sub-cultural groups, across both age and gender. Practically speaking when we want to know about the meaning of color for an individual we cannot predict meaning without asking that individual. In Southgate the traditional Mexican color palette is a statement about status. We know because Nayda Labi asked.

“Blue is calming,” well that depends. Experimental studies since the early thirties tell us that meanings associated with blue are a semantic tangle. On the one hand blue has been variously describes in studies as “tender, soothing, cool, and passive, secure and comfortable, a color which inspires calm and confidence, and harmony, a sense of control and responsibility,” (Kreitler and Kreitler, 1972) a color with qualities of spirituality and sublimity, but may “also have a less attractive connotation of moralism and emotional repression, reflected in … the ‘blue laws of the American puritans… Similarly the restraint and coolness of blue may not only be soothing but also hard, cold and calmly hostile.” (Kreitler and Kreitler, 1972).

S. Kreitler (1965) and S. Kreitler and H. Kreitler (1968) showed that the “described meanings of colors include at least five types or dimensions of meaning. These are meanings in terms of bodily expression, e.g., blue constricts bodily movements; in terms of sensations and feelings, e.g., blue is a cold color; in terms of general abstract interpretations, e.g., blue denotes spirituality; in terms of metaphors based on resemblance in the characteristic of the color and the meaning, e.g., blue is like the world beyond; and finally, meaning expressed in terms of what could be called true symbols, whereby the color comes to represent a contrast and its solution, e.g., blue denotes the fusion of heavenly peace and the destructive fire of lightning.”

Clearly the meaning of blue varies across a number of dimensions. If we expect our students to create inclusive environments for others we may find it useful to teach them inclusive conceptual vocabularies preparing the foundation for them to see diversity. Our students must be taught to see diversity before they are asked to create environments that respond to it.

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Understanding Diversity through Biographical Landscapes

Diversity as expressed through differences in identities, values, and worldviews is embedded in the everyday environment, to be recognized, recollected, and understood. The everyday landscapes—places and spaces, inhabited and remembered—reflect a multitude of meanings and perspectives that constitute the various manifestations of diversity. This paper examines a beginning design exercise that uses landscapes and personal recollection as a medium for expressions and understanding of diversity in space and culture. In this short introductory studio exercise, students are asked to create a three-dimensional collage of landscape features that embody and represent the life experiences of three generations of their families. Based on observation of selected projects from a span of three studios, the paper examines the following characteristics and utilities of the design exercise: how the exercise draws from the students’ own knowledge and reflection of everyday spatial experience to bridge cultural issues with understanding and making of space; how the lessons and understanding of diversity emerges in a collective examination of the projects; and how the exercise allows the concept of diversity to transcend the traditional categories of race and class and essentialist notion of culture, to embrace a broader and more nuanced understanding of social and spatial phenomena. Through a comparative and cross-generational framework, the paper also examines how the exercise allows one to recognize the dynamic and changing nature of diversity as manifest in the continuing spatial and social transformation in the everyday environment. It further looks at how landscapes can serve as vehicles for cultural expressions. Through these examinations, it addresses the pedagogical mechanisms and complexity in injecting the issue of diversity in beginning design.
Introduction

In recent years, issues of diversity and multiculturalism have begun to receive broader attention in design and planning discourses. Sandercock and Qadeer both examine the implications of multiculturalism on the practice of urban planning.\(^1\) Umemoto and de Souza Briggs further articulate the challenges facing practitioners and institutions in addressing cultural differences and nuances in participatory planning.\(^2\) In the context of ethnic neighborhoods, Hou and Tanner argue that the manifestation and negotiation of the competing identities and interests in the multicultural ethnic neighborhoods presents a challenging task for designers, planners, activists and community leaders.\(^3\) In the field of architecture, the discussion of diversity has focused particularly on the demographic makeup of faculty and students and the differences in perspectives and perceptions among students of different gender and ethnicities toward experiences in architectural education.\(^4\) In addition, the discussion has also identified the inadequacy of design theories in addressing gender and ethnic issues. For example, Anthony and Grant argue that although interest in gender and multicultural issues is on the rise, architecture theories have traditionally been treated as “raceless” or “genderless.”\(^5\) The lack of diverse perspectives is reflected in the continued dominance of a Eurocentric emphasis in design education, as echoed by various authors in an edited volume, *Voices in Architectural Education*.\(^6\)

Despite the growing attention on diversity in design education, relatively less has been reported on actual studio projects and assignments that address the issue of diversity.\(^7\) While the experiences of design studio has been a focus of attention, little was found in literature that reported on innovative studio design pedagogy especially in the context of beginning design as related to diversity. In addition, while the focus on traditional categories of gender and ethnicity is critical and imperative in addressing the inadequacy of design education and theories, the emphasis on gender and ethnicity tends to limit the discussion to the question of demographics and perceptions of different demographic groups. To examine beyond the traditional categories of gender and ethnicity, this paper looks at diversity as a wide range of differences in identities, values, and worldviews, and as embedded in the everyday environment. To explore the pedagogy of multicultural understanding in beginning design, this paper examines a beginning design exercise and its use of landscapes and personal recollection as a medium for expressions and understanding of diversity in space and culture. Based on observation of selected projects from a span of three studios, the paper examines the following characteristics and utilities of the design exercise: how the exercise draws from the students’ own knowledge and reflection of everyday spatial experience to bridge cultural issues with understanding and making of space; how the lessons and understanding of diversity emerges in a collective examination of the projects; and how the exercise allows the concept of diversity to transcend the traditional categories of race and class and essentialist notion of culture, to embrace a broader and more nuanced understanding of social and spatial phenomena. Through these examinations, the paper addresses the pedagogical mechanisms and complexity in injecting the issue of diversity in beginning design.

Biographical Landscapes

‘Biographical Landscapes’ is one of a series of studio exercises in the ‘Introduction to Landscape Architecture’ studio at University of Washington. The purpose of the studio is to introduce students to the foundational knowledge and process of landscape architecture design. The course is open to non-majors who are interested in entering the program, as well as students from Architecture and Urban Planning who take it as an elective. Based originally on the ‘Westward Moving House’ assignment in Introduction to Environmental Design at University of California, Berkeley, the assignment asks the students to create a three-dimensional collage of landscape features that embody and represent the life experiences of three generations of their families.\(^8\) The purpose of the assignment was for the students to connect their personal experiences and observations to an understanding of design and making of the built environment. It was designed to specifically connect understandings of changes in the physical environment to broader social, economic, and political transformation in the society. At the end of the weeklong exercise, students were required to make a verbal presentation. Each presentation was followed by questions and comments as well as discussion among the students and faculty.

The studio class has a typical enrollment of 25-35 students. In the last three years, it was co-taught first by two Asian-American male faculty members and then by an Asian...
American male faculty and a Caucasian female faculty, both including the author. Offered in three consecutive studios thus far, the assignment has received positive feedbacks from the students based on anonymous course evaluations. Similar to the outcomes of the similar class assignment at Berkeley, the exercise has proven to be useful in addressing the multiplicity of values, experience, identities, and social and spatial understanding in design at the introductory level. In the following, the paper uses a series of selected student projects to illustrate the range of work and to examine the outcomes and utilities of the design exercise.

**Behind Urbanization** (See Figure 1.)

Throughout the three generations of my family, which mainly lived in Seoul, Korea, Korea has gone through very dramatic historical events which resulted in fundamental socioeconomic changes. It was hard not to broaden the scope of this project to a national level because the dramatic events of recent Korean history was so fundamental to the change of nearly every aspect of life in an urban Korean environment.

A common theme among many students’ projects has been the magnitude of environmental change and urbanization. This project illustrated the process of urban development and transformation in South Korea where the student grew up as a child. Rather than simply depicting the physical change from a traditional city to modern metropolis, the student focused on the underlying historic events in which the process occurred. The model was divided into three segments. The first segment represents how traditional urban space was displaced by a westernized colonial architecture under Japanese occupation. The second segment represents the destruction of Seoul landscape during the Korean War and the ground for reconstruction. The last segment shows the verticality of contemporary urban landscape in Seoul where companies were competing to build the world’s tallest building. The project served as a testimony of Korea’s historic encounters with foreign forces, war, post-War development, and the influence of social and political forces on individual experiences and memories.

**Memory Overlays** (See Figure 2.)

My grandmother was born on the island of Taiwan. About two thirds of Taiwan is covered by mountains, and my grandmother grew up nestled in a mountainous region in Northern Taiwan. According to my mother, my grandmother’s family had an orange grove and grew some other vegetables… My parents moved to America to study and I was born shortly after. My landscape included many of the same elements from the previous generations, mountains, water, and plenty of plants… While making this project, I realized that all three generations overlapped and that my grandmother experienced things from all three time periods and her lifestyle changed with the times.

Unlike the Korean American student who chose to focus on his home country, this Taiwanese American student chose to focus on the landscapes of different locations that are all part of the family’s history. Instead of depicting a linear progression of events, the student chose layering, transparency, and juxtaposition as techniques to reflect on the overlapping of generational experiences. The model conveys how her family continues to carry memories from home and that the present is inseparable from the past. By juxtaposing and overlaying the images of rice field, orchard, and mountains with modern amenities and features of suburban American landscape, the project underscored the translocal experiences and multiple place identities of recent immigrants.

**Suitcase/Shadow Box** (See Figures 3 and 4.)

Three generations of my family span a century in time and 6000 miles in space. Each generation has emerged from a distinct setting and move 3000 miles west starting with my grandmother’s flight from poverty in Ireland to the urban sprawl of New Jersey to my parent’s flight from the congestion of the East coast to the wilds of Washington… The representation of the contrasting landscapes from which each generation of my family emerged is depicted by a shadow box. The exterior of the box was constructed to represent a suitcase as each generation of my family has moved from place to place.

Rather than focusing on the overlapping of generational experiences, this project
emphasized the distinct characters of places in which each generation of the student’s family has lived. Further, the student used the metaphor and form of a suitcase to highlight the constant migration of the family. The project relied on multiple ways of articulating the different stages of the family’s migration and the distinct urban and environmental contexts. A pullout map of Irish farms represents the earlier life of the grandmother. A windshield view of freeway traffic symbolized the new mobility of the second generation and the context of industrialization and urbanization. Finally, an opening in the box that allowed one to reach in and touch the rocks inside symbolized the proximity of nature in the Northwest where the family currently lives. The tactile qualities of the model and its complex symbolism unfold the multiple dimensions of the family’s migration and the transformation of individual lives in relation to landscapes.

**Puzzle Garden** (See Figure 5.)

> When I was first presented with this assignment, I was doubtful that I would find any similarities between the landscapes of three very different generations of my family. First of all, my grandmother’s garden was in Tokyo, Japan and my garden is in the United States… However, as I brainstormed the qualities of the three landscapes, I found that there were many interesting commonalities. For this reason, I chose to format my collage as one garden, with three separate parts because while the gardens are very different, they also have many similarities that link them together.

Instead of focusing only on the differences between generations and places, this student was compelled by a discovery of commonalities that connect the gardens of different generations. In the model, the gardens can be displayed independently or as a whole. The similarities and differences are found in the use of similar colors despite different plant palettes. Privacy is highlighted in all gardens through the use of high walls, fences, and hedges. All gardens are also highly controlled by design. Finally, all of the gardens were taken care by female members of the households that represented another common thread through the difference generations. The project highlighted both the continuity and transformation of culture through generations. It probed into the connections of cultural practice and everyday lives of families.

**Garden of Threads** (See Figure 6.)

> …Vaneta needed only her family and a garden to call a room a home. She canned what she could, and always had berries sugared for after supper… Don moved as far away from the Midwest as the air force would take him… The stepping stones home were kept shiny with the travel-privileges a career with the airline afford… The path I have followed is my heart’s—well lit by my parent’s support, and my grandparent’s example and continued struggle. I realize the opportunities my father’s lifestyle has afforded me, but feel mine more reflects my grandparents’ simplicity.

Similar to the previous project, this student also used garden as the physical and symbolic space of connection between different generations of her family. However, instead of individually representing the different gardens, the student chose to create one garden/object with elements that represent traces and reminders from each generation. Instead of clearly demarcating the different generations, the model allowed one to ponder and wander through a collection of objects to reconstruct memories and connections. The model does not highlight any particular storyline. Instead, it underscored the complexity of movement, struggles, differences, and affinity between the generations.

**Windows on the Land** (See Figure 7.)

> From generation to generation, the landscapes, which have been home to my family, have varied in climate and population density. However, the landscapes themselves have changed only minutely in comparison to how the different generations have viewed and related to them. This piece suggests that, the landscape itself changes little between generation, but the way each generation see and relates to the landscape is what changes. Each generation views the world through its own set of values, experiences, and preconceptions, or its own pane of glass.

Unlike many others whose families have experienced dramatic environmental and physical changes through generations, this student responded with how different generations of his family have lived on similar agricultural and rural environment, but have viewed and interacted with the environment in different ways. The student chose various organic materials to represent the landscape, and an apparatus of lenses and glasses to represent the different views toward the landscape. The different tones of glass further underscored the differences in the constructs of and connections to the land. Though the concept is simple and direct, the different elements in the model form a complex dialogue between physical landscape and differences in human perceptions and cultural values. It underscored the diversity of values even within the same environment.

**Discussion**

The six selected projects represent a broad and diverse range of student responses to the studio assignment. As evident above, the assignment produces a multitude of outcomes that are strongly connected to the understanding of diversity in design and design education. The following is a discussion of the specific outcomes.

**De-essentialization**—First, the personal experiences and family histories allow the discussion of cultural and environmental differences to be grounded in actual experiences and encounters. The understanding of diversity and difference emerged from both a comparison between the students’ projects and the students’ own individual reflections. The grounded reflection and understanding helps to de-essentialize the traditional categories of race, gender, and ethnicity, and immigrants vs. non-immigrants. The process of de-essentialization exposed students to the complexity and richness of social and cultural experiences. It embraces a broader and
more nuanced understanding of diversity in the everyday environment.

**Dynamic Diversity** – The intergenerational framework of the assignment helps to highlight the dynamic nature of social and environmental changes that are integral to an understanding of diversity in society. Overlapping of generational experiences in particular reinforces an understanding of the processes of change and continuity. Projects including ‘Puzzle Garden’ and ‘Memory Overlays’ underscored the overlapping and hybridized conditions that are important in generating a more nuanced and dynamic understanding of diversity.

**Space and Culture** – The personal stories as presented in the projects provide grounds for understanding cultural difference, transformation, and particularly the relationship between social and spatial changes. Projects such as ‘Behind Urbanization’ and ‘Suitcase/Shadow Box’ provide useful examples to discuss the connection between social and environmental changes and to examine the broader forces and individual choices that influence the making of space and everyday environment.

**Landscape** – The selected projects have demonstrated the power of landscape as a medium for understanding social and environmental changes. Through narratives, memories, and physical changes, landscapes embody individuals’ relationships with the environment and the locality. The range of student projects helps to highlight diverse variations of such relationships.

**Design with Diversity** – In addition to generating greater understandings of diversity, the assignment provides an opportunity for the students to engage in experimentation in expression and interpretation of diversity through design. The selected projects show a wide range of strategies that address specific approaches to interpretations and expressions, and provide opportunities for discussion in the studio. They allow the issues of diversity to be addressed in the making of objects and space.

**Differences and Commonalities** – In de-essentializing traditional cultural and ethnic categories and boundaries, the projects also allow students to examine both commonalities and differences in their own experiences. In addition to identifying diversity and differences, it allowed them to identify common threads despite the apparent differences. Projects such as ‘Puzzle Garden’ and ‘Memory Overlays’ are exemplary in this respect. The collection of projects also allow for comparison across projects to recognize linkages and parallels among the different projects.

**Questions of Pedagogy** – The outcomes of the assignment raise important questions concerning the learning of diversity in design education. How do we teach diversity without necessarily imposing our values on the students? How do we ground our teaching in the everyday experience that students can understand and fully appreciate? The outcomes of the assignment show that rather than as knowledge to be imparted, understanding of diversity is negotiated and actively constructed in studios and classrooms by engaging the students through reflections of their own background and experiences.

**Variables for Replication** – Can the ‘Biographical Landscape’ assignment be replicated in other contexts? What are the variables for its effectiveness? Compared to the program at Berkeley where a similar assignment was first offered, the student body at University of Washington is less diverse in terms of race and ethnicity. However, the condition did not impede the effectiveness of the assignment in addressing awareness and understanding of diversity in design and the everyday environment. Nevertheless, the degree of ethnic diversity in the student body does influence the content of discussion as it has a direct influence on the substance of student projects. Besides the students’ background, the faculty and instructors’ input and facilitation in the class discussion can also become critical, particularly in linking individual experiences and stories to broader design and socio-political discourses and also in making appropriate comparisons across different projects.

**Reflection: Diversity and Everyday Landscape**

The everyday landscapes—places and spaces, inhabited and remembered—contain a wealth of meanings and perspectives that constitute the various manifestations of diversity. The diversity in the environment and everyday life are embedded in family histories and personal experiences to be recognized, recollected, and understood. As evident in the students’ projects shown here, landscapes provide a powerful medium to examine diversity as embedded in the everyday life and environment, including differences in identities, values, cultures, and worldviews. As the demographic makeup of the society and educational institutions
continue to shift and become ever more diversified, the students’ own background and experience can provide a wealth of materials for examination, comparison, and learning. As the society and culture continue to undergo changes, the collection of projects that reflects the students’ own experiences and encounters provide a fertile ground from which reciprocal and dynamic understanding of diversity can begin to emerge. As a beginning design exercise, the outcomes of the assignment provide a foundation in which social issues, environmental processes, and design practice can be reconnected and re-examined. In an assignment such as the ‘Biographical Landscape,’ diversity can become both a starting point and an agenda for design education.

NOTES

REFERENCES
Transforming the Datum: The Readymade Context in the First Year Summer Studio

“Transformative learning involves an enhanced level of awareness of the context of one’s beliefs and feelings, a critique of their assumptions and particularly premises, an assessment of alternative perspectives...and a desire to fit the new perspective into the broader context of one’s life.”

Transformative Learning theory contends that the development of critical thinking occurs through self-reflection—the ability to compare new ideas and experiences to one’s preceding values, experiences, and assumptions, and the capacity to evaluate and alter (transform) these assumptions. A diverse recognition and assessment—rather than rejection—of unfamiliar cultural and physical contexts is fostered. Transformative Learning views difference—diversity—not as a condition of binary oppositions or prodigious eclecticism; diversity and transformation are, instead, qualities of subtle discrepancies between similarities. Transmutational processes, such as transposition and iteration, do not always produce highly varied conditions. Iteration is an act of repetition and approximation, transposition an act of relocation. These are not form-altering transmutations, but adaptations of context and meaning.

This paper proposes an analogous association between first year architectural processes of learning and the re-contextualized “Readymade” objects of Marcel Duchamp deployed in the 1910’s. The pedagogy is founded on the following premise: contextual response occurs through subtle conversions (primarily transposition and re-iteration). The material reality for this contextual transformation is a 5’x10’x2’ plywood site referred to as the Datum. The Datum, for the student, is a figurative and physical place in which to question one’s preconceptions (and emerging conceptions) of architectural design. The Datum is the boundary between preceding values and the actualities of the architect’s education; it is also a bound physical context in which design occurs through manipulations of that context.

NOTES

abstract
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John M Humphries, visiting assistant Professor of Architecture at the University of Arkansas, received his education from The University of Texas at Arlington. Mr. Humphries received the Faculty Citation of Merit, three AIA/Dallas Drawing Awards, The Arch Swank Fellowship for the excellence in the craft of architecture, and the AIA Henry Adams Medal. Teaching responsibilities include Architectural Design Studio and Material Manipulations, a seminar, engaging manufacturing and digital representation. Research interests currently include developing manufacturing processes that directly connect virtual visualization models to tangible constructs, and computation based design methods. Creative work involves designing flash interfaces, digital animation techniques, and the installation of full-scale prototype installations as an exploration of space. The mechanism for research is through open architecture design competitions and collaborations at other academic institutions.

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The task of the architectural project is to reveal, through transformation...the essence of the surrounding context.¹
No new architecture can arise without modifying what already exists...²

In beginning design education, the first semester architecture student is often considered “unacquainted” with the architectural design environment, a neophyte to the education and profession of architecture. However, after 13 or more years of formal education and more than 17 years of life experience, the first semester design student holds many conceptions of the architectural world: preconceptions and prejudices, as well as factual knowledge and discernment. These assumptions (whether factually-based or opinion-laden) are developed through visceral experiences, narrative histories, media representations, and prior education. Congruently, students’ recognition of their immediate cultural and physical contexts is elevated, though the boundary of that awareness is often at arm’s length. Students are intimately aware of the immediate environment as it affects them. However, students have difficulty assessing a more comprehensive and complex social and physical context. Thus, much of the architectural education resides in questioning the extended context, in extending the boundary of awareness.

Marcel Duchamp, by deploying his “Readymade” works of the 1910’s, called into question both the defining bounds of “art” and the precincts of the gallery. Duchamp stretched the locale of the readymade (the comb, the urinal, etc.) to the gallery, and, in so doing, transformed our perceptions of each. This essay discusses an analogous association between Duchamp’s “Readymades” and the educational process of a 1st year summer studio conducted at the University of Arkansas. The studio employed a 5’x10’x2’ plywood site, referred to as the DATUM, to explore notions of contextual response according to the following premise: it is through transformation that the character of and response to a given condition—a datum—is explored. The DATUM was investigated through five transformational means: drawing, mediation, modulation, repose, and rejoinder; each of which will be described. Transformation is discussed as a physical act, a process of design, and a system for learning. (See Figure 1.)

TRANSFORMATIVE LEARNING: Preconceptions and Transformations of the Student

Transformative learning involves an enhanced level of awareness of the context of one’s beliefs and feelings, a critique of their assumptions and particularly premises, an assessment of alternative perspectives...and a desire to fit the new perspective into the broader context of one’s life.³

Transformative Learning theory contends that the development of critical thinking occurs through self-reflection—the ability to compare new ideas and experiences to one’s preceding values, experiences, and assumptions. Self-reflection structures the capacity to evaluate and alter (transform) assumptions. A diverse recognition and assessment—rather than rejection—of unfamiliar cultural and physical contexts is fostered. Learning, in general, begins with the creation of a datum of reference. This occurs through the a) accretion of haptic experiences, b) addition of repetitive and anomalous incidents, and c) development of expectations. By questioning and altering this datum, transformational learning occurs. Modified definitions of the sequential and recurring processes of transformative learning are:

- drawing in new ideas and experiences
- mediation between new and pre-existing ideas
- modulating the new and the pre-existing
- repositioning (re-pose) of values and assumptions
- continued assessment and response to prior responses: rejoinder

Each of these transformative phases develops an increasing synthesis of familiar and unfamiliar concepts, and at each phase, not only is contextual awareness heightened, but the accountability to assess one’s values with regard to the context is engrained. Each stage of learning described above has an analogous assignment relevant to the objectives of the studio. These are physical acts of transforming the DATUM, with the primary intention of questioning subtle differences. Transformative Learning views difference—diversity—not as a condition of binary oppositions or prodigious eclecticism. Diversity and transformation are, instead, qualities of subtle discrepancies between similar conditions. Likewise, transformational design processes, such as transposition and iteration, do not always produce highly varied conditions. Iteration is an act of repetition and approximation, transposition an act of relocation. Drawing and repositioning are grounded in iteration, and it is often through repetition that both learning and form-making occur. These are not primarily form-altering transmutations, but are rooted in adaptations of context, location, and proximity.

Repetition, as seen in drawing and rejoinder (above), is often characterized as imitation. According to Deleuze,⁴ however, repetition gains its definition from difference, not simply imitation or likeness. Repetition (or iteration) is the act of producing autonomous, though similar, objects or concepts. It is a process of doubling. Here, we may consider the terms “dual” and “double.”

An essential difference occurs between these two different terms (dual and double) for the notion of two. Dual refers merely to two unrelated objects, while double refers to an uncanny repetition of the same. The latter thus contains an important paradox which the former does not: to be dual is to be both the same and different, while to be double is to be different and the same. The paradox lies in the fact that the double is...neither one nor two; it would also be correct to say that the double is therefore both one and two.⁵

The “double,” the proceeding iteration, allows for the analysis of the preceding version because of its high degree of similitude
and subtlety of difference. It is through comparison—whether opposition, convergence, or deviation—that the beginning design student questions his/her environment and responds to it. The beginning design student, however, often relies on oppositional comparisons; enabling students to recognize subtle differences is difficult. Therefore, the double and its subtle twin gain importance. Students need ways to discern subtle differences of context. Revealing these mechanisms is the primary studio objective. The design problems of the studio impart the conceptual and physical mechanisms (rejoinder, drawing, mediation, etc.) for transforming the context. Ultimately, it is through these means that contextual response occurs. Course preparation investigated several acts of juxtaposition—diptych, triptych, and narrative—each intended to question specific aspects of an object, its context, and the relationship between.

The beginning design student enters architectural education with the notion that design is a microbial stimulus/response relationship, that relationships are binary (linear) in nature. This logic employs concepts of the diptych. The role of the studio was, through the addition of triptych and narrative techniques, to foster students’ abilities to understand the complexity of seemingly simple contextual relationships. These structures recognize the complex context of design problems and relationships beyond simple binary associations.

1. the diptych: a binary (linear) structure, a dialogue typified by:
   - the relationship of a whole system or figure to another whole system or figure
   - the relationship of parts to other groups of similar parts

2. the triptych: a circular structure characterized by:
   - three figures, dominant, subordinate, and attendant
   - a non-serial hierarchy

3. the narrative: a serial structure characterized by:
   - four or more figures or relationships
   - a serial hierarchy

These concepts augment the transformative learning process, and similarly enable an increasingly comprehensive recognition of the context. Students begin with the observation and drawing of a localized region of the DATUM. Students, then identify the overriding structure and organization of the DATUM, and in a reduced context, respond to simple elemental structures. The responses are direct singular manipulations and additions. For example, Mediation is the negotiation between two features with a spatial wooden frame. Rejoinder uses a hydrocal mass to connect two neighbors and two edges of the DATUM. Repose is a subtractive manipulation of existing material. Each assignment occurs through the direct implanting, reordering, or removal of units; and conceptual sophistication builds as students are required to negotiate increasingly complex assemblages. This is equally a transformation of the context and the objects therein. There is an analogous association between the aforementioned processes of learning and the re-contextualized Readymade objects of Marcel Duchamp deployed in the 1910’s.

RE-CONTEXTUALIZATION: Duchamp’s ‘Readymades’

Marcel Duchamp’s Readymades transform the meaning of a known artifact by shifting the customary context of that object. The Readymade is a profane cultural object placed in a refined sacred space: the gallery. Decontextualizing these objects poses a re-evaluation of the object’s relationship to the context; in fact, the primary change is a transformation of the context. The direction and hierarchy of relationships among the art, the mundane artifact, and the art gallery continually shift.

The Readymades, such as Fountain (a urinal signed and titled by the artist in black marker), place common found objects into a direct conflict with context. This positioning questions:
- the object and the gallery
- the object and its typical surrounds
- the gallery and its typical objects
- galleries where works like these are housed
- mundane things and their roll in art
- mundane people and their roll in art
- in the case of Fountain, the notepad and the men’s room wall

It is the alteration to the context itself that questions the meaning of figure/context relationships. The subject of the work is not so much the displayed artifact; the subject is the
THE DATUM: Transformation in 5 Acts

In the summer term of 2003, at the University of Arkansas, a 6-week 1st year studio was conducted. This was the first architecture studio for all students involved. The pedagogy for this studio is grounded in the belief that contextual observation and response occurs through subtle conversions (primarily transposition and iteration). The instructors constructed a 5’x10’x2’ wooden site referred to as the DATUM, a bound physical context in which design occurs through manipulations of that context. The context of the studio discussion was transformed as the context of the DATUM was transformed. The students were not asked to reformulate the entire context with each maneuver; the students were asked to respond to a given region using a specific mechanism of transformation, as previously defined.

Parallel to Duchamp’s mundane artifacts, the art gallery itself may be considered a readymade condition. The gallery has well-established viewing rituals and rules dictating social and physical interaction. In addition, the security of the gallery clearly establishes the separation between the patron and the work. Analogously, the architectural environments of practice and learning maintain their own rules, conventions, and taboos. Each student (and professor) arrive in the “classroom” with his/her own predilections of architectural design education. The DATUM provides these disparate participants with a common “readymade” context in the first year studio.

THE DATUM: Transformation in 5 Acts

ACT I: Drawing in the Field

This project set initiated a process of observation of and alteration to the DATUM. A sequence of three projects was developed from three distinct meanings of the phrase “drawing in the field”:
- the act of sketching while in a given locale—recording
- the act of “taking in” one’s surroundings—observing, collecting
- the act of “filling in” an area between defined regions—completing

During the first two stages of this project, students developed a categorization—a language—of the DATUM. This paralleled, quite directly, Bandler and Grinder’s discussion of transformational grammar and the following linguistic terms: unit, structure, and representation. Through these three acts of drawing, students observed the vocabulary of elements (units)—points, planes, edges, masses, and voids—the organization (structure)—patterns, anomalies, and hierarchy—and symbolism (representation) of the given context. In the third segment of the project students began an intervention into the perceived “voids” of the context. Each student inserted a small unit, constructed of three wooden frame elements, into this void. They were not working initially with the complex jargon of architecture, but with the limited language of “alphabet blocks.” These blocks were not viewed as separate from the context; they were the context. As Vittorio Gregotti states, which is pre-existing is not merely the “background” for the installation of architecture; the context provides the “structural material” for the project. (See Figure 2.)

ACT II: Mediation

This next process of transformation questioned the spatial and ideological boundaries of ownership students often place in their work. The project required students to mediate 2-4 constructs from the previous interventions. As a mediating device, a construct of 3 interconnecting planes (defining a volume of not less than 17 cubic inches) conveyed the nature of the arbitration: differences in proportion or geometry, structural language, or location. Students began by questioning the spatial and organizational conflicts within a given region of the DATUM, including the constructs contained within. Students then developed a means for resolving, heightening, and/or connecting divergent constructs to meet the objectives of the assignment.

Students emerged from the project with a vocabulary of mediating techniques—juxtaposition, separation, and assimilation—and correspondent results—amplification of differences, restating of similarities, and integration into a singular system. (See Figure 3.)

ACT III: Modulation

The term ‘modulate’ is often used in music, referring to phase change in pitch; the etymology derives from Latin, to measure.
To ‘modulate’ suggests an act of tuning or re-proportioning. The “Modulation” project was a more specified iteration of the “Mediation” project. In this intervention, students were introduced to simple woodworking techniques and inserted a small wooden mass into the DATUM. This minimal insertion focused on subtle proportional relationships and contained a minimal program: to “lock down” another piece of the context, to physically engage and fasten another construct to the larger region. Yet, the modulation could not compromise the structural integrity of the DATUM. Because the module contained a structural program, when inserted into the context, it became the context—a permanent part of the DATUM. (See Figure 4.)

ACT IV: Repose

The fifth stage of transformative learning previously described (repositioning) is the most difficult for undergraduate students. The deep-seated predilections of architectural design and the proprietary nature in which a student views his/her work hinder the transformational process. Resultantly, this became the most significant project of the semester. The “Repose” project, like “Drawing in the Field,” contained several meanings:

-repose (n): a moment of pause (resulting in reflection and observation)
-repose (v): to question again
-re-pose (v): to re-position

In this act, students reflected upon the history of and changes to the DATUM. What was the original identity of the DATUM? How the identity of the DATUM altered? Which changes were most significant? Which alterations were most recurrent; which were most anomalous? The boundary of ownership was further dissolved as each student evaluated, modified, and reconstructed 2-3 structures previously posed by other colleagues. This further established the DATUM as a community, not proprietary, device. (See Figure 5.)

ACT V: Rejoinder

In the context of the DATUM, rejoinder insinuates both the notion of responding to prior responses and the physical act of joining. It is the final act in this sequence. “Rejoinder” was structured such that each project had two neighbors. The project called for a mass to be inserted in a previously restricted zone. The contextual response with a direct neighbor, another student, required the transformation to be collaborative. The immediate adjacency of another student and the structure of the DATUM required a dialogue between local and global emphases. Irwin Roth discusses, in terms of adult education, the shift between global and local concerns should occur at useful points in the thought process. Global systems should reference the task at the scale of the hand and local juxtapositions should reference the project as a whole.¹⁴ (See Figure 6.)

CONCLUSIONS

The DATUM becomes the reference from which education bounds, allowing students to engage issues of scale, proportion, structure, spatial articulation, and design communication in a full-scale, bound context. The DATUM places, within “arm’s reach,” a readymade, though unfamiliar, architectural context. Through drawing, mediation, modulation, repose, and rejoinder the student becomes increasingly familiar with that context. Simultaneously, the DATUM is transformed by the student. This perpetual renovation of the known—of transforming the DATUM—requires a continued, active awareness of one’s environment, and resultanty of one’s architectural preconceptions and one’s self. The goal was not to graduate each student through these phases of transformative learning, but to introduce students to these modes of thinking and designing. The “double” contextualizes that which precedes it and is itself re-contextualized by its twin. Juxtaposition is a structure that recognizes complex (though subtle) relationships beyond the static binaries. The Readymade establishes new frames of reference by repositioning old ones. The Readymade Context transforms predilections of architecture by enhancing the students’ abilities to discern characters in a subtle diverse context.

NOTES


6 Gilles Deleuze. Francis Bacon: The Logic of Sensation. Trans. Daniel W. Smith. (Minneapolis: University of Minnesota Press, 2002): 55. Deleuze defines the diptych, specifically related to contemporary painter Francis Bacon “… two sensations, each having its own level or zone, can also confront each other and make their respective levels communicate. Here we are no longer in the domain of simple vibrations, but that of resonance. There are thus two figures coupled together. …what is decisive is the coupling of sensations: there is one and the same mater of fact for two figures”

7 Ibid, 60-63. The triptych defined, again through the work of Francis Bacon by Gilles Deleuze, is a distribution of three basic rhythms, the active, the passive, and the attendant. The active would have increasing amplification or variation. The passive would have a subordinate role, often decreasing in variation or being eliminated. The attendant, always present but never a direct participant.

8 A narrative structure recites specific times, manners, events, actions and reactions in the order in which they occur, or simply states the facts connected with a subject.


12 Gregotti. 67-73.


Non-Traditional Access to Design Education

This presentation/paper will focus on diversity in design education by providing non-traditional/career-changer students with access to innovative curricula and experiential learning processes in landscape architecture. As a response to current and perceived future challenges facing the profession, this presentation will discuss introduction of non-traditional/career-changer students to landscape architecture. This presentation/paper will candidly share lessons learned from an evolving institutional partnership that focuses on non-traditional means for obtaining a traditional education in Landscape Architecture. It is an overview of the integrated processes that form the foundation of a unique, nationally recognized educational partnership between two separate institutions (one private and one public) of higher learning. This partnership was developed to provide non-traditional/career changer students with access to the profession of landscape architecture. The discussion is based on simply discovered observations that have been confirmed through student input and includes: student profiles, their trepidations and suggestions for how integrated advising and teaching processes in seminar, design studio and practice can steward a student’s journey into landscape architecture.

The profession of Landscape Architecture recently identified an impending crisis in supply and demand of qualified graduates. The burgeoning growth of environmental responsibility in urban projects and projected retirement of the baby boomer generation is causing practitioners to exert significant pressure on the academy to graduate more students - in an era of rising instructional costs and dwindling resources. To assuage these contrasting conditions, the cross-institutional partnership between The George Washington University Landscape Design Program and Virginia Tech’s Washington-Alexandria Center, Master of Landscape Architecture program focuses specifically on cultivating career-changer/non-traditional students to advance urban stewardship as an interdisciplinary learning process. This joint academic program is the first ever extended campus program to be accredited by the Landscape Architecture Accrediting Board (LAAB) and the only significantly urban-based fully interdisciplinary program east of the Mississippi River. Both programs share pedagogies that use the “City as Classroom” to reveal urbanism as a living situation through which the most fertile conditions of a place may be experienced, considered and modified.

This presentation will be formatted to candidly share lessons learned from an evolving program’s partnership and based on the conference’s Site (Urban & Natural) category, will promote open topic related discussion.
“I have learned to hate myself for what I am doing now . . . and I realize that I won’t become wealthy in Landscape Architecture . . . (instead) I hope to become richer in other ways.”

- An MLA Candidate

Introduction: The complexity of educating non-traditional/career-changer students is that they are not beginning students – many have significant educational and professional backgrounds. These students come to Landscape Architecture from an array of non-design related backgrounds such as; law, liberal arts, business, government service and most recently information technology. The inherent contradiction is that non-traditional/career-changer students are beginning design students. Their status is perhaps most accurately described as “academic mid-life”. Is it reasonable to argue that non-traditional/career changer students are better prepared for professional activity than their less-practiced single-career peers? Many career changer students come to landscape architecture seeking a greater connection to the earth. They willingly cite their interest in today’s increasing societal awareness of environmental stewardship and often speak of their own intentions of civic responsibility. Others come searching for ways to respond to questions that they have carried with them throughout their lives, but have only recently surfaced. Still others seek ‘greater meaning in the lives by doing something for their fellow mankind.’ A selection of individual statements is most revealing:

“I want to be a steward of change . . .”

“I want to affect the world positively . . .”

“I’ve spent my life wanting to become a Landscape Architect . . . and now I finally have the chance to see what I am made of.”

“My best days are in gardens and I want to make places for people to feel the same as I do.”

“. . . I’m interested in the landscape as an expression of the forces that shaped it.”

The educational challenge is to capitalize on each student’s previous professional and educational experiences while constructively challenging the potential of their design abilities. In general, these are not students who will upon completion of their degrees, access the profession as entry level interns who sit in front of a computer drafting construction details. They will however, fill an array of important niches in the profession by applying their previous life skills in combination with a landscape architectural education. In our (young) programs’ experience, students have entered positions such as Interim Director of the US Department of Interior’s National Park Service Cultural Heritage Program, government and environmental consulting, non-profit organizations and teaching programs at other institutions. Conversely, although they are founded as design practices, fifty percent or more of the professional practice of landscape architecture is the “business of doing business”. Technical writing (specifications, business letters, proposals, billings and contracts) interpersonal skills in management, client relations and contacts all contribute to ensuring a firm’s success. These are often well-practiced skills of the non-traditional/career-changer student. How can faculty respond at an individual level, to more effectively support the educational journey of a student who may have significant and polished technical, verbal and organizational skills - but requires visual, representational and compositional design skills?

The profession of Landscape Architecture recently identified an impending crisis in supply and demand of qualified graduates. The growth of environmental responsibility in urban projects and projected retirement of the baby boomer generation is causing practitioners to exert significant pressure on the academy to graduate more students. The context of this dilemma is an era in higher education of rising instructional costs and dwindling resources. In anticipation of these contrasting conditions, in 1997, The George Washington University Landscape Design Program and Virginia Tech’s Master of Landscape Architecture program began a cross-institutional partnership that focuses specifically on cultivating non-traditional/career changer students. This joint academic program is the first ever extended campus program
to be accredited by the Landscape Architecture Accrediting Board (LAAB). Pedagogically, both programs share a family of students and faculty that are dedicated to revealing urbanism as a living situation through which the most fertile conditions of a place may be experienced, considered and modified. Basic student profiles of both programs reveal the following: Students have at least an undergraduate degree and many have at least one advanced degree. Most are 27-55 years old with a mean age of about 32-43 years. Approximately 65 percent are women. Minority enrollment continues to reflect the status of the profession.

Beyond Typical Advising: The most direct administrative forum for faculty to respond to non-traditional/career changer students is through advising. For career changer students, advising by faculty cannot be limited to the traditional selection of course offerings or developing an individual student’s program of study. A student’s ability to identify themselves in relationship to their surroundings has direct correlation to their ability to achieve academic success. Advising therefore, should provide a framework for advantaging each student’s previous academic and professional experiences as they enter landscape architecture.

There are difficult moments. Students may openly question their own decision processes that have brought them to graduate school. They may agonize over having made the wrong choice in schools and/or programs, or more significantly – invested in a badly chosen career decision. In response, as a measure of their own situation against others, career changer students compare themselves with their younger peers “to see if they match up”. It is an inequitable comparison that is demoralizing at best. The grass is nearly always greener in another’s pasture. Other students are often a perceived as ‘having their act together’ when in reality they may be in a similar situation. Underlying these life-decisions is a nascent fear of failing, by a population unaccustomed to results other than success. Many non-traditional/career changer students have been at the top of their game for so long that conception of their ideas being questioned, argued or constructively contested is an unfamiliar position. One of the greatest challenges that non-traditional/career changer students face is effective time management. How does one balance the rigors of design studio and other coursework, family, and work responsibilities? First and foremost, faculty must stress that design education is not a test of stamina. Design education is a resolution of one’s passion, one’s courage and one’s commitment to a lifelong journey. Although pulling an all-nighter or more, remains a badge of honor in many design schools, for non-traditional/career changers it is often not practical or physically possible. Basic human physiology portends the obvious - a twenty-two year old student sacrifices much less physically and requires less recovery time from a long charrette than a forty something student. This is a significant frustration among career changers who often (inaccurately) believe that they “can’t keep up” with their younger peers. Career-changer students speak of “drowning”, “being overwhelmed” and ‘(feeling like) completing the program is insurmountable’. For faculty, the complexity in advising non-traditional students is to advocate realistic decisions about one’s own physical limitations and long term health, (while not appearing to advocate a reduction in effort) and to develop opportunities that provide an educationally rigorous support infrastructure that can capitalize on a student’s previous educational and professional experiences.

In our programs, the formal process of student advising begins with orientation. Orientation is the first occasion where a student’s past professional ideals and newly initiated academic values become interwoven. Orientation is an annual ritual that passes the legacy of the program from one generation of students to the next. It is a critical reciprocating link in developing both incoming and existing graduate students that is built around peers sharing topical discussion and experiences. Students of the previous year’s cohort are responsible for organizing orientation processes for each incoming class. In most years they have eagerly taken on the task. Travel schedules, meeting/presentation agendas, roommate assignments, meals and accompanying information books are all carefully choreographed by the veteran students. Events are typically centered around an overnight trip to Fallingwater in western Pennsylvania as context for a common design based discussion. Orientation presentations made by veteran students (in the absence of faculty) provide opportunity to candidly share insights on items such as program nuances, the university honor code, faculty quirks and oddities, reviews of course content, internship experiences, nearby eating establishments, where to obtain supplies and even where to find the least surveilled on-street parking. In turn, new students gain an understanding of the program directly from their cohorts as existing
students, while recognizing that in the following year, they will be responsible for orientation of the next class. Veteran students reflect upon their progress while incoming students are ensured that they will not inaugurate their journeys as strangers on their own campus.

Advising can also support each student’s potential for individual achievement through development of coordinated coursework. For example, three credit hour seminar based methods and materials or history & theory courses can be delivered to support (at least partially) six credit hour studio endeavors. Research, projects, and term paper assignments can be developed to benefit design studio projects. Each semester, our programs engage this coordination process across the disciplines of architecture, landscape architecture, planning and natural resources. At a program scale, curriculum should have enough flexibility to accommodate minor change while remaining educationally rigorous. Within reason, taking a slightly modified course load should not have a punitive effect on a student’s education. Students who do not take a full load of hours during a semester, should not be unreasonably penalized by becoming out of cycle with the normal cadence of course offerings. Conversely, students should be encouraged to advance themselves at a significantly sustained pace and not become academic hobbyists.

LAND-JAM is an American Society of Landscape Architects-Student Chapter program that is unique to the Washington-Alexandria Center. It was developed by students, for students and is sustained by students as a forum for sharing topical research, projects, problems with peers. It is built around monthly brownbag lunches and end-of-semester social events. Faculty are always welcome and local practitioners periodically join the discussion as an informal means of advocating access to the profession. As a result, in partnership with the American Society of Landscape Architects – (Professional)Potomac Chapter, students were awarded a 2003-2004 National Chapter Initiatives Program grant to develop, sponsor and produce an environmental film series for Washington, DC’s professional design community.

For career-changer students, advancing their education is not a singular initiative – it is a shared journey supported by spouses, family, and for those already engaging the profession – their employers – as an informal support network. For many, there are often not only financial, but significant domestic sacrifices as well. Our program actively integrates this informal support network by encouraging familiarity with the program and advocating their participation in sponsored activities such as field trips and selected outreach activities. Genuine investment in each student’s support network only increases the capacity of each student to be committed to their individual advancement. Developing non-traditional/career changer student advising processes at multiple levels through faculty, individual student support and the professional community, is a long term investment in an infrastructure that strengthens both the program and profession.

Service Learning in Design Studio: Design studio is perhaps the most significant challenge for non-traditional/career changer students. Unlike the banal conventional process of completing assigned tasks and moving on to the next one, design studio is not an accustomed linear process. Design studio represents a landscape of unpredictable individual/internal and peer reviewed/external variables in which each occurs simultaneously. Each student is responsible for managing their own search in a seemingly indefinable process that is continually tempered by unanticipated discoveries that alter the pace and trajectory of their exploration. In response, some non-traditional/career changer students choose only to operate in their safety zone. They concentrate only on the things that believe that they excel in, because doing so is a self-validation process. It is easy and relatively painless to verify the things that one already knows. This is really no different than erudite pornography, because validation temporarily lets one imagine that something is real, satisfying and fulfilling when it really is not. If they are to evolve in design, non-traditional/career changer students must be directed to confront the their weaknesses in design, not concentrate on their strengths.

Service learning projects are one of the most direct studio opportunities for faculty to challenge non-career/career changer students. In design programs the teaching processes in studio and seminar based courses differs significantly from a career-changer student’s previous, most likely traditional didactic based undergraduate(or graduate) experience. The teaching challenge is to advantage these potentially differing student expectations with new unexplored opportunities and processes that capitalize upon, and extend the non-traditional/career changer student’s familiar business world means.
Service learning projects are an effective means of engaging non-traditional/career change students because they provide a mirror for examining certain conditions of professional practice. Such projects can provide an ideal forum to associate design with previously familiar objects, events, places and processes. In service learning, there is often a real patron, a real site, and real programmatic considerations, each contiguous with the educational program brought forth by teaching faculty. Non-traditional/career change students are accustomed to participating in meetings, asking insightful questions, listening carefully, taking scrupulous notes and responding analytically to problem solving. Service learning patrons are often surprised to find a class of 40-something’s coming to query them about their aspirations. Often through association with perceived contemporaries, students and patrons develop significant interpersonal relationships. These same students capitalize on their accustomed skills in making presentations, networking, and working as a part of a team.

The contradiction in implementing service learning projects comes with encouraging students to dream. They must seek work of creation and imagination instead of seeing only practical solutions that solve problems. Non-traditional/career-changer students are at times, prone to engaging a self-censuring, nay-saying process, but it is not purposeful cynicism. All but conventional alternatives are thought to be “too unrealistic”, “too heavily dependent upon changes” or “too expensive”. One solution to this dilemma is to develop a more kinesthetic/tactile teaching process that advocates research as a search for precedent projects or project types coupled with follow-up group discussion. This provides a reality based process that encourages applied comparison with present design problems/existing situations. The importance of this is not consensus building. Precedent search and the accompanying discourse provide a procedure for accessing possible alternatives through collective open discussion. Such situations provide opportunities to discuss material construction and the consequences and implications of tectonic choices, based on constructed works - in real time and real space. Discussion of precedent with service learning patrons also provides a non-partisan basis for developing a mutual understanding of project criteria, issues and possible solutions.

In a recent example, by working simultaneously with City staff, citizens and local business leaders, our students developed urban design proposals for Alexandria, Virginia’s culturally diverse/racially-divided Little Chililague/Arlandria neighborhood. As an outcome of the year-long effort, student recommendations and urban development strategies were subsequently incorporated into the City’s community based comprehensive master plan. In another example, students have examined the processes that influence the making of places at regional, site and detailed scales. This work has also included outreach based urban design and master plan proposal development for the 3000 acre former Lorton Federal Penitentiary in Lorton, Virginia that was subsequently incorporated into Fairfax County, Virginia’s comprehensive development plan. In another instance, our students gathered morphological information as the first-ever documentation of Huntley, Thomas P. Mason’s 19th century estate in Fairfax County, Virginia. The students revealed previously unknown changes to the site and building. Subsequent student organized public exhibition and public presentations of this work were instrumental in decision to issue $500,000 municipal bonds dedicated to the preservation of Huntley as a culturally significant national historic site.

In service learning projects student responsibility comes at two levels – through personal growth and through contributions of their own work to the greater collective of their peers. As a parallel to the professional world, it is implied that one must be able to present their work and roundly engage in its critical analysis with peers, contemporaries and outsiders. Students learn to recognize that although projects are often associated with a single patron or a handful of private decision makers – their execution is different from the sole authorship of a painter or sculptor. They learn that in the distance between the drawing board and implementation a host of consultants, contributing trades, public agencies and contractors intervene and that thereafter, a project’s consumption and maintenance are very public.

Service learning projects may alter another, perhaps obvious tradition in design – the sketchbook. With non-traditional/career changer students there are subtleties that may either make the sketchbook a foe or a trusted companion. Non-traditional/career changer students often quickly become frustrated by using a sketchbook because they believe that their drawings are not what they think they should be – immediately beautiful. Their language/drawing skills are not yet coordinated with their desire to communicate. These students tend to confuse illustration or documentation of information with the tacit process
of representing ideas with the quality and reasoning of what they are seeking. Further they are unaware of the value of struggling with their work as a part of creation and as a means of exploring. Instead they concentrate on the product. Each may subconsciously recall their prior experiences in primary school art classes when only consummate work was rewarded and offered as example for other students to aspire to. Drawing and diagramming as a means of thinking and exploring design becomes an intimidating and frustrating endeavor and student sketchbooks are filled (or not filled) with empty pages. Often students will abandon drawing in favor of a camera, arguing that photographs—especially with digital cameras, record the work more easily and immediately (without the perceived self-embarrassment of sketching). This argument is in keeping with their concentration on product, not the process of making - or reflecting upon it.

When sketchbooks are initially introduced as places to develop an individualized language that we share as prose in speaking about design, they are more likely to become a trusted companion. As trusted companions they embody design journals of personal thoughts, reflections and images, and are apt to become more productive tools as an individual means of representing ideas. Sketchbooks are most effective when they become habits of each student’s personal process as a log of ideas, notions and inspirations. They also provide a way of organizing information in one central and portable location. Although this seems obvious, this clarification is a worthy advantage in helping non-traditional/career-changer students become adapted to the new challenges of a design program.

Coda: In the context of the joint program between The George Washington University’s Landscape Design Program and Virginia Tech’s Master of Landscape Architecture Program, unique advising approaches and service learning projects are small components of the palimpsest that characterizes providing non-traditional/career-changer students with access to design education. These are simple student and faculty based processes that are sustained by the strength of personal grassroots initiatives between cohorts in design. They are not officially institutionalized procedures and are not found in either program prospectus. As a parallel to making a career, one project or one act does not define its success, rather its measure is based on the entire body of work that evolves incrementally and over time, is taken as a whole.

REFERENCES
Towards an “Integrated” Design Pedagogy:
Exploring Architectural Displacements and the Location of Culture Beyond the Bauhaus Tradition

Although there have been enormous changes in the profession of architecture, our perceptions of it and the people who practice it, the architectural curriculum is still based fundamentally on the values that were brought to America by the Bauhaus.
J. Max Bond Jr. FAIA

Over the last decade a handful of architectural schools have been engaged in an effort to reframe the architectural design pedagogy to enhance our knowledge of non-Western architectural history, theory and criticism. For a long time the vernacular building traditions of Africa, Asia and the Far east, etc., have been displaced among the oddities of architectural case studies, often defined as “primitive”. There are many contradictions between historical fact and an academic preference for the teaching of Greek and Roman tradition in literary discourses which constitutes Euro-centric empowerment. Martin Bernal has addressed this contradiction quite vigorously in his two-volume work Black Athena: The Afroasiatic Roots of Classical Civilization, (1987). This paper will discuss the importance of non-Western architectural history, theory and practice as an integral part of the total global environment. My objective is to consider specific ways in which students and faculty can remodel the design studio culture to engage new and important ideas, which will enhance our education and the international practice of architecture.

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American architectural education, much like the study of architectural history is organized to offer important knowledge about Europe and America. Likewise much of the design research and studio instruction is a systematic enterprise that gathers knowledge about space conceptions that originate in the Greco-Roman world. It follows that in the early 20th century by some leap of faith Europe gave us the Bauhaus, and since then American architectural education has been largely dominated by the Bauhaus model.

Max Bond, the former dean of the college of architecture at City college of New York has observed that

Although there have been enormous changes in the profession of architecture, our perceptions of it and the people who practice it, the architectural curriculum is still based fundamentally on the values that were brought to America by the Bauhaus.¹

I employ this quote because it speaks to the topic of my discussion; it also speaks to an imbalance, which is based on race and as such on “whiteness” as a normative aesthetic condition, which grants Euro-centric reason the edge.² One only has to observe the framework of any number of current design manifestoes to realize the value that our culture has invested in this model over the last half a century. The fatal flaw in the Bauhaus model as a conceivable source of knowledge, so certain and so precise, is that it offers no substitute for the recognition of an alternative way of understanding aesthetic appreciation.

Over the last two decades a handful of architectural schools have endeavored to get us to turn our attention to non-Western aesthetic appreciation and to integrate this knowledge as an alternative to the Bauhaus model.³ For example, programs such as the Aga Khan Program for Islamic Art and Architecture at Harvard and MIT, and the Study of Traditional Environments at Berkeley, where formulated to study the building traditions of Africa, Asia, and the Far East, in order to introduce a broader understanding of architectural history, theory and criticism.

Yet, the study of non-Western environments remains displaced among the anomalies of architectural education and scholarship. The imbalance remains in place because the displacement originates from an overwhelming bias: the belief that Greco-Roman conventions are superior, which promotes a Euro-centric view of the world. And it is this world-view, which controls our aesthetic values and the way we teach design today. Take for example the following statement in the preface to Spiro Kostof’s text, The Architect: Chapters in the History of the Profession.⁴

The great majority of buildings, so called vernacular architecture is the result of individual efforts—people who decide to build, settle for the common look of the community, and produce buildings in the accepted local way...we are not concerned with anonymous architecture of this kind. We are dealing with the profession of architecture, the specialized skill that is called upon to give shape to the environmental needs of others.⁵

Martin Bernal of Cornell University in his two-volume study, Black Athena: The Afroasiatic Roots of Classical Civilization,⁶ refutes the commonly held belief of the Greco-Roman origins of architectural knowledge. But for the most part our architecture curricula, remains committed to the Greco-Roman paradigm as a privileged position in education.

1. Resisting absolute knowledge

In my teaching and writing I argue for a framework that locates culture within an integrated design pedagogy, which includes the study of non-Western environments.⁷ I propose this framework for two reasons: First, our aesthetic reasoning and our understanding of culture are in conflict because our education has been slow in responding to the infallible Euro-centric world; by that I mean it has been slow to the resist absolute knowledge that has been part and parcel of that worldview. Instead we pacify our anxieties with substitutes such as “sustainability” without thinking about or addressing the core of the problem.

Secondly I would like to challenge the fixation, which continues to depict non-Western architecture as inferior, by calling into question critical theories that advocate the legitimate value of ethnic-geographies and the inclusion of cultural diversity. This argument is not new it has only been forgotten: As early as 1957 Sybil Moholy-Nagy argued that the legitimate value of vernacular expression was critical to our holistic appreciation of architectural history and design. Her seminal study Native Genius in Anonymous Architecture constitutes a visible marker in the study of culture, ethnic-geographies and vernacular habitats. Ironically Moholy-Nagy’s pejorative use of the term “anonymous” has led the academic community to confer an inferior status upon the genre of vernacular building types that are
common to Africa, Asia and the Far east, ultimately these regions of the world remain largely excluded and have received little or no formal recognition.

I would also like to recall Amos Rappaport’s careful study of vernacular habitats and dwellings, House, Form and Culture (1969). Rappaport’s sought to define vernacular habitats and dwellings in an authoritative manner. His work was well received, although short lived, throughout a vibrant social and historical discourse that existed in our architecture schools in the 70’s. Alexander’s A Pattern Language followed Rappaport’s work and others offer an alternative epistemology of culture, space and habitat. These studies are immeasurably more diverse than the ideas put forward in The New Architecture and the Bauhaus—a theory so divine that it turns architecture into a perfect tectonic system, and by the sheer weight of the assumed logic made it resistant to revision and readily accepted by educators and practitioners.

2. The Location Of Culture beyond the Bauhaus

Tom Wolf in his essay From Bauhaus to Our House, described Walter Gropius, as “white god no. 1”, its easy to see why. The exuberance of the Bauhaus model was embraced by five guardian angels, Eisenman, Graves, Gwathmey, Hedjuk and Mier - a group of radical individualists - who rejected the overwhelming social mission of architecture that came to prevail in America in the 60’s and 70’s. They remained faithful to the Promethean myth and they cleverly disguised the Bauhaus logic with a new spin resulting in hyper-rational proportions of white purist forms inherited from Le Corbusier and the Cubist movement. These five architects sought to create a new level of order and meaning; they were complete experimentalist who wanted to practice experimentation and to fashion architecture entirely on their own terms.

Prometheus had stolen the fire once again; the exuberant self-realization of the New York Five supported the idea of philosophical post-modernism. Like Greek Humanism it had prefigured western thought once more it was as though this new knowledge, generated by post-modernism thought would liberate us by lifting us above the savage world. Instead it diminished the authority of Primitivism and the concept of “reversible space and linear time” so valiantly described by Claude Levi-Strauss in his study of the West African Dogon.

At this point vernacular architecture and its various manifestations in the academic discourse was ultimately diffused and any further discussion of the foundations of architectural design education or architectural history retreated from inclusiveness to a closed “hyper-rational” system based on the grid. Whatever emotion Picasso—one of the proponents of Cubism and primitivism—had at first verbalized towards the underlying premise of African art or anything connected to it was redundant. As you recall Picasso had expressed the idea of primitivism, which promoted the masking traditions of Africa as the source of cubism. Primitivism as a viable source of creative genius was resisted by the narrowly confined ideas of Hedjuk and others who while embracing Picasso undermined his fascination with African masks, and ultimately any meaningful appreciation of African Architecture in general.

Hedjuk a solitary genius destroyed the altar but preserve the throne; he proposed instead the mask of Medusa, Medusa means “sovereign female wisdom”. Medusa was actually imported into Greece from Libya. The result of Hedjuk’s solitary genius in my view is nothing but utter confusion which Francis Bacon correctly identified four centuries ago as the most fatal of errors, which “occurs wherever argument or inference passes from one world experience [Africa] to another [America].”

I admit that the post-modern mind in our literate society can deal with confusion while leaving the imbalance of power in place, unquestioned and in operation. Through architecture the post-modern mind has gained the power to map a new alien reality far beyond the Bauhaus. Through the written word, Hedjuk has demonstrated the means to construct narratives, images and rhythms immeasurably more complex than the ideas of the Bauhaus school.

At this point I would like pause to raise a number of questions related to my remarks thus far: first of all how do we re-locate architectural meaning and truth within in the imbalanced curriculum. And by that I mean how do we teach cultural diversity as a critical aspect of knowledge in view of the current notions of space, which actually impede any meaningful and substantive reasoning. Secondly what might a new integrated design pedagogy look like and in what way can we incorporate it within the design studio. Finally is it at all possible to dismantle the way the profession of architecture supports race, gender...
and ethnic bias, which ultimately impedes the study of non-Western environments.

3. Towards an integrated pedagogy: The legitimate value of Ethnic Spaces

Perhaps there are no patented answers to all these questions but I am sure you will agree with me that diversity in architectural education is too important to ignore, therefore there is an imminent need to correct the imbalance which has thus far determined the way we teach design. We also need to consider specific ways to remodel the design studio to engage new and important ideas, which will enhance the education of students.

It is for this reason that I argue for an integrated approach, which considers alternative aesthetic expressions to promote an integrated understanding of architectural space. I believe that by selectively modifying the language of design theory to conform to an integrated approach will effectively respond to alternative aesthetic values and the location of culture. This belief is not far fetched, because fluency across the geographical cultural boundaries already exists, we just need to grasp it in a way that will provide a clear view of the world as it really is; not as though it is seen through the narrow lens which leads to a myopic response.

On the other hand I am fully aware that any design curricula enhancement may be interpreted as extreme and subversive, which is exactly why the title of this conference “Not White” is so timely and relevant. However, we must set aside our academic anxieties, because the ideas that I mention are intended to reshape the widespread hegemonic rhetoric and the influence of post-modern architecture discourses—especially those ideas that give primacy to architectural text only while they neglect ethnic, social, and cultural concerns. The radical post-modernist and post-structuralist believe that we can know nothing because their god Derrida, the creator of deconstruction has said so, when he declared, “there is nothing outside the text.”

Well at the risk of being labeled as an apostate I reject Derrida’s expression. I would like to re-insert the authority of the African mask into the design pedagogy. For me the African mask is the ultimate polar antithesis of the Derrida’s expression; it is not concerned with text but with meaning, symbolism and power and a spiritual universe built entirely within a cultural ethos. And to demonstrate this belief I asked my students to study the mask as an architectural problem. My aim in proposing this assignment (see Appendix I) is to deal with a re-assessment of the tectonic conventions and the usual difficulties that we find in teaching beginning design pedagogy.10

There are a number of conclusion that can be drawn from the study of the mask which can stimulate a student’s knowledge of design principles: First, the aesthetics of the mask and the interpretation given to it is confirmed by means of novel analysis and experimentation. Second there is an attempt to abstract the information into form that is both simple and aesthetically pleasing: the combination of which is called elegance. Finally, I also recognize the value of the mask’s form in general and the architectonic expression in particular.

The problem deals specifically with a re-evaluation of the aesthetic reasoning that are applied or taught in a design studio. While there exist an appreciative capacity to escape from the narrow interpretation of African expression, sincere academic appreciation remains inherently rigid or absent for fear of corrupting what we already know. There are reasons for this dilemma: it threatens our understanding of ‘truth’ and it could undermine the appeal of western aesthetic expression. Once again, if we set aside our academic anxieties it would not be difficult to embrace the elements of the African mask or for that matter and non-western cultural object or space conception.

So perhaps we can think of the problem in another way, which does more than depend on the impetus provided by power of what we already know. This takes us into unpredictable new directions and the new knowledge provides an additional test of the original principles that led to its discovery. Complexity is what interests us in the end not simplicity; the African mask is one way to understand it.

This broad pedagogical approach to architecture allows the studio to explore a global, cross-cultural approach to such issues as vernacular tectonics and ecological sustainability, while engaging itself locally in the array of historical and cultural factors shaping the built environment. This change in attitude towards architecture brings some diversity into the field and facilitates the growth and development of an architectural vernacular that would reflect the current needs of clients while taking into account the advancement made over the years.11
I admit that my confidence in the mask as a design problem seems overwhelming but it offers the boldest example of a way to get students to discover, thereby plunging them into new terrain perhaps in so doing they will grasp and appreciate a deeper understanding of diversity in our world. And it is this appreciation that will prove to be significant and will make sense.

APPENDIX I
Beginning Design Assignment:

Problem 1: Design a small exhibition pavilion on a site on Campus (15x20x30 ft. building envelope) to display West African Art. The architecture of the pavilion must be inspired by the symbolic, structural and aesthetic principles of a particular West African Mask.

Naula (Guinea) Mask blend shark, crocodile, antelope and human feature in a baroque style. The masks appear in harvest ceremonies;
Bwa and Ko (geometric designs on masks have meaning: the checkerboard pattern represents the separation of dark from light good from evil and male from female;
Marka (Mali) Metal plating decorates boys' initiation masks;
Eastern Pende is distinguished by geometric motifs in red, white and black pigment. The helmet mask represents the power of the chief; the masks are used in inauguration ceremonies
Bwa and Ko (Burkina Faso) welcome the growing season and the end of the rains
Mbangani (Zaire) used in initiation or circumcision ceremonies

GENERAL NOTES FOR Problem 1:
A translation is a shift and is specified by a direction and distance.
A rotation is a rotation and is specified by its center and an angle.
A reflection is specified by a line of reflection—a mirror.
A motion is a movement, action or gesture
Two parts of an image are congruent if there is an isometry (equality of measure: a geometric transformation such as the rotation of a plane in which the distance between any two points is preserved

Additional NOTES
The first task is to analyze the mask to decipher its aesthetics principles (prepare power point presentation of your analysis).
The second task is to translate these principles into an abstract architectural composition that remains faithful to the original themes, meaning and symbolic aspect of the mask.
The final task is to compose the design of the pavilion using the aesthetic vocabulary of your analysis of the mask, prepare a set of drawings—plan, sections, elevations, isometric and build a model.

NOTES
1 http://hsainfo.drury.edu/notes-online/diversity/articles.php?lng=en&pg=73 date down loaded October 23rd 2003
2 For an extensive discussion of this point see Craig Wilkins, A Nig(g)er Runs Through It, Ph.D. Dissertation, University of Minnesota, 2003, 30 and passim.
3 Two notable examples are the Aga Khan Program for the study of Islamic Art and Architecture at Harvard University and Massachusetts Institute of Technology. The Center for the Study of Traditional Environments at U. C. Berkeley.
5 Kostof, The Architect, xviii, italics mine
7 For example see Akel Kahera, Deconstructing the American Mosque: Space, Gender & Aesthetics, University of Texas Press, Austin TX, 2002.
8 His study is followed by Bernard Rudofsky’s Rudofsky The Prodigious Builders (1977), a revised expansion of an earlier work by the same author under the title, Architecture Without Architects, which focuses on this type of architecture as a tangible expression of a
way of life and an art of building, yet it confirms Moholy-Nagy’s pejorative use of the term “anonymous.”


10 The objective of the Assignment: Exploring the visual framework and interpretive grammar of non-Western art/architecture form, space and aesthetic themes. The framework (i.e. your response to the problem) should address congruence, translation, rotation, reflection, isometry, motion, etc. Your design/composition/translation should enable you to build a specific ‘genre’ of architecture in response to the problem.

11 http://hsainfo.drury.edu/notes-online/diversity/articles.php?lng=en&pg=73 date down loaded October 23rd 2003
Enabling Diverse Populations to Transform the Near Environment

Inner city schoolyards offer opportunities to connect diverse populations of youth to the environment and allow a blank canvas for instruction in the design arts. Schoolyards are potent voids for students to discover design with the natural environment and to use this knowledge to transform the common landscape with the mind and the hand. To engage middle school youth in the design process on such sites enables them to view the urban environment with a new lens, to understand nature’s processes, and to build confidence as the shapers of their own community.

This paper will review the methods by which two dysfunctional schoolyards in historically African-American Washington, D.C., neighborhoods challenged youth in public middle schools to transform unused space into innovative garden spaces for the school and the neighborhood. The process featured an enrichment course in landscape architecture, which allowed students to discover the built environment while they ripened their design abilities. Students examined and documented natural and built environments, visited landscapes of cultural significance, and were introduced to the methods by which design is studied: drawing, sketching, studying scale, building models, designing details, and publicly presenting their work. Students also met with public and private sector design professionals working in their community.

The two schoolyards included murals and mosaics from parallel courses in the visual arts. The students, as well as community members, designed and installed gardens in patterns that reflected their cultures, which they incorporated into the master garden plan.

This paper will review methodologies in instruction, funding, design curriculum, community involvement, and installation for their potential to instruct diverse populations in the design arts, using a focused design methodology. In such settings, students can learn of their roles as stewards of the land and instruments of change in the city. The design experience in the middle school years also promoted continued study in high school, as well as for focused study in college for several students who began their design discoveries within the cultural garden initiatives.

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The dysfunctional urban schoolyard appears an awkward place to engage beginning design students. In many urban schools, schoolyards have become places for temporary building expansion or storage of deficient school equipment. Their plans are frequently poorly functioning spaces on the school grounds: drainage is inadequate, plantings haphazard, and spaces are disconnected from the school’s functions. Little inspired space is offered to the school community.

The case studies in this paper demonstrate that these spaces offer fertile ground to begin design study with urban middle school students. Through the examination of the degraded site, students gain understanding of natural cycles and user needs, and are able to address each of them through design solutions. Keeping these design solutions at a conceptual level in a student’s initial design study appropriately addresses the challenges of neglected urban open space. Design implementation of such design plans can be realized through the expertise of outside partners and community members, as well as from within the school community. In this learning model, students nurture their design intuition, they demonstrate their abilities to their peers and community members, and they become experts in a particular problem. At the same time, the schoolyard allows students to better understand their site’s environmental constraints; the ecological context of their school; and, as in the examples discussed here, the cultural heritage of their community.

This paper describes the design instructional method used to teach two groups of Washington, D.C. middle school students about landscape architectural design and environmental awareness. Methods of teaching design, models of study, as well as the factors required to implement design will be addressed, as will several shortcomings of the instructional and implementation processes.

Two schools were sponsored by a program of the Corcoran Gallery of Art, a private art museum in Washington, D.C, which engages several schools annually in its programs. Corcoran staff and volunteer instructors visit the schools and offer art instruction to complement the curriculum over the course of the academic year. The primary goals of the program are to develop a visual awareness in the youth of the city; to encourage their creativity, self-esteem, and self-expression; and to teach young people art skills and the ability to think creatively.1

The CANVAS (Corcoran Art; New Visions at Schools) in-schools program occurred as enrichment at the two sites discussed in this paper, with the students meeting at lunch or after school. In each case, the students in the curriculum had been identified for their artistic abilities and/or desire to be involved in the garden projects. Landscape architecture was not the sole design discipline introduced to the students in the in-school program, but was viewed as the broadest of the canvases to which the other arts would contribute. Thus, the schoolyard became the focus of the introductory design curriculum.

The first of the two projects occurred in Lincoln Middle School, which lies approximately two miles directly north of the White House. Lincoln Middle School is located in Ward 1, where 25% of the households are of Hispanic/Latin origin.2 The students at Lincoln equally represented three minority groups: African-American, Vietnamese, and Latin American. These three groups of students had interacted infrequently, due primarily to language barriers. The garden project engaged them in weekly design collaboration over a period of six months to assess their school grounds, to design a site plan, and to install the garden they designed.

The students were first introduced to landscape architecture by examining Lincoln’s central courtyard: a 19,000 square-foot opening in the school center, which offered a testimony to the current cultural landscape: abandoned school furniture and office equipment filled the void, overgrown volunteer trees shaded much of the space, storm drains were clogged, and wind-blown debris hung from the tree branches. The students expressed concerns about this wasted resource in the center of the two-story school, although few had ever ventured into the space, despite its adjacency to the cafeteria and two primary hallways through the school.

To initiate the design process, students were presented with a visioning exercise, in which they were given a sketch of a hypothetical walled garden. One window and two doors were its sole features and a human figure was shown for scale. In one class period, students were asked to design a secret garden, using a medium of their choice. The results represented the range of cultural groups known at Lincoln: one student designed a curvilinear maze woven around a central pool, while another designed spaces for producing flowers, herbs, and vegetables. Water and fountains were typical in many of the students’ designs.

The dys
Their design drawings were complemented by continued study of other gardens and sites through slide lectures and photographs. Particular focus was given to the evidence of cultural symbols in landscape architecture, as the students were tasked to bring their own cultures to the Lincoln courtyard. Students viewed images of urban plazas, waterfront parks, and botanic gardens, and viewed images of places such as Peter Walker’s Tanner fountain at Harvard and EDAW’s riverfront park in Chattanooga, Tennessee, which delighted the students with its paving that features Coca-Cola bottles imbedded in the concrete paving.

In addition, the instructor discussed and showed the students designed spaces within the city of Washington, introducing several potential organizing principles in a design composition. Examples included the National Mall and the open space plan for Washington, D.C., as well as several examples at the garden scale, such as the terraces between the National Galleries of Art, gardens at Dumbarton Oaks, and the recreational areas along the Potomac River near the Tidal Basin.

To become intimately familiar with their project site, the students spent two afternoons in the courtyard, and broke into small groups to analyze the site’s components. Each team was given one focus of study: drainage patterns, soil quality, building materials, tree species and sizes, solar angle and position, and the relationship to the adjacent indoor spaces. Students took notes on a 1/16” scale plan of the courtyard prepared by the instructor. The students synthesized their findings into a plan that demonstrated the courtyard’s strongest features as well as its inadequacies.

Using the knowledge gained from their site analysis, the students began designing a plan for the courtyard, borrowing some of their ideas from their individual garden designs. Despite the lack of instruction in scale, the students’ understanding of scale and composition was intuitive. The desire to place their concepts into the real condition of the site was the greatest challenge, and the site’s functional uses became a major guiding principle in design organization. The instructor guided decision-making and worked to achieve consensus. Some students strongly advocated large floral letters spelling the school’s name, or representation of the school’s mascot. Other students were directed by a desire to evoke a mood, such as peacefulness or happiness. Design concepts included a peace garden, a composting garden, and a geometric division of the garden into rooms for reading or outdoor performance areas. Gardens to attract butterflies and birds, and to cultivate fruits and vegetables were also envisioned by the students.

The students assigned a hierarchy to the Lincoln courtyard’s component spaces. The garden contained one primary gathering space for instruction and social events and was supported by several secondary gardens: a shade garden, a peace garden, produce gardens, a butterfly garden and spaces for composting and potting. A proposed walk wove these gardens together through the courtyard.

The necessary translation of the students’ concepts to a built reality required an understanding of scale, as well as consolidation of the concepts. Given the limited number of weekly meetings, as well as the students’ limited experience in drawings at scale, the instructor prepared a consolidated garden plan in one afternoon session with the students and then prepared a drawing to guide the construction process. Meanwhile, some instructional time was spent executing exercises to construct and measure objects using an architect’s scale.

The students also found that each of their component pieces needed to be located in the appropriate quadrant of the courtyard: the peace garden of roses required the maximum southern exposure, as did the gardens for produce, and each of these needed to be far out of the reach of the existing canopy trees. The resulting design demonstrated the synthesis of the students’ cultural heritage with the courtyard’s particular requirements. (See Figure 1.)

Lincoln Cultural Heritage Garden Composite Plan, drawn by Brian Kane.

The garden project would not have been possible without a planned implementation phase prior to beginning design instruction. Community involvement outside the immediate school community was tantamount to the completion of the garden at Lincoln. Outside members of the community offered expertise, labor, and local knowledge to the project. In addition to the volunteer instruction from the Corcoran’s CANVAS programs, several teachers committed to the project at the outset of the design project and reinforced it in social studies and math courses in the regular seventh and eighth grade curriculum. Teachers participated in the after-school and lunch hour instruction. Lincoln School also benefited from the presence of an Americorps volunteer, who started a garden club to assist with the installation and to
gather and cultivate seeds for many of the plants that were installed in the garden, many of which were obtained from the students’ families.

As the garden design developed, mosaic artist Jorge Somarriba began to design large tile mosaics for each of the 24 eight foot high concrete building columns spaced along the courtyard’s perimeter. Each column was to represent a plant, fruit, or flower from the students’ countries of origin. Students first worked on templates and ultimately tiled the columns in mosaics that filled the courtyard, a process that took 18 months, and which was ongoing after the garden’s initial opening. (See Figure 2.)

Garden installation, due to its physical labor and time requirements, was the most difficult portion of the design project. Students worked regularly to haul debris from the garden, and to lay out the beds using tape, strings, and rods. One student’s uncle, a National Park service employee, tilled planting beds for each garden and incorporated organic matter into the soil. This was an arduous task, given the hard urban fill that made up the courtyard, a site condition encountered in three successive schoolyard installations. Over 40 hours of volunteer labor was required to prepare the beds as laid out by the students. Students excavated hundred of concrete pavers and reset them with a proper setting base, while incorporating patterns depicting cultural symbols in contrasting dark bricks. The bricks were donated from a local manufacturer. Two local nurseries donated trees, shrubs, and groundcovers as specified on the plans.

As important to the project as the installation, the celebration of the design’s completion called the community to witness the work of its students. The Lincoln Cultural Heritage Garden was dedicated during a school-wide ceremony on Earth Day. The student designers presented their concepts and drawings to the student body to explain its inception. The following fall, a Harvest Day celebrated the fruit of their labors, completed with salsas made from tomatoes, okra, yams, herbs, and peppers produced in the garden. In addition, a contest was held to carve several of the gourds grown in the garden.

The Lincoln garden project enabled middle school students to transform a degraded site in the center of the school’s daily life. They received instruction in the fields of landscape architecture, mosaic, and sculpture, as well as in the skills of plant and hardscape installation. Several of the students in the cultural heritage garden project continue to pursue their design abilities in other forums. Upon graduating from Lincoln, ten of the 12 students in the Lincoln School CANVAS program gained admission to art focus schools in the public school system: the Duke Ellington School for the Arts, School without Walls and Wilson Senior High School.

The CANVAS program approached another compromised schoolyard at the Fletcher Johnson Education Center (middle school), located on the east side of the Anacostia River in the community of Marshall Heights. Marshall Heights contains the largest percentage of African Americans living in Washington, D.C. and is located in Ward 7, which has the District’s second-highest percentage of families living below poverty level. The Anacostia River is the area’s most prominent natural feature, although it is one of the nation’s most polluted rivers, and is today the focus of an ambitious renewal plan by the District of Columbia’s Office of Planning to use the river’s natural and cultural resources to bridge the divide between the city’s east and west sides.

The school sits on a ridge, with no ground floor windows and a daunting twenty-foot ascent from the parking lot to its main entry, which overlooks the proposed garden space on the level of the parking lot. The trees in the area were planted with no apparent pattern, trash and debris blew across the grassed area, and windowless concrete walls bounded three of the four garden boundaries. The southern prospect offered a view of the succession of ridges that run through the region. The school’s situation on one such ridge, offered the opportunity to discuss landforms adjacent to the Anacostia River. (See Figure 3.)

Fletcher Johnson was constructed on the site of the former Payne Cemetery, a pre-Civil War burial site for the area’s earliest African American residents. Given the site’s rich history, and its prominent topographic location in the community, the research phase of the project was extensive. This allowed the students to understand the school’s social and ecological context, and to render them local experts in the cultural heritage of their school grounds. Students researched the background of the neighborhood, heard oral histories from local residents, and learned of Marshall Heights’ relationship to the Anacostia River, the re-engineering of the river for flood control, the compromised state of its tributaries, and the
Staff from the District of Columbia’s Environmental Health Department led students in an ecological analysis of the site. This examination included a soil test to learn the pH of the soil, as well as its mineral and organic content. The staff from EHD also raised student awareness of the issues of stormwater management and the benefits of using native plants. The Earth Conservation Corps (ECC) conducted a workshop for the students about the Anacostia River’s ecosystem, and led them on a boat tour along the river to discuss the renewal efforts, and the cumulative effects of ecological design. This approach created a level of expertise among the ten Fletcher-Johnson students so that they would comprehend the status of the ecological systems within the Marshall Heights community.

The design phase of the Fletcher-Johnson garden focused on sensitivity to the ecology of the Anacostia River, and its past ability to support the inhabitants of the region. The students began their garden design with a similar secret garden design exercise as their peers at Lincoln, as well as by viewing and studying other designed public urban spaces.

Given the steep gradient of the school’s site, and its elevation above street level, the students proceeded to design the garden in model form. This method also worked well for students who were not versed in the use of architectural scale, and maintained design focus on architectural organization and composition, rather than focusing unnecessarily on drafting or drawing to scale.

The instructor prepared a foam-core model at 1/16” scale for the students to use as they designed their gardens. A charrette challenged each student to prepare a model of their idea for insertion in the frame of the prepared model, followed by discussion of each design’s merits. A final synthesized model was prepared to show the students’ collaborative design intent. (See Figure 4.)

Simultaneously, in their arts curriculum, the students had started designing five 30-by-10-foot murals along the school’s ground floor walls. These panels depicted cultural symbols of the settlers of the Marshall Heights neighborhood and were rendered in brilliant colors to address the many passersby of the Marshall Heights neighborhood. The garden design presumed that the garden would follow soon after the murals were completed.

As with Lincoln School, community partners outside of the school were essential to allow the garden to reach its installation phase. The non-profit community development agency for Marshall Heights assisted with purchase of supplies for the garden, as well as with labor during the garden’s installation. The Earth Conservation Corps and staff from the District of Columbia’s Environmental Health Department also installed the garden. Local residents, parents, and volunteers from the Corcoran Museum of Art also worked during the initial installation, which was conducted on Earth Day and which received coverage from CNN and two local television stations. (See Figure 5.)

Conclusion

Schoolyards in city schools offer opportunities to challenge students to think about their cultural heritage, to respond to user needs, and to address ecological issues as they generate designs for a particular site. The students become experts in the requirements of their own schoolyard, as well as in the cultural and the natural heritage of their communities.

The schoolyard garden offers the beginning design student an opportunity to problem solve in three-dimensions and to celebrate the heritage of the landscapes in which they live daily. Students grow in their understanding of self, learn of their place as artist within the community, and to become transformers of the places in which they stand and live everyday. Design ability, critical thinking, and knowledge of the means of construction and implementation were cultivated during the design and installation processes.

The difficulties faced in each project included the lack of sufficient resources and labor to implement the full extent of the garden design. Additional labor from community members who had contracting or building associations may have improved the quality of both installations, and ensured a longevity to each garden. The full commitment of the principal and several staff members was also essential, and in some cases, wavering support placed more burdens on outside sources.

Strong governmental support from local watershed or environmental divisions strengthened and validated the instruction and implementation phases. The agencies cited in this paper continue to be involved in the current schoolyards undertaken by CANVAS in the District of Columbia Public Schools. The successful collaboration of private, public and
community members in the first several CANVAS sites has led to the granting of significant sums of money from outside sources to continue work throughout the District, with a particular focus on schools in the Anacostia watershed. This year, CANVAS students are designing a 200-foot mural along a major commuter artery at its interchange with a historically African-American community in the Anacostia watershed.

Realistically, there is no guarantee that these gardens will be retained in successive phases of the institution. Schoolyard gardens are not legacy places but instead offer opportunity for design initiation. In the case studies discussed, the first shoveling of earth or laying of brick marked the initial gesture towards transformation of forgotten and underutilized urban space. The process chosen enabled change to begin from within, rather than from an outside source, and also demonstrated design’s role as the critical first step towards enabling a positive change in the community.

NOTES
The Jews have been nomads for many years of their existence. Their first flight occurred when they were forced out of Egypt and spent forty years wandering the desert. The huts that the Jews used during their exile were called sukkot and every year, during the holiday of the same name, Jews all over the world construct tents that help them remember their nomadic history and celebrate the bounty of the earth. According to the Torah, these freestanding structures must have a covering (sekhakh) that is made of material that grows in the ground but has been detached from it, like tree branches or corn stalks. The roof must be designed in such a way that it provides some protection but also allows the residents to be able to see the stars through it. Once built, families dine and, depending on the climate, sleep in their sukkot. The time they spend in their tents, looking at the stars, serves to remind them that humans are deeply connected with the cycles of the earth.

Sukkot questions two tenants of Western architectural thought: authorship and permanence. Since the institutionalization of architectural education at the École des Beaux Arts, architecture studio tends to focus on independent, personal creation. However, sukkot, as with many tent structures, are designed and erected through a collaborative process. Rather than building symbols of a single ego, the teams of both architects and non-architects built representations of communal ideas and through working together, learned skills necessary for the formation of communities. Similarly, the temporal nature of the sukkah (they are disassembled after seven days) stands in direct contrast to the Western notion that architecture is eternal, resulting in buildings that are unresponsive to changing ecological and cultural practices. Hints of the ephemeral humanize architecture by allowing it to adapt to natural cycles and changing usage patterns.

Sukkot are similar to the structures of many nomadic people, including Native Americans, Aborigines, and Bedouins. In contrast to the Western notion of dwelling, which is predicated on people’s attachment to a physical place, home for these cultures is independent of site. Instead, the psychological comforts of home are provided through the rituals of construction along with the familiarity of the tent structure and its contents. The lessons of Sukan are pertinent to architects as well as Jews; the holiday offers beginning students clues for thinking about building homes and communities in today’s fast changing, increasingly mobile world.
The Jewish holiday of Sukkot (Feast of the Tabernacles) occurs from the 15th to the 21st of Tishrei and celebrates two events: the end of the fall harvest season (during which time temporary dwellings were used to expedite the gathering of the harvest), and the memory of the booths that the Jews lived in during their forty years of wandering in the wilderness following their exodus from Egypt. Sukkot (plural) are also the name of the huts that are erected during the holiday. According to the Torah (Halachic Criteria), a proper sukkah (singular) has a roof made from unprocessed vegetative material that provides some protection but also allows the residents to be able to see the stars through it. Additionally, it must have at least three enclosed walls, for protection from the wind, stand on its own, without the help of any existing structures, and should have a height of between three feet and twenty feet. The sukkah must be large enough to accommodate the daily life of an entire family since over the seven days of Sukkot, a family eats, and if the weather permits, sleeps in their sukkah:

“You shall live in booths seven days; all citizens in Israel shall live in booths, in order that future generations may know that I made the Israelite people live in booths when I brought them out of the Land of Egypt...” (Leviticus 23:43).

The sukkah is erected on the first day of Sukkot, and although it will be disassembled seven days later, it is always decorated with ornaments that reflect the aesthetic sensibilities of its owners.

This past Sukkot several architecture students (nine first and second years) volunteered to work with nine Hillel students on a sukkah building competition. The coordinator of Hillel and I organized the students into three teams, who, over the course of two weeks had to design a sukkah that met all of the Haladic criteria. The sukkot were also judged on their ability to educate the public about one of three main themes of the holiday: the history of Sukkot (what the holiday is, why it’s celebrated, etc.), feeding and sheltering the needy, or caring for the environment. In keeping with the spirit of the holiday, the students’ sukkot had to be made of materials that were either totally biodegradable or attached in such a way that after the sukah was disassembled, the material did not have any holes or cuts and could be donated to the local habitat store. The students erected their structures in two hours, spent the entire day in their structure, and had the campus cleaned up by 10pm that evening. This one-day event introduced students to ideas that challenged their notions of the role of the architect and architecture in our society.

Sukkot asks us to work together to build a structure.

Because a sukkah requires many people to build it so that it can be completed in one day, it challenges the myth of the heroic architect. As Allsopp states:

“In the hot-house atmosphere of a school of architecture, or in the committee rooms of a professional institute, it is only too easy to be infected with the belief that architects control the social climate in which they work. One is prone to take the biographies of the masters of modern architecture at their face value and see the architect as a god-like being ... the architect is conscious of his superior nature and his mission to mould the environment for the good of mankind.”

Besides having to deal with joint authorship, the haladic criteria for designing a sukkah forced the architects to incorporate the environment (for the sechah) and religious specifications into their design. They had to respond to a society, they could not “control the social climate.” They also had to respond to the environment. Although sukkot can occupy any site, they tend to be more responsive to their environment than the permanent houses of Western architecture. Rather than ignoring the landscape and creating a barricade from nature, a sukkah, with its roof made of local materials woven loosely enough so that the sky is always in view, connects the dweller with the earth’s daily cycles. Its architecture formed of locally...
grown materials reflects the environment rather than aiming to reshape the environment into a preconceived ideal image.

Having to work within these criteria caused the students to question the commonly held belief that a work of architecture is an autonomous object, standing alone in its perfection. This idea comes from our personal experience and the way architecture is represented to us. As Beatriz Colomina suggests, the view of architecture as a still-life artwork or ‘nature morte’ became significant in twentieth-century photography that omitted human life in favor of presenting architecture as an ideal, static object. The sukkah is an architecture that responds to its users. As the sun rose and began to heat the campus, one group chose to add more branches to their roof. The mutability of the structure humanizes it. Since the sukkah was never conceived as an untouchable work of art, the students had no problem changing it. As in many nomadic societies, the students found that it was the act of building rather than the building itself that provided a site for social bonding. The process played a more important role than the final product.

Sukkot asks us to dwell in temporary structures.

For most people, after the seven days of Sukkot are over, they can return to a permanent home. However, there are those who cannot. Many people live in transitional housing; wars and emergencies have led to increasing incidences of people expelled from, or avoiding permanent settlement, leading to the erection of temporary and unplanned tent cities. The increased need for tents for victims is one reason to examine nomadic structures like the ones the Jews used during their exile. Sukkot reminds architects that these structures are homes worthy of their attention, which is an idea that Shigeru Ban, an architect well known for his design of paper-tube disaster relief housing used in Japan, Turkey, and Rwanda, has already embraced. As he says:

“Refugee shelter has to be beautiful. Psychologically, refugees are damaged. They have to stay in nice places.”

Ban’s work clearly demonstrates one of the key principles of Sukkot; home is a more complex idea than a permanent building. A home must provide both physical and psychological shelter; even when it is temporary, it should be decorated so that it comforts its occupants. Sukkot, which are built by Jews around the world, provide psychological familiarity through the ritual of building and decoration regardless of its site. These aspects have been incorporated into the design of successful transitional housing; they could be incorporated into a studio about housing.

While people seeking permanent resettlement remain an important part of global movement, contemporary mobility often involves global migrants whose occupations, curiosity, or necessities compel them to continuously move. The increasing numbers of voluntary nomads is partially caused by the decreased price of flying, increased speed of trains, and the ubiquity of infrastructure that caters to drivers of all types of vehicles. These voluntary nomads need a new way of understanding home; they too could learn from nomadic societies who believe that home does not have to be associated with a specific geographic location.

For the Bedouins, the Arabian Black Tent is a reassuringly familiar dwelling that is strongly symbolic of their identity and culture regardless of its site. If we accept that home is not a fixed location, we can capitalize on some of the concepts of tent architecture. As critic Otto Kapfinger noted in 1984:

“As primitive hut and flexible nomadic dwelling, the Yurt is an elegantly simple ideal type which reflects certain desires and theories which played a role in the beginning of Modern Architecture. Frank Lloyd Wright and Le Corbusier saw in the nomad the prototype of the new democratic man, one who represents freedom, spirituality and decentralization in principle, in contrast to the city dweller’s site-fixation and social hierarchy.”
Fuad I. Khuri confirms Le Corbusier’s assessment of nomadic politics in his book, *Tents and Pyramids*. He argues that Bedouins perceive reality as a matrix of discrete units inherently equal in value. This is the physical organization of a Bedouin encampment, composed of tents scattered haphazardly on a flat desert surface with no visible hierarchy. Yet only through their relation to each other do individual tents become a dwelling; it is the encampment or community that that is the home. Each tent is seen as one element of a complete system — a mode of weaving a life pattern.6

Similarly, Westerners also consider their friends and family part of their “home.” Sociologists have shown that people in diaspora not only associate with neighbors in the hostlands, but attempt to maintain contacts in the homelands from which they have come. As Bhabha writes, “Immigrants construct their cultural identities as citizens of their host countries while simultaneously retaining strong affiliations, identifications and loyalties to the culture of their home country.” This assessment is a generally held truism among the fields of sociology and anthropology.6

The difficulty of maintaining these social ties was one barrier to contemporary nomadism. New communication technologies such as the Internet and mobile phones are overcoming this obstacle by allowing these digital nomads to stay in touch with their loved ones. As Dr. Robbie Blinkoff, notes:

“A class we call ‘the mobiles’ already exists. And the behaviors we observed illustrate a complete societal shift to a mobile way of life. It varies by geography, generation, gender and type of work, but a ‘mobilevolution’ is afoot.”8

A 1999 study by the Context Institute of 144 people in seven international cities including Sydney, Beijing, Rio de Janeiro, Rome, Stockholm, New York City, and San Francisco, found that mobile phones had become integrated into the lifestyles of their participants. They identified several broad shifts in thinking and action that have taken place in the late 1990s, including:

“A new sense of ‘phantom proximity’, which means “being alone” is no longer linked to physical space’ physical proximity is no longer a barrier to forming communities, and socio-evolutionarily, the mobile lifestyle is the perfect complement to society and culture’s continued shift to a modern day nomadic existence.”9

Whether you call them mobiles or digital nomads, a term coined by Makimoto and Manners in 1997, their communication devices are similar to tents for Bedouins. In each case, these objects are understood as enablers of dwelling, not dwellings in and of themselves.

Bedouins see their tents as we see coats; each is an accessory that provides protection from the elements and can reflect your personality. Karin Harather’s 1995 book *Houseclothes; on the Phenomenon of Cladding in Architecture* furthers this analogy by considering tents in a context of the wider field of fabric architecture: drapes, linings and canopies.10 If architecture can be fabric then clothes can architecture. And, since community is created through digital devices and clothes are a signifier of identity that can travel, wearable computing should be seen as a possible “home” for the contemporary nomad.

Computer scientists at many research universities are pursuing the design of these devices. Their goal is to change the way we interact with digital technology:

“To date, personal computers have not lived up to their name. Most machines sit on the desk and interact with their owners for only a small fraction of the day. Smaller and faster notebook computers have made mobility less of an issue, but the same staid user paradigm persists. Wearable computing hopes to shatter this myth of how a computer should be used. A person’s computer should be worn, much as eyeglasses or clothing are worn, and interact with the user based on the context of the situation. With heads-up displays, unobtrusive input devices, personal wireless local area networks, and a host of other context sensing and communication tools, the
wearable computer can act as an intelligent assistant, whether it be through a Remembrance Agent, augmented reality, or intellectual collectives.”

Perhaps architects should be working with these scientists, especially as these mechanisms start to create the social encounters that used come solely from the design of the built environment. Scientists are also working on embedded chips that would allow us to more easily stay in contact with our friends. The decreased size of communication devices makes them even easier to bring along; this is important for while Nomads physically travel with their friends, they are forced to connect to ours through digital technology. Yet in each case, the participant is involved in a community that is in a constant state of change as members come into or leave the virtual group and also change their actual world position.

The ephemerality of tents and the constant changing of exact location between the tents are part of the reason that nomadic communities view the world in a constant state of becoming. “Nomadology” is a term first coined by Deleuze and Guattari to describe that outlook. According to them, viewing the world from within the Cartesian schema, as composed of distinct objects arranged in space, is outdated. Instead, they propose a dynamic view of life that emphasizes the fluxes and flows of which all things are made (like the way the Internet grows).12 Everything that exists is involved in this process of change, including architecture. In 1990, Flusser wrote that nomadology, as defined by Deleuze and Guattari, marked one of the main revolutions of developed societies. In an essay Zelt, (“Tent”) he suggested a return of developed society to nomadism through communications, a movement that he regarded as being of similar global significance to that of the original agricultural revolution.13

Of course, one result of communication devices is that people will stop traveling since they will be able to reach work from home. On the other hand, the “WTO estimates that, in the mid 1990s, the average value of international tourism has grown faster than world exports of all commercial services, and international tourism now represents 30% of the value of the total world export services. That is a very considerable testament to the nomadic urge.”14 In the view of two prominent computer scientists:

“There is so much investment chasing the goal of ubiquitous digitization that it will become a reality. With it will come electronic communication that will be as universal and robust as the present-day fax –but a fax that is not just text but includes sounds, voices, photos and video. That’s when geographic ties get snapped and when people become free to roam while remaining invisibly connected to all the communication networks and entertainment channels, and to every friend, relative or business contact they might want to speak to. That’s when the realization will dawn on people that the have a brand new option to consider: ‘Am I a settler or a nomad?’”15

By exposing students to these issues, they can and will be instrumental in helping to answer that last question.

NOTES
1 Bruce Allsopp, Towards a Humane Architecture (London: F. Muller, 1974).
4 Tsugio Makimoto and David Manners, Digital Nomad (New York: John Wiley & Sons, 1997).
5 Kapfinger, Otto. “Das Haus Als Futteral,” Die Presse (Newspaper, Vienna) no. 18-19 (February 1984) as translated by Gregory Cowan and reprinted in “Nomadology in Architecture: ephemerality, movement and collaboration.” (Australia: The University of


9. Ibid.


15. Ibid.
Due to the rapid expansion of product markets, design globalization has become a frightening tendency in recent years. Many products have been spread throughout the world with little understanding of the particular cultures in which they are being marketed. The mainstream precept is that if the product is good for us and has been successful in our culture it should be successful elsewhere. This presumption negates a fundamental precept of good product design i.e. that good design is achieved through the understanding and knowledge of the product’s user. This knowledge includes, the user’s environment, his or her culture and history, issues related to ergonomics, economics, gender, age etc.

I feel that understanding the importance of research and knowledge of user particularities is an essential aspect of a students’ early design education. With this sentiment in mind I assigned my students a design project that is based on one of our regions’ indigenous industries. A thorough understanding of how the product relates to our area (Southwestern Louisiana) would be necessary. I usually like to start a design project with a recognizable user problem and because one of my students indicated that the present crawfish trap has several severe problems, not the least of which is the fact that raccoons end up eating 20% of the farmer’s catch, I decided that designing a better crawfish trap would make a wonderful class project.

The emphasis of this project was on the student’s formulation of a personal and discriminating approach to designing the crawfish trap. Historical connections, user needs, ergonomic factors, environmental and social concerns, issues of classic design versus trend design, the search of form thru function, the understanding of product in relation to its production, were areas of investigation and research. Each student created a unique web of information relevant to his or her design convictions based on thorough research. Group brainstorming, group critique, and the conducting research and investigation as a group were required to encourage a collaborative studio environment. The final challenge of this project was to take this complex often-contradictory information web and through the process of 3-d drawing, 3-d computer modeling and a hands on model making approach arrive at a unique and elegant solution. This hands on approach was investigative in nature and emphasized the design process, questions asked and answered rather then focusing exclusively on the end product.

This paper documents the journey my second year design class took in designing a new crawfish trap. The cultural particularities, the various user concerns, everything from speed of baiting, durability, quality and quantity of catch, efficiency of use, economic concerns, historical connections and cultural symbolism, become part of my students’ design story.

The key to the success of this project was having the students investigate an indigenous product. Because they lived in an area where crawfish farming practically takes place in there own backyard they were able to achieve a thorough, first hand understanding of the relationship between the user and the product that I believe is necessary to create superior design.
Introduction

The rational for the choice of the Crawfish trap as a design project was to have a class of second year design students experience the importance of qualitative in-depth design research that focuses on collecting local field information. It was also the observation of the teacher that the Crawfish trap has been seriously neglected by designers giving the students plenty of opportunity to uncover user problems relating to the harvesting of crawfish. These user problems served as a jumping off point and gave students an initial design direction for their projects.

This paper describes the journey a class of second year Industrial Design students from Southwestern Louisiana took from when they were given the design assignment to the conclusion of the project represented by their final presentation. It is the hope of the author that documenting this class project will clarify the merits of local indigenous design and the value of incorporating direct experiential research into a class design project.

In the Beginning…

The students’ initial reaction to the Crawfish trap project was far from positive. They were expecting to be assigned a project that would be commonly associated with cutting edge design. We all can imagine what a table, fixture or electronic house ware product might look like when it is designed by a talented designer. But what about a Crawfish trap? The only image that the students could associate with this project was a crude wire pyramidal shaped object that they had seen from time to time lying around the backyards and storage areas of neighbors and friends. In their minds the project seemed far too restrictive in that they couldn’t imagine what a well-designed Crawfish trap might look like. For the teacher on the other hand this particular problem was actually an asset. Design teachers know how much time is spent breaking students from their preconceived ideas. Since there were very few Crawfish trap images to refer to, students didn’t have to make any effort not to adhere to the preconceived. Even though Crawfish traps have been around for hundreds of years, their design has been amazingly under developed and neglected. Because of this the project had many innovative design potentials that hadn’t yet been explored.

The other reaction that the teacher observed amongst his students was the feeling that the crawfish trap was an embarrassing product to design. Maybe this notion had to do with the fact that they knew Crawfish farming too well and that it is not considered a futuristic, advanced, technological occupation. For many of the students, crawfish harvesting represented backwoods Louisiana. From what the teacher could tell they were fond of their heritage and surroundings but had trouble with the idea of designing for it. It could have been that this negativity existed for the same reason that most Philadelphians rarely go to see the Liberty Bell or Memphians rarely visit Graceland. It should be made clear that once the students’ research began, and their ideas began to ferment, their initial negative reaction disappeared. Because they had grown up in the environment they were designing for they were able to design at a deeper level than could be expected from a designer with few ties to the area.

Research

Research is without a doubt a very important design activity. It has been the experience of the teacher that when a student shortchanges the research process the project inevitably falls short. It is important for students to know that what they discover through research will affect their project profoundly. With the Crawfish trap project there was an emphasis on collecting information that was accessible locally. The students were told to take advantage of the opportunities that existed in the immediate area. The following is a handout students were given that categorized their research activity.

Research sources:
- Local sources:
  § Crawfish farmers professional or recreational
  § Local designers involved with aquatic design
  § Local research scientists affiliated with university aquatic research programs
  § Companies that are connected to the crawfish industry
  § Local libraries.
  § Local aquatic organizations including government groups
- Outside sources
  § Internet information
  § National or International experts in the field
  § National library sources
**Research mind set:**
- Be organized
- Set goals
- Write everything down and/or draw your ideas
- Consider more than the obvious
- Allow your research to go in seemingly absurd directions

**Research techniques:**
- Information gathering, user, other, vicarious or actual experience
- Group brainstorming

**Research areas:**
- History
- Function
- Structure
- Material factors
- Ergonomic factors
- Environmental concerns
- User considerations
- Social concerns and cultural concerns

Students entering second year Industrial Design have a range of organizational skills. Some students are resourceful and are able to locate information easily whereas there are others that feel hopelessly lost. The ability for students to manage their time well is also an area that varies greatly from student to student. Ultimately these time management techniques and research skills have to become part of the design process and are the responsibility of the designer. At the second year level, the teacher can’t expect the whole class to understand and use research and time management techniques without outside help. The above hand out help the students keep on track and direct themselves to the research area without too many specifics. It is important not to micromanage the students’ research techniques. Part of the excitement for students in developing a project is for them to initiate and carry out the research activity. The hope is for students to feel like they own and have created the project. If there is too much specific direction from the teacher he/she runs the risk of taking the project psychologically away from the student.

**The sketchbook requirement**

Design students should make active use of a sketchbook. It is important that they know how important drawing is to a designer, that without drawing communication suffers, not only between designers but also from within the designer. Once students are able to realize and express their internal dialogue of images and ideas through drawing they make a big leap forward as designers. Students should be asked to use their sketchbook on a daily basis and let it become a visual diary. This visual diary should become part of their body and be taken with them wherever they go. The following is a list of the type of information that ought to become part of this diary.

1. Information, images, and ideas about their current project.
2. Design insights. These are inspired solutions to design problems. Sketches, images and descriptive words.
3. Design problems that have been noticed either by one’s own experience or by observing others. Sketches, images and descriptive words.
4. Thoughts or images that are important to the designer for almost any reason should find there way into the sketchbook. (See Figure 1 and 2.)

It is good for students to be open to the use of many different kinds of media when entering...
information into the sketchbook. Pen, pencil, paint, collage, poetry, descriptions, diagrams are all very acceptable. The sketchbook should not be proscriptive in nature but rather be a receptacle for experimentation and newly found discoveries. In addition design students should learn to draw what is inside their mind. The designer’s thoughts and ideas for solving problems should go from the brain to the paper. This kind of drawing makes for informed active drawing. Often informed drawings are beautiful and they always have more meaning then simply an image.

**Brainstorming**

Brainstorming is a method that is being used by cutting edge design firms. A group gets together with drawing pads, a large bulletin board, pushpins, magic markers and proceeds to throw out any idea that comes to mind regarding the subject being brainstormed. The two most important tenets of brainstorming are first; that no one is allowed to be judgmental about someone else’s idea regardless of how crazy it might seem and second; the more ideas that are turned the better. A successful brainstorming session might turn out 100 ideas an hour. (See Figure 3.)

Tom Kelly the general manager of IDEO wrote a book called The Art of Innovation that should be on the reading list of every Design student. Kelly describes the kind of chemistry that is needed to make a design firm successful. Brainstorming is a tool that they use often and with success. The notion that given the right environment everyone can innovate is a central theme of the book.

Allowing students to work together is a valuable exercise and a learning experience for every one. Brainstorming is a wonderful way to allow students to think and work together. At the very least they are being prepared for situations in the future that will require interacting with a group. More than that, the exercise will most likely produce more unexpected design directions then any single student would have thought of. Hence, the mantra of IDEO; “Enlightened trial and error succeeds over the planning of the lone genius.”

**Identifying the problems**

After weeks of research and many field trips my students had uncovered lots of problems with the present Crawfish traps. Most of these problems would never have been recognized had the class not had access to the local experts or had not been able to go out into the field and actually witness the crawfish harvesting procedures. Many of these problems influenced their final trap designs. The following is a list of the most important problems that they found.

1. The traps were attacked by predators such as raccoons, and caused much of the crawfish catch to be eaten by the predators.
2. Entrance funnels did not keep all crawfish inside the trap. A substantial percentage of crawfish escaped the way they came into the trap.
3. Large birds such as gulls and egrets would land on the part of the trap that emerged from the water and tipping the trap over at times allowing the crawfish to escape.
4. Due to the lack of oxygen at the bottom of the pond there was a problem with keeping the crawfish alive. The crawfish die easily from oxygen debt. It is common for farmers to harvest dead crawfish when the water conditions are not right.
5. The three entrance funnels that are on the lower corners of the pyramid traps were not always possible to orient in the correct direction in relation to the water flow to get the optimal crawfish catch. Crawfish are attracted to the scent of the bait and if the trap is oriented incorrectly they don’t find the entrance of the trap as easily.
6. The three entrance funnels were not shaped in a way to allow for the best catch. The funnels were long and cylindrical instead of being large at the opening to encourage the entrance of the Crawfish.
7. Getting the crawfish out of the trap when harvesting was relatively awkward. The students observed a lot of unnecessary shaking of the trap.
8. Not as many crawfish per trap were dumped out as one might hope for. The students felt there was potential for larger yields per trap.
9. The Traps were relatively unattractive, not designed esthetically and according to the farmer didn’t last as long as one might expect. After three or four years the traps have to be replaced.
10. The traps took up a lot of room when stored during the off-season. They were not collapsible and did not have the ability to nest with each other for efficient storage.

And other facts they learned about crawfish in the field from experts that had an influence on the design of their traps.

1. Crawfish attract other crawfish while feeding from the bait.
2. Crawfish are attracted to sheltered areas such as the underside of tree stumps.
3. Crawfish are attracted to oily fish bate. (See Figure 4.)
The Crawfish Trap and Design Innovation

The students were required to isolate a problem that they had become aware of during the research phase of their project and test out a solution by designing a field experiment that would give them information with which to design. For example, if a student was interested in the fact that many Crawfish escape the trap by leaving the way they came in, he or she would design an experimental trap that would not allow this to happen. The students were told not to spend a lot of time in the making of these traps. The experimental trap was to be functionally built with the intent to prove or indicate a solution to an isolated problem.

We were rewarded profoundly with this exercise. The amount of design information that the students received from going out into the field and setting up a crawfish trap experiment was really remarkable. Not any of this experimentation that was so critical to their ultimate designs could have been performed if we hadn’t been in a crawfish-harvesting region. Much of information that the students brought back from the field found its way into their projects. (See Figures 5, 6, and 7.)

Presentation:

The following is a handout the students receive to help organize their presentation process.

Gathering information for presentation:

§ Locate all work to date and organize it. You should have:
1. Conceptual drawings (computer and hand)
2. Conceptual models (computer and hand)
3. Documentation of process
   A. Photographs of techniques used
   B. Process models, molds, drawings and other physical items that illustrate your process
4. Finished drawings and models
   A. Drawings of finished model
      a. Orthogonal and plan drawings (dimensioned)
   B. Photographs of finished model
   C. 3-d Rhino model of trap (printed and rendered in photoshop)
   D. Scanned images manipulated in photoshop
5. Written information
   A. Description of product
      a. Title
      b. Concept
      c. History
      d. Innovative aspects
      e. Interface
      f. Design

The presentation process (20 x 20 board)

Research sources:

§ Method
1. Create a hierarchy for your information. Remember this is an exercise in communication.
2. Make numerous 4” x 4” thumbnail drawings of possible board layouts (20 is not too many).
3. Bring the subject or concept of your project into the design of your board layouts.
4. Make 20” x 20” mockups based on your best thumbnails (quick and dirty)
5. Based on your class crits and your own evaluation improve upon your

Figure 5, 6, 7 - Students setting experimental traps.
mock-up.
6. Create your mock-up in color (quick and dirty).
7. Create your 20” x 20” board with Photoshop. Print it out cheaply in black and white and evaluate.
8. Tweak your 20” x 20” board, print and mount on foam core.

Conclusion:

The emphasis of this project was on the student’s formulation of a personal and discriminating approach to designing the crawfish trap. Because the project was indigenous to our area there were tremendous advantages with regard to collecting cultural environmental and functional information. The information collected was far more sensitive then if it were not experienced first hand. It is the contention of the author that good design happens in the presence of good research. This paper supports the argument that the best research is achieved at the local level pulling from the local environment and local culture. The students that took part in this project found that once they overcame the initial stigma that is associated with a local industry they were able to take advantage of the industries’ accessibility and bring first hand experiential information to their crawfish trap design.

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Worldviews and Student Development in the Beginning Studios

Unspoken thoughts and latent constructs are hallmarks of the beginning architecture design students’ inner world. They struggle with concepts of ‘self’ and ‘others’ in formulating and manifesting purposeful design project solutions. Marcia Baxter Magolda postulates that their stage of intellectual growth is part of a predictable journey toward self-discovery. Mary F. Howard-Hamilton suggests that the developmental environment may be enhanced through a culturally responsive community. How might instructors utilize developmental theories to promote worldviews and diversity in both beginning studio cultures and design projects?

Baxter Magolda’s (1992) Epistemological Reflection Model highlights four ways of knowing for the intellectual development of college students: absolute, transitional, independent and contextual. Each level is characterized by an increased sophistication in the understanding and application of information. In the sophomore year, beginning architecture design students are primarily transitional knowers who seek to understand knowledge, provide active exchanges with their peers, expect instructors to employ teaching methods that help in the application of knowledge and to be evaluated based on their understanding of the material (Baxter Magolda, 1992). In support of a positive curriculum delivery, Howard-Hamilton (2000) suggests five characteristics of a culturally responsive educational community supported by instructors: connect to human needs, reinforce the creation of meaning, create a community of learners, nurture a trusting environment, and treat students as equals.

Students’ own stories about experiences in the design studio reveal a struggle to apply ethnic, racial and cultural identity regarding themselves and others in their projects. However, the blending of ways of knowing within a culturally responsive community positively affects both how instructors teach and how students perceive. Students become innovational when acting upon thoughtfully presented information that is sensitive to their personal intellectual lens, thus the architectural design studio is enriched.
Unspoken thoughts and latent constructs are hallmarks of the beginning architecture design students’ inner worlds. They struggle with concepts of self and others in formulating and manifesting purposeful design project solutions. In the architectural studio, design problems demand a complete understanding of not only the physical project requirements, but also personal insights through a vision of what will genuinely fulfill the desires of the client. Students’ worldviews provide reference points of comparison for decision-making when solving a problem. However, worldviews are not easily accessible or understood due to students’ existing developmental levels. What directions should pedagogy take to promote worldviews and diversity in both beginning studio cultures and design projects?

Educational theories supply insight to potential approaches. First, the research of Marcia Baxter Magolda (1992) in the area of college student development highlights stages of intellectual growth as part of a predictable journey of discovery. As students progress through these stages or ways of knowing, they become increasingly aware of their own inner thoughts and value the opinions of others. These developmental stages affect creativity in student design projects. Second, the work of Mary F. Howard-Hamilton (2000) interlocks with the research of Baxter Magolda as it suggests that the developmental environment be enhanced through a culturally responsive community. This implies that instructors should actively encourage the students’ worldviews in the design studio. Both researchers emphasize the importance of students’ interactions as a pivotal activity that results in an expanded awareness of self and others.

To validate their research, interviews were conducted with three male African American architecture students. This is neither a large nor random sample, but was utilized to enrich the story of self, others, worldviews and self-authorship in the design process. Fries-Britt (2000) observes that a study of small distinct populations can still provide powerful insights into how learning takes place and how educational environments might be improved.

The Research Method

Upon hearing of my research, Baylor, Hunter and Maison volunteered to be interviewed regarding their worldviews and the architectural design process. All three are upper level architecture students. While the objective of this research is to focus on beginning design studios, I felt the students were developmentally sophisticated enough to reflect back upon their recent educational experiences and provide helpful insights. The resulting stories illuminate ways in which an awareness of personal culture may be both nurtured and incorporated into design projects at the sophomore level.

Each student interviewed was provided with a release form stating the research objective. The students’ identities remain confidential and pseudonyms have been selected. The conversations were tape recorded with their knowledge and permission for use in this research. Appointments were scheduled with each individual student and lasted between 30 and 60 minutes. I listened to their stories and compared them to developmental theories.

All three interviews took place in my warm, dusty office early in February 2004 amid piles of books jammed into shelves and student design projects stacked tightly against the walls. Every afternoon, the sun dimly filtered through the blinds and illuminated each eager and curious face. Armed with only one question, “How do you place your culture into your design projects”, I encouraged the students to freely express their thoughts and determine the course of the interview. Baxter Magolda (1992), in reflecting upon her own interview experience, suggests that the subjects be permitted to talk about what they felt was important. However, they all seemed to arrive at a point during their interviews where the word culture required clarification to continue. I referred to the description offered by Helms (1994) in which culture provides both broad and specific levels of identity including those that represent a society as well as race, ethnicity, customs, values, traditions and histories. I quietly interjected topics when their soliloquies stopped. “How did you become interested in architecture?” “Tell me about your family.” These questions provided further insight into their individual cultures. Additionally, the responses clarified the specific way of knowing that the student was using when sharing their stories.

Ways of Knowing and Diversity Theories

All college students experience a developmental sequence of awareness. Baxter Magolda’s (1992) Epistemological Reflection Model provides a framework that illuminates college student development through stages of ways of knowing. She describes students as interpreting or making meaning of “… their education experience as a result of their assumptions about the nature, limits, and certainty of knowledge.” (Baxter Magolda, 1992, p. 3) Four stages of knowing define the model for knowing by students: absolute, transitional, independent and contextual. (Baxter Magolda, 1992) The stages are further defined by how each gender accepts, interprets and communicates information. Beginning architectural design students, whether they are freshmen or sophomores, primarily fall into the absolute or transitional stages and this is where the discussion will remain focused. The Epistemological Reflection Model also recognizes fluctuations and simultaneous use in the several areas of knowing as well as specific gender patterns.

Absolute knowing for both men and women provides a recognition that core assumptions regarding knowledge is absolute and that knowledge resides in the purlieu of the instructor. (Baxter Magolda, 1992) When asked how he incorporated his culture into his design projects, Baylor commented, “…no one told me I could do that.” Maison reflects, “[I’m] usually just trying to meet the requirements of what to do. Teachers talk about design and how something should be done and not why. You never really think about culture being part of the design concept.” This perception of knowledge is most dominant in the freshman year and begins to

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taper in subsequent years. Teachers are expected to dole out knowledge in a clear and concise manner and students’ evaluations are based upon this precise acquisition. Students’ peers share information obtained from the teacher but do not consider themselves as legitimate sources of information. Students are on a quest for ‘right’ answers. Any discrepancies in information are viewed as variations in explanation on the part of the teacher and not genuine differences. Additionally, women function in the receiving pattern in absolute knowing while men function in the mastering pattern. (Baxter Magolda, 1992) These are generalizations and Baxter Magolda observed in her research that there is crossover between the patterns.

As receiving pattern absolute knowers, women primarily listen and record facts and information while men, as mastering pattern absolute knowers, demonstrate that they are interested in class activities and want to participate. Classmates talk to create a comfortable atmosphere if they are women and the men engage in debating and quizzing to help each other. The men expect the instructor to use interesting teaching methods. Women want more opportunities to demonstrate knowledge and be tested based on their knowledge of material while men examine feedback from the instructor as a means of improvement. Women accept a variety of opinions regarding information and when there is a discrepancy, they rely on personal interpretation. Men who observe differing degrees of detail in their studies resort to research and consult other authorities regarding the conflict.

In transitional knowing, students alter their attention to understanding information over simply acquiring it. (Baxter Magolda, 1992) Hunter demonstrates his developmental change by observing, “…it’s who you are and what you express. So be expressive in your architecture. I’ve been working on that…since my sophomore year.” Teachers need to correlate facts to real world experiences and create conditions that nurture learning. This parallels many design projects that incorporate real sites or clients. Also, sharing a common project across several architecture disciplines such as lighting, interiors and architectural design, builds team work skills and simulates professional working conditions. Evaluation is based on comprehension and not regurgitation. Projects replace tests in the design studio. Uncertainty is addressed by selecting processes that lead to decision-making with a diminished reliance on persons in authority. Emphasizing research over a banking education promotes self. Transitional knowing begins to appear in the freshman year, is slightly more prevalent than absolute knowing in the sophomore year and is most dominant in junior year. Women function in the interpersonal pattern as transitional knowers and men function in the impersonal pattern. (Baxter Magolda, 1992) Again, there can be a gender crossover to opposing patterns.

As interpersonal pattern transitional knowers, women are concerned with learning practical material and gathering opinions from others to assess ideas. As impersonal pattern transitional knowers, men prefer to understand concepts and not memorize them, and favor exchanges of opinion through debates. Women are predisposed toward a rapport with the teacher that includes opportunity for self-expression. Men favor understanding information accompanied by challenges. Baylor demonstrates that he wants a challenge, but also the opinion of the instructor in resolving problems, “I try to do everything outside of the box in terms of architecture. If something can’t be done, hopefully with a professor’s help, I can do a little more.” Women want to be evaluated based on individual differences while men desire fair evaluations that are practical. Uncertainty becomes a focus for women as they resolve it through personal judgment. Men are equally focused on certainty and uncertainty which they resolve through research and logic. Hunter reveals that he moved from an absolute knower to a transitional knower in his sophomore year, “From the start, everything is programmatic. Later on, the curriculum gets looser. The professors are a lot easier. You get to use more of your flavor or your taste.”

Absolute knowing and transitional knowing are the two dominant stages during the freshman and sophomore years with transitional knowing remaining dominant throughout the undergraduate experience. In absolute knowing, there is no reliance by students on their peers as purveyors of information. Students can not view themselves as possessing answers. Answers must be right and can only come from the teacher. There is very little opportunity for worldviews and personal culture to appear as part of a solution to a design project. In transitional knowing, the students begin to exchange information and opinions and relate them to problem-solving. Students consider the opinions of others as having potential value and actively communicate with each other to acquire it. When asked by their peers for an
opinion, they begin to view their own ideas as beneficial. However, worldviews and personal culture are not considered as potential resources when searching for design ideas; students are not developmentally ready to acknowledge them. Once an awareness of personal culture becomes apparent, students begin to knit together their culture with design problems as they search for solutions. Baylor and Hunter tell me how they believe they have incorporated their personal cultures into their design studio projects in the past. Baylor begins, “The first thing that comes to mind is color. When people think of African Americans they think of Africa…blues, purples, yellows. There were many different tribes and they all used different colors.” Hunter concurs, “Colors. I like color. Colors that say something…and are emotional. They’re signs of warmth and joy…and that reflects back on past times to slavery. [Colors gave them] comfort.”

Later, Hunter, who is the oldest participant and is furthest along in the architecture program, eloquently details how he has begun to link his culture with architectural design as a sign that he is progressing toward independent knowing. He reflects on two earlier design projects and comes to a linear awareness about the fluidity of space in architecture:

[The design projects were both about] togetherness. In history…African Americans say that all they could do was to hold onto one another. It’s important for us to get together. Things come together when they’re open. Even though there may be different spaces and different levels but once you experience the building…you see the spaces come together…they become a whole. One unit. That’s kind of neat! I never thought of that like this. The relationship. The progression of these ideas.

Baxter Magolda’s (1992) seminal research is confined to the discreet student population of Miami University and is affected by the characteristics present in the dominant white culture of the general student body as well as student and institutional cultures. As a foundational theory, it does not address cultural differences presented by diverse populations. To thoroughly understand their developmental levels and provide support for the awareness and application of worldviews, instructors must intertwine knowledge of the Epistemological Reflection Model with current research regarding learning and diverse populations.

Torres, Howard-Hamilton and Cooper (2003, 15) support McEwen, Roper, Bryant, and Langa’s nine factor model that incorporates African American culture into college student development: (a) developing ethnic and racial identity, (b) interacting with the dominant culture, (c) developing cultural aesthetics and awareness, (d) developing identity, (e) developing interdependence, (f) fulfilling affiliation needs, (g) surviving intellectually, (h) developing spiritually and (i) developing social responsibility. All three students spoke to these issues.

The story about their struggle to interact with the dominant white culture produces rich student stories and also addresses the development of cultural aesthetics, identity, interdependence, social responsibility and surviving intellectually. Baylor relays his experience about blending into a new class:

When I’m in a new class, at most out of 16 students, three are black. When I first came I saw…maybe one or two. We would mesh…we would congregate all the way down the [design studio] room….That’s one thing that we did was we all bonded quickly because you can put the model black students…in the palm of your hand. We are all pretty decent friends with each other.”

Hunter describes how black students support each other:

When we see other [black] people in architecture, we team up and help each other out. Because for the simple fact that some people don’t want to open up to me. They may know something that we may need or understand a little more than we may have understood. It’s easier to work together. That’s important too.

Maison is more subtle in his description and equates his classroom experience with growing up in Georgia, “Living up here…the people up here aren’t as nice. I prefer southern hospitality. You can run into somebody down there and not even know them and start a conversation.”

Pedagogy that Promotes Worldviews in the Classroom

The quest to achieve the integration of worldviews and self-culture in studio design projects calls for an understanding of self-authorship as defined by Baxter Magolda (1999, p. 6) as “…the ability to reflect upon one’s beliefs, organize one’s thoughts and feelings in the context of, but separate from, the thoughts and feelings of others, and literally make up one’s own mind”. Making up one’s own mind refers to students integrating their self-knowledge with that of knowledge communities to arrive at a deeper understanding of self. (Baxter Magolda, 1999) Furthermore, Baxter Magolda (1999, p. 6) concludes that “Teaching…becomes a matter of understanding and welcoming students’ ways of making meaning and simultaneously engaging them in a journey toward more complex ways of making meaning.” The following researchers make recommendations regarding effective pedagogies linked to Baxter Magolda.

Howard-Hamilton (2000) suggests that a culturally responsive curriculum be created to nurture classroom activities that promote worldviews. Baylor recounts a classroom experience that did not promote diversity, “In history class, we learned about European architecture, American architecture, Chinese architecture but not our culture.” Howard-Hamilton (2000, p. 50) concurs with Kitano (1997) and her three tiered course change model that exists in classrooms: (a) level one, the exclusive course where the
instructor maintains a banking strategy of receiving, memorizing and repeating information; (b) level two, the inclusive course where the instructor introduces new viewpoints without elaboration; and (c) level three, the transformed course where the instructor challenges the students to think about diversity topics. It is the transformed course change that will create opportunities for a diverse educational environment that promotes an understanding of personal culture and respect other groups and opinions. This is the result when the power and privilege of the instructor in the classroom as well as the banking education model is modified in favor of student reflection. (Howard-Hamilton, 2000)

Kitano’s ideas are supported by Torres, Howard-Hamilton and Cooper (2003) who recommend that faculty redesign their courses to reflect diversity and to accomplish this, faculty first need to be secure in their own multicultural points of view. The instructor’s attitudes and values are mirrored in their teaching and consequently, influence the attitudes and values of their students. (Hurtado, Milem, Clayton-Pedersen & Allen, 1999) In the design studio, instructors must reflect both by behavior and speech, respect for and understanding of diversity. When the students are comfortable, they are more likely to express their true feelings, right or wrong, in an atmosphere that is not judgmental. It is clear that class discussions lead to thinking and learning about diversity.

Baxter Magolda (1999, p. 9) verifies the research of Kitano and Torres, Howard-Hamilton and Cooper with her recommendation that “…teachers model the process of constructing knowledge in their disciplines, teach that process to students, and give students opportunities to practice and become proficient at it.” Howard-Hamilton (2000) endorses revised classroom norms:

Designing a curriculum that is culturally responsive should include the following norms (Wlodkowski & Ginsberg, 1995): 1. Coursework that emphasizes a connection to human need or interest so that the students can feel a part of something that is relevant to them, 2. Teachers who are collaborative with the learners by helping them understand the creation of meaning and the virtue of their own thinking, 3. Students working together as a community of learners, 4. Students and instructors assuming a blame-free and trusting belief in people and their potential to be transformed, [and] 5. Students being treated equally in the classroom and invited to address behaviors, practices, or policies that are prejudicial. (pp. 50-51)

The students made recommendations regarding culture in the classroom. Baylor suggests a way to break the ice and begin to create a community of learners:

The teacher could do things to get us out of our comfort zone. Stand up [and] say ‘Hi, my name is…” Things like that. Sometimes you might catch a student fumbling on words. It’s fun. Just the fact that you’re sitting next to other students.

Baylor presents a reason to integrate culture in course work, “I’ve never heard [teachers talk about] it [culture]. I think it is important [to talk about] because it give you that extra boost of confidence.” Hunter reflects, “First of all, [teachers] mentioning it [culture]. I think it’s important to say. This is the first time I’m talking about it. I wonder what I would do consciously thinking about it in my projects.” Maison makes the connection between appreciating culture and its application to the profession, “Culture should be specifically talked about. [These same ideas] would apply to a client. You would find out their interests, history, thoughts and ideas. Then make some sketches.”

In addition to the application of developmental and cultural theories in the classroom, there are two approaches that will lead students to think specifically about their worldviews. First, the students have already suggested that group discussion is an appropriate approach to lead a class toward thinking about their own personal culture. However, the language used by the teacher to explore a student’s inner world needs to be specific. The scientific question is always what and not why. The question, “Why have you done this”, will more likely produce defensive excuses. The question, “What have you explored to arrive at this conclusion”, will result in thoughtful narrations that may lead to student self-revelations.

Second, the one-on-one interview process suggests an alternative approach to achieve cultural awareness in the classroom. I have consistently remained in awe of the interview process as a venue to teach the very topic I am exploring. It has been my experience that with
one explicit question, a student begins his or her monologue that twists and winds its way to a new awareness. Each student injects his or her own truth to the topic at hand and enriches it with personal stories and references. I am always honored to be the recipient of their stories. Their conclusions are remarkably similar; there is an awakening. This qualitative approach is strongly supported by Baxter Magolda in her research. A variation of the interview approach might be explored in the classroom as a new teaching strategy.

Robert Grudin states, “To learn is not merely to accumulate data; it is to rebuild one’s world.” (1990, p. 152) After reflecting upon their subsequent narrations, these three architecture students became acutely aware of each of their own individual cultures and only then, understood the implication of the original question. A very slow “Ahaaaa!” escapes from Baylor’s lips. “I never thought of putting my culture into my design; no one ever told me I could.” Baylor shakes his head in pleasant surprise at the revelation. “I’ve always known that my culture is my African side but it’s my LOVE! I can incorporate everything!” Hunter has a similar experience. “[This is] the first time I’m talking about it [culture] now. I wonder what I would do consciously thinking about it in my projects.” He looks away to some unknown point in the room. Maison reflects, “[As far as culture is concerned], I never thought of using it that way.” He quietly stares at my empty desk. Baylor solemnly concludes, “This has been a moving experience.” The awareness that culture is a legitimate source of inspiration for architectural design and personal growth becomes a startling and common conclusion.

REFERENCES
The Postcard Project:
The Role of Ready Made Objects in the Design Studio

A well crafted basswood model and a beautifully rendered drawing on good quality white paper have been traditional sites for the dissemination of architectural knowledge. This essay compares these sites to other representational models, such as the montage of ready made objects. Walter Benjamin and the Surrealists offered two critical models for dealing with the discarded and overlooked objects of the everyday world: the former is based on historical awakening and collective dreams; the latter on individual dreams and making familiar objects strange. The Core Design Program at Iowa State University embraces these unconscious models through its interdisciplinary art and design strategies of “making strange.” The Core Design Program opens with the Postcard Project, an introductory learning experience centered on the (re)production of the space of a postcard within a small box. Reflecting on the Postcard Project, this essay examines intersections between theories of representation and modes of instruction within a design studio. These intersections are explored based on a dialectic of whiteness and grayness: a whiteness that is embodied in labor intensive drawings and models from the Beaux-Arts tradition, and grayness, embodied in the diversity of found objects.
Let a ready-made reality with a naïve purpose apparently settled once and for all (i.e., an umbrella) be suddenly juxtaposed to another very distant and no less ridiculous reality (i.e., a sewing machine) in a place where both must be felt as out of place (i.e., upon a dissecting table), and precisely thereby it will be robbed of its naïve purpose and its identity; through a relativity it will pass from a false to a novel absoluteness, at once both true and poetic: umbrella and sewing machine will make love.¹

Introduction

All first year students enrolled in the College of Design at Iowa State University go through a Core Design Program—a two-semester common learning experience derived from the collaboration of a breadth of professional design and art disciplines within the College. In 2001 the college community engaged in an envisioning process of self-reflection and emancipation of its programs. Central to this envisioning process is a substantial revision to the introductory design education, and the development of a Core Design Program as an integrated course of study for all first-year students enrolled in the College of Design. Aspiring to develop a unique interdisciplinary core program, the College wants to prepare its graduates to influence innovations in science and technology through integration of design.

At Iowa State University, core design studios meet twice a week for three hours each time, in section groups of about fifteen to eighteen students. Core courses are open to all university students aspiring to apply to one of the professional programs within the College of Design: architecture, city and regional planning, graphic design, integrated studio arts, interior design, and landscape architecture. In order to better serve the needs of such a diverse student body, the core design studio focuses on the commonality of design processes and methods across various design disciplines, while at the same time addressing a broader range of history, theory, and criticism issues. The studio experience is therefore complemented by a one hour lecture each week, in which instructors introduce various theoretical discourses of the twentieth century. Like the students themselves, the faculty members also come from all four departments within the College of Design, thus creating a truly interdisciplinary learning experience. The Core Design Program is staffed by teachers with multidisciplinary interests, not necessarily in the realm of beginning design education, but capable of a vertical integration between the first year and subsequent professional programs, providing unique opportunities for academic advancement. The studio projects and lecture vocabulary are developed through a carefully constructed common language that is able to overcome the boundaries established through disciplinary specialization. Standing against this endless fragmentation—sub-specialization, autonomy, and economic rationalism—the Core Design Program seeks to embrace synthesis, rather than division; it seeks to expand the scope of beginning design education through a critical interdisciplinary inquiry. (See Figure 1 and 2.)

The Postcard Project

The first project that students encounter in the Core Design Program is the Pattern Project,² in which they analyze a common household tool through a variety of media—drawing, writing, and model making—until they feel they know it intimately. This project is followed by the Postcard Project, a three-week learning experience centered on the (re)production of the space of a postcard within a small box. First, the students are asked to purchase several vintage postcards and to discuss the visual language of the postcards and how it relates to the production of the built environment. Issues discussed include regional identity, modes of production, human inhabitation, and booster photography. After selecting the most intriguing postcard, the students use it as a departure point to design a three dimensional container of space which will serve as a three-dimensional postcard from Iowa. Unlike traditional postcards, this is an unconventional greeting device that they can send to their families or friends. Each box should contain at least one popular picture postcard of Iowa (or the student’s home state) and at least three found objects that are either from the space of the postcard or have some kind of relationship to the postcard itself. Those found objects should be ready made objects—objects that are found on a highway, in a rest area, in a fast food place, in an alley, in a back yard, on campus, or in a mall. Since the box is rather small, the students may be able to use only a fragment of their found objects or reproductions of those objects (such as photocopies or scans).

The wooden box itself is strictly defined, measuring 8 ½” in width, 11” in height, and 5 ½” in depth. It is made of 1”x6” standard lumber (such as F.I.R.). The connections are
achieved with white glue, carpenter’s glue, or finishing nails. The container itself is NOT the subject matter of this design project. Rather, the focus is on the careful reading of a postcard and the three dimensional elaboration of its forces within the box itself.

In the first phase of the project, the postcard is carefully read, its imagery dissected, and meaning analyzed through critical discussion. Students are asked to define:

- How is the urban or rural environment depicted in the postcard reflective of social and economic forces?
- Which postcards are actual representations of a site and which are metaphorical representations?
- What is the relationship between regional identity and its imagery?
- Define how stereotypical the postcard is—what is missing in it, how real it really is—and, what are the unheard voice not represented in the postcard? (See Figure 3, 4, and 5.)

This discussion isolates the postcard from the superficial consumer culture of the everyday, transforming it into an academic object of study. The postcards are taken seriously, revealing a multiplicity of meaning through intersections of visual, material, and cultural relationships. In the second phase of the project, the students are asked to communicate this multiplicity of meaning through a carefully crafted composition of ready made objects placed within a box. The compositional strategies of montage, collage, and “making strange” are discussed in the studio and lecture. For many students, the notion of taking a postcard seriously represents a significant challenge. In order to facilitate this transition from the everyday reading of the postcard, to a more critical reading of it, the lectures introduce various strategies for the appropriation of popular picture postcards in architectural culture. Two postcard collections are examined as precedent studies, namely those of Rem Koolhaas and Alvin Boyarsky, Koolhaas’s teacher at the Architectural Association School of Architecture, and the strategies of their dissemination in the work of those architects are discussed.

Deriving from theories of collecting and popular representations of cities, we recognize postcard collecting as a valid form of writing architectural history. Reflecting the city’s economic and social context, when postcards are displaced from the context of consumer tourism and placed into architectural discourse through their revalorization, interpretation, and juxtaposition with other types of urban imagery, they generate meaning through the new discourse around them and offer many possibilities for criticism and appropriation. Such images are representative not only of the sights they depict, but they also speak through what they leave out. This anonymous yet carefully assembled history is revealed through juxtaposition of postcards with other popular images, such as newspaper clippings and photographs. Through their arguments from silence, these montage strategies tell a history of social conflicts which moves beyond the traditional vision of modernity based on economic, social, and technological progress. In the final phase of the project, the students are asked to collect found objects that further elaborate those arguments from silence.

The students are encouraged to look at these ready made objects as strangely familiar artifacts—objects that have familiar form and a function that is somehow questionable or at least changeable and culturally constructed. The insistence upon meaning is again critical, as students are asked to negotiate between the message of the postcard and the message of their box. This requires constant oscillation between the flatness of an image and the volumetric of a spatial container—such as the wooden box. In addition, students are challenged to capture the viewer’s imagination through a metaphorical narration based on found objects. The rules of the game prohibit the use of commercial miniature objects, such as little trucks, toys, and vegetation available at large commercial chain stores. This is the culminating phase of the project; the students are looking for their design vocabulary within the discarded objects of the everyday. The basic three dimensional compositional principles and a careful selection of the most appropriate objects are introduced as powerful tools for telling the story of the project. (See Figure 6 and 7.)

**Learning outcomes**

Learning outcomes represent an educational approach increasingly deployed in the accreditation of professional programs. They represent a cultural change—a shift away from the traditional teaching content and objectives (knowledge and skills) toward learning...
outcomes as measures of student learning. The goal of the Core Design Program is to offer opportunities for students to acquire the knowledge, skills, and life-long intellectual curiosity that will help them become more aware and productive citizens. The project-based learning environment ensures a critical level of invention, awareness, and self-direction, while at the same time, directing our inquiries toward a particular social, economical and ultimately cultural context. The cultural relevance of the project is developed through the postcard itself—a site-specific interactive visual medium that reveals layers of natural and cultural influences. Although fairly short in its duration, this project nevertheless represents an important site of learning for the beginning design students. They learn how to read interactive visual media, such as the postcard, and to construct a meaning based on that reading. They also learn that the meaning might or might not be completely accurate, i.e. that there is nothing scientific about the way we visualize the built environment. The majority of images represent cultural constructs, which are in many cases important sites for discourse on identity and the importance of difference in a multicultural society. The project oscillates between formal and analytical principles, on the one hand, and the creative and impulsive drives of a young designer on another hand. Within this friction between the analytical and the creative lies invention—a design strategy based on creativity and rooted in the careful reading and dissemination of meaning. (See Figure 8.)

Conclusion

The Postcard Project explores intersections based on a dialectic of whiteness and grayness: a whiteness that is embodied in labor-intensive drawings and models from the Beaux-Arts tradition, and grayness, embodied in the diversity of found objects. It explores issues of visual order and strategies of avoiding formal chaos within a simple three-dimensional container, while at the same time introducing the paradoxical strategies of “making strange”—the estrangement of everyday objects and the questioning of the often uncritically accepted visual connotation and use value that is associated with them. This estrangement is used as a way to learn about the complex relationships that shape our built environment, its forces and their representations in popular picture postcards.

This strategy does not represent a novel finding. It is derived from a long history of modern discourses that have sought to displace objects from our everyday lives into a dream-state condition, thus inhabiting a magical and critical form of urban imagination. The Surrealists called this condition ‘estrangement’. Estrangement consists of, on the one hand, ‘enchantment’—the experience of the city as a redeeming, liberating world—and, on the other hand, ‘alienation’—the experience of the city as a debasing, oppressive world. Walter Benjamin elaborated further the surrealist project of liberation:

“Since Bakunin, Europe has lacked a radical concept of freedom. The Surrealists have one. They are the first to liquidate the sclerotic liberal-moral-humanistic ideal of freedom, because they are convinced that “freedom, which on this earth can only be bought with a thousand of the hardest sacrifices, must be enjoyed unrestrictedly in its fullness without any kind of pragmatic calculation, as long as it lasts.”

The Postcard Project attempts to achieve this concept of freedom, by revealing the multiplicity of relationships that shape our built environment. In doing so, it embraces the diversity of everyday media—such as the postcards—reading them as cultural constructs that generate meaning not per se, but through a discourse around them. The project also traces back the missing script in these media, thus questioning the modernist omission of minority cultures, immigrants, migrant workers, etc., and their non-representation in everyday imagery. The Core Design program embraces human diversity by bringing together students and faculty from diverse disciplines and mobilizing them around greater cultural and social causes. Finally, the use of ready made objects as a valid design medium displaces the production of the work of art outside traditional institutions—namely in the public realm of the everyday life—thus extending the liberating aims of the historical avant-garde. Peter Burger made a distinction between the art institutions and the institution of art, in which the former are only a fragment of the latter. A similar analogy can be applied to design; the Postcard Projects aims to disturb the perceived and institutionally received notions of design by introducing critical questions and diverse media as valid forms of studio production in the beginning design education.

Acknowledgments

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NOTES

1 Max Ernst, “Comment on force l’inspiration,” le Surrealisme au Service de la Revolution 6 (May 15, 1933): 43-45. Translated and adapted by Dennis Raverty.
Normalization through Education:
A loss of Culture and Identity?

In San Antonio we are blessed with a demographic unlike most typical American cities. The south of Texas provides us with a student body that is largely Hispanic. For many students this is their very first experience in America, having just relocated from smaller towns in Mexico. Others are first generation Americans raised in traditional Mexican families. While multi-cultural student bodies are not unusual within a university setting, the number of such students is typically small and their particular ontology is easily sublimated to the larger whole. In other words, we often teach to the majority or teach to our own ontology without regard to the potential normalizing effect of such methods.

Upon coming to UTSA, I found myself in a studio setting that presented a significant cultural difference. At first, I thought it was business as usual, teaching to a curriculum that seemed tried and true. But, I soon began to suspect that the sense of difference that I had noticed somehow extended beyond the borders of any qualitative understanding. This started me thinking, is there a measurable difference between how other similar, but yet different, western cultures come to understand the built environment? Can a Hispanic ethos be made manifest through the design of young Mexican students if left to its own? Or, would it be lost in American academia by way of a self-referential pedagogy?

Looking at issues of scale, functional organization, materiality, permanence, and community, this paper will explore the cultural territories of a contemporary architectural design education. It is my position that local or site-specific vernaculars, whether predicates of indigenous forms, materials, or traditions etc., should be recognized and maintained as a means not only for greater architectural expression but equally as a conveyance of both culture and identity.
Introduction

Not knowing exactly how to go about assessing any such culturally specific design tendencies, I had to start by assuming that there was indeed a measurable difference. With that assumption, I set out to determine whether these tendencies were understood and administered consciously, or simply applied instinctively - if at all. I started my investigation by way of a design problem predicated on one of the basic components of architecture i.e. the “wall.” Ideas of borders and boundaries are often understood to have cultural antecedents and the study of the “wall” represents a scale that is relative and manageable. In this project students were asked to consider their place in the world and explore how they as individuals come to understand and administer the process of design.

Project Statement

“Walls have been the principal architectural agents of the dichotomized mentally of either/or, timeless or temporary, public or private, visible or invisible, speakable or unspeakable.” Patrick Pinnell

“At times walls manifest a power that borders on the violent. They have the power to divide space, configure place, and create new domains. Walls are the most basic elements of architecture, but they can also be the most enriching.” Tadao Ando

It is said to be a fundamental premise that Western thought and “permanent” enclosing walls have reciprocally formed each other. Medieval walled cities were created for safety; property lines/walls/fences were intended to define what is yours and what is mine. Territorial markings of tribes and community colors, all work to define who we are and where we come from. Other boundaries are less tangible; they permeate the space around us in invisibly layers that unknowingly guide us through our lives. Issues of physical size, skin color, sexuality, culture, religious, or political beliefs are also at work defining who we are.

As we begin to design the world around us these issues, coupled with our own unique ontology, work to give shape and form to what we create. In this exercise students will be asked to consider all such boundary conditions in temporal, situational, and social terms. Students must consider what actually constitutes such boundaries i.e. their form, site, and program. And, must work through the predispositions of their respective clients i.e. themselves.

Individual studios will work independent of each other in more specific terms, as defined by each studio professor. The success of this project lies in the ability of individuals and groups to create an environment that works to more clearly define who we are as individuals while equally and effectively situating itself within the larger context and idea of community.

Process and Preconceptions

This project was intentionally developed to help provide a clearer understanding of what students actually knew about themselves, their culture, and identity. It was meant to detect tendencies or traits that were at work guiding individuals through the early stages of the design process. Many had never really thought about their own ontology and when asked to do so, none could truly assess or explain what if any predilections they possessed. As is the case with so many of us, these students had never been actively aware of themselves or their surroundings, in any way that would now pertain to the process of design. Most had never really engaged their culture or traditions from a conscious position of knowing how that might affect their perceptions, pre-conceptions, and preferences.

Not wanting to lead or bias them, by way of an extended discussion on the issue of culture and identity, I decided to begin the design process offering only a modicum of direction. From the results of this exercise it could be said; if students demonstrated any pre-conceptions at all it was the tendency to design toward an American standard or ideal. It was evident that most were trying to design within the context of western popular-culture. In fact when asked, many said they had come to America specifically to learn how to design in just that way. Few embarked on any kind of independent thinking and for the most part looked outside themselves for direction.

This outcome seemed to suggest that these students, as with most fundamental design students, learn most effectively when being lead. At this particular stage in their development they don’t yet possess the skills and abilities necessary to put forward their own ideas in an architectural form. And therefore, most are not in a position to begin to assess the extent at
which the predisposition toward a particular set of design elements, ideas, or ideals might affect their design. The problem, one seemingly inherent in the architectural education process, is that by the time students are able to communicate through architecture they have already been indoctrinated into the architectural ways, stylistic genre, and ideological dogmas of their professors.

I am sure there are many other ways to look at this issue and for the most part there are similar conclusions that can be drawn about the contemporary education of an architect. My goal however was not to put forth a polemical argument against Architectural academia, it was simply to find a way to better understand the implications of my own teaching, as it affects individuals outside my particular ontology.

Culturally Specificity

If culture and identity are indeed the predicates of place, and one’s sense of self is determined by one’s place in the world, it would seem important to consider the origins of each student and the architecture specific to their culture when trying to develop a pedagogical position. It is our responsibility as educators to structure our design instruction in such a way as to draw from a student’s own background, to carefully and consciously bring each individual to an understanding of design through their own set of values and traditions.

“...What appears to influence most the form of dwellings and their attendant space is the vision held by a people. Built forms, including houses are symbols in a system of visual communication of that ideal. In any culture, the forms that communicate symbolically are specific and may include only selected elements not the sum of human-made or natural artifacts. Once constructed, built forms have a permanence that imprints on and influences future generations, even though the current generation may not know the reasons for past constructions.”

After looking more closely at my surroundings I discovered that there were several unique architectural elements at work shaping local Hispanic communities and their architecture, all of which have contemporary antecedents in Mexico. The colors, forms, materials, textures, spatial organizations, and specific geometries of architecture within these communities, serves purposefully to maintain the unique culture and the identity of these people. The aforementioned principle elements are often referred to as “Arquitectonica.” While there are other more numerous characteristics at work in the shaping of these environments, these elements are found consistently in Hispanic communities throughout the country constituting an explicit system of preferential selection. Social and historic influences have lead to a specific predilection toward primary geometrical forms, polychromatic colors, elaborate textures and patterns. Upon entering such a community one might notice “several patterns that suggest a peculiar Mexican-ness; the almost continuous extent of front property enclosures through a variety of fence and wall types, and a sometimes riotous use of brilliant colors on the house exteriors.” Anthropologists have argued that the recent peasant background of many Mexican Americans in the southwest contributes in large part to the persistence of such traditional folk-behavioral patterns.

Elements of Design

The circle and square, and their 3-dimensional derivatives, can be seen in both historic and contemporary Hispanic designs. Geometry serves not only as a proportional element but also as a method by which to locate windows and doors, and as a system for laying out ornamental patterns. Colors like purple, blue, yellow, and turquoise, which once held symbolic meaning now simply reflect the desire within these communities to maintain a sense of identity. Traditional plasterwork, painted murals, and pattern tile work used on many Hispanic structures, offer a substitute for the desire of rich natural materials such as marble, onyx, or cantera. Ornamentation also plays a significant role in the expression of these buildings.

The disposition of space and functional organization has specific cultural precedence as well. Historically, Hispanic residences were inwardly focused designed with a courtyard or a perimeter wall. The functional layout was not only situated along very distinct public and private lines, but equally along both social and gender based divisions i.e. the kitchen still remains the wife’s domain where social interaction with her friends takes place.
It should be further noted that there are also culturally specific differences with respect to issues of permanence and mobility. Unlike the mobile existence of their western brothers, the Hispanic culture is still very regional in character. Family is very important and children seldom move beyond their own neighborhoods as adults. Many Hispanic girls often do not accept scholarships to universities outside their communities because it would require leaving their family. This regard for permanence manifest itself in what they build and where they live. The idea of permanence therefore, becomes an important element for consideration in their design process.

Conclusion

All of these traits can be traced back through Europe and the Middle East, and most are the predicates of social or religious values and beliefs. As a series of archetypical elements they strengthen the Hispanic culture by providing a greater sense of identity. Though, too often they are overlooked or marginalized by people outside the Hispanic culture. Hispanic students themselves sometimes don’t see the value in such an architectural heritage and opt instead for the fashionable trends of their newfound peer group.

It is important to understand the value of these cultural bias and/or predispositions. If we are to successfully impart the knowledge of design and architecture to our students, we must be aware of the processes at work shaping their ideas. Working with students of a different ethnic, social, or religious background requires that we sometimes look outside ourselves for the answer. I have learned a great deal from my students about culture and identity as well as about myself. The dialogue of difference fostered by teaching in San Antonio has already begun to find its way into the development of design projects and has enriched the experience for all of us. From the standpoint of contemporary architectural education, the specific set of design elements associated with the local culture suggest a more formal and traditional way of approaching design. Since our curriculum combines a four-year bachelor degree with a two-year master degree, there will be plenty of opportunity for students to seek out contemporary theory and design if they are so inclined. It is my hope that fundamental design students through a greater awareness of themselves can develop a better appreciation for the process of design, one that resonates more soundly within their own ontology.

REFERENCES

Harnessing Diversity through Integrating and Improving Upon the Work of Others

This paper examines the pedagogical implications of beginning design students assimilating, enhancing and ultimately celebrating the work of their classmates and other designers. Tom Peters, author of *In Search of Excellence* and *Thriving on Chaos*, calls this process of integration and enrichment “creative swiping” which he champions as an essential ingredient for successful innovation. Charles Moore described a similar process as “playing chicken with a master.” Using Peters and Moores’ accumulative design methods as a model, portions of studio time are dedicated to the development of fellow students’ designs. During this time, students can momentarily step-out of their own work and view the project from a fresh perspective. In using various forms of this method for 5 years, I have found that the more talented students assume the role of teachers, which helps them become more articulate, while slower student’s learning rates accelerate. Additionally, the less talented students find validation in their ideas because their enhancements contribute valuable insights. The process also helps beginning designers loosen their egocentric grip on the preciousness of their own designs (what Peters calls “the not invented here syndrome”). This helps create empathy towards the validity and diversity of other students’ ideas which prepares them for upper level team projects. As the semester progresses, the class as a whole starts to take-on the diverse and dynamic characteristics of what systems analyst Peter Senge calls a “learning organization.”
...uniqueness most often comes not from a breakthrough idea, but from the accumulation of thousands of tiny enhancements.” Tom Peters

Introduction
Conferences like these allow us to share a diverse range of ideas and give us a chance to compare and perhaps improve upon each other’s work. Similarly, teamwork can be described as a phenomenon where a diverse group of people play off each other’s talents to achieve a greater goal. Systems analyst Peter Senge would call this synergy the beginnings of a “learning organization” resulting in the group’s IQ far exceeding the IQ of the individuals.

Beginning design studio provides many opportunities for students to play off each others talents in order to achieve a higher level of design. However, desk crits and final reviews limit these opportunities due to their infrequency and lack of peer review. This paper argues that beginning design should provide a richer venue for knowledge exchange where pin-ups are frequent and students are given the opportunity to work on each other’s ideas. This venue harnesses the tremendous impact that peers have on each other and provides a forum where a wide range of ideas can be shared frequently by all levels and varieties of talent. The outcome of this process broadens and diversifies student’s limited design vocabulary; celebrates and expands upon each individual’s unique talents and helps loosen student’s grip on the preciousness of their own work.

Tom Peters, author of *In Search of Excellence* and recent AIA keynote speaker calls these methods of idea exchange, “creative swiping.” In his book, *Thriving on Chaos*, he devotes an entire chapter to this concept which he asserts is how most progressive companies innovate and stay ahead of their competition. In the chapter summary he writes:

In today’s ever-accelerating business environment, you must: put NIH (Not Invented Here) behind you—and learn to copy (with unique adaptation/enhancement) from the best! Do so by aggressively seeking out the knowledge of competitors (small and overseas, not just tired old foes) and interesting non-competitors. Become a “learning organization.” Shuck your arrogance—"if it isn’t our idea, it can’t be that good” – and become a determined copycat/adapter/enhancer.

Historical Creative Swiping
From a historical perspective, creative swiping occurs frequently. In Roxanne Williamson’s book, *American Architects and the Mechanics of Fame*, she describes how the majority of influential American architects worked under notable architects. In many cases, these architect’s early works took on similar design traits as their former employer’s. Take Frank Lloyd Wright for example. His ornamental freeze on the Winslow house is hard to distinguish from what his employer Louis Sullivan would have created. Sullivan, in turn was influenced by the complex ornamental patterns of his brief employer Frank Furness. From Wright’s prairie style, we see influence from Japanese buildings and paintings. In his German Warehouse project, he nearly copied the ornament and proportions from the Chicago Worlds Fair replica of the Temple of Uxmal. From Wright forward, we see his mark on his protégés Griffin, Schindler, Dow, Lautner and Jones. If we look at Wright’s influence outside America, we know that Gropius, van’t Hoff, Mies and Rietvelde adapted and enhanced different parts of Wright into their own designs. Wright in turn improved upon these Europeans’ work which resulted in Falling Water with its unique adaptation of the de Stijl’s intersecting and floating planes.

Recent examples of creative swiping are present in the design processes of Charles Moore and Rob Quigley. Moore used to describe a method of creative swiping where students play a game of metaphorical “Chicken” with a master. For the neophyte, s/he closely imitates the master until time comes when the student pulls away at the very last minute leaving behind the master to look like a pale imitation. (Keim) A more bottom-up example of Moore’s creative swiping occured with his clients and students. In his graduate studios, he, like many professors, used the class to incubate his own ideas. As a student of Moore, my class provided ideas for his upcoming book *Chambers for a Memory Palace*. However, Moore was better known for his method of piggybacking off the design ideas of client participatory groups. As a student intern, I watched in amazement as he turned what were thought to be crude and garish client ideas into engaging designs.
Rob Quigley of San Diego is also known for enhancing the design ideas of participatory client groups. Additionally, he plays off the design ideas of his fellow San Diego architects. This was recently demonstrated in his design process for the San Diego downtown library commission where he sponsored workshops with the community and a short design exercise with San Diego’s most respected architects: Ted Smith and Teddy Cruz among others. After absorbing this input, Quigley then borrowed upon the ideas of his San Francisco based collaborator Kathy Simon of SMWM. In their design process, Quigley and Simon first worked separately on their own individual designs. Then the two traded their solutions and each worked on improving the others’. They continued this swap a number of times until the final product emerged.

**Beginning Design Studio as a Learning Organization through Creative Swiping**

Creative swiping methods can be implemented several ways in the beginning design studio. Through frequent pin-ups, precedent studies, transformations of precedents and design swapping, students can benefit from multiple exposures to different design solutions. Creative swiping is greatly accelerated through frequent reviews. Pin-ups at the beginning and end of class regularly expose students to a diverse palate of design solutions. For these reviews, the drawings speak for themselves without further explanation from the student. Fifteen to twenty minutes is devoted to commentary by both students as well as teacher where the majority of remarks focus on the characteristics of well executed designs while typical mistakes are given a few minutes time. After commentary, students are then given five minutes alone to closely examine their classmate’s solutions.

As early Wright creatively swiped from Sullivan, students are also encouraged to abstract and enhance from an influential designer. This is fostered in two quick exercises where an existing plan, section or component detail from an architect is transformed into a graphic or pavilion. The first exercise takes one studio period and involves building-up the plan of Mies’s Brick Country House into a sculptural pavilion. The de Stijl plan serves to break students away from thinking about architecture in terms of box-like spaces. Afterwards, students are shown Mies’s solution ... which pales in comparison. The second exercise calls for the abstraction of a master architect’s plan. This project is an adaptation from Vladimir Tatlin’s series of sculptures in the late 1910’s which transformed Renaissance Madonna paintings into a modern sculptural gestalt. Similar to Tatlin, students are immersed into the fertile soil of a master architect’s floor plan or section where they quickly discover and transform its underlying composition into a black and white graphic.

The third way students absorb ideas is through trading their project with another student, just as Quigley and Simon exchanged their designs for the San Diego Library. This helps beginning designers loosen their grip on the preciousness of their own designs (what Peters calls “the not invented here syndrome”) and may help create empathy towards the validity of other students’ ideas. When work is traded with other students, both the talented and less talented are given the chance to contribute interesting ideas and enhancements. As Tom Peters points out ...the average person can be of great service, if he or she is given a mission, a sense of urgency, and a forum in which to be heard.” So in the case of design swapping, both the talented and less talented are urged to become teachers and to provide an alternate direction.

All these methods allow the class to behave similar to what Tom Peters and systems analyst Peter Senge call a “Learning Organization” Here everybody has a voice and everyone is able to contribute. These learning organizations, whether they be companies, clubs or classes, are where people continually learn how learn together. From this, the work of the class outperforms the work of the most talented student.

Since this process requires few desk crits, class size is not critical. In many cases a larger studio guarantees a better outcome. This may be because students are exposed to more design options and the odds are in favor of capturing a critical talent mass. As a result, this greater talent pool provides more opportunities to point out the characteristics of excellent design. However, the talented and the swift do not always create the most exemplary work, for on many occasions, slower and more methodical students will produce exceptional solutions which are also spotlighted.

**Conclusion**
The romantic notion of the original genius designer is a fantasy in today’s team design climate. Systems analyst Peter Senge reinforces this notion when he writes:

“It’s no longer sufficient to have one person learning for the entire organization, a Ford or a Sloan or a Watson. It’s just not possible anymore to “figure it out” from the top, and have everyone else following the orders of the “Grand Strategist.”

Senge refers to a similar statement made by quantum physicist David Bohm in his book *The Special Theory of Relativity*: “Since thought is to a large degree collective, we cannot just improve thought individually. As with electrons, we must look on thought as a systemic phenomena arising from how we interact and discourse with one another.”

When the studio behaves like a learning organization, a dynamic is created that is both diverse and pleasantly unpredictable. As a result, project outcomes and class morale are high. Although a large part of this methodology is borrowed from the unlikely and seemingly dull field of business management, through the adoption of this learning model, design teachers can better harness the infectious creativity that lies within a diverse range of student talent.

REFERENCES
This paper investigates how the set of assumptions about student knowledge and cultural identity shaped the beginning architecture design studio pedagogy of Katia Borges, a UC Berkeley adjunct professor (and practicing architect) that I observed and interviewed in the late 1990s. Katia’s own descriptions of the relationships that emerged between herself and three of her beginning design students (Ernesto, a Latino male, Julia, an Asian woman, and Catherine, a White woman) will be used to explore the complex interplay between her Brazilian identity, her professional identity, and her explicit attempt at encouraging her students to explore their own cultural identities and personal inner selves within their designs. Recorded descriptions of her own interactions with three students will depict Katia’s approach to challenging her students to “let go of convention and invent original design metaphors based on personal and cultural identity.”

Within the narrative of her experiences in the beginning design studio, Katia emphasized her interest in “nurturing” her students’ capacities for “working independently” by validating and supporting their inventions of their own original vocabularies for talking about, and making, their designs. She told me that she looked for moments when her students would argue for their designs based on their own ideas. These “moments of conviction,” as she called them, were indicators that a student’s “designer’s personality” was beginning to emerge. Katia told me that students undergoing their initial design studio experiences tended to have a “very hard time abandoning convention” because they were afraid of “taking the risk” of being different. Influenced by magazines, previous teachers, as well as their design studio peers, students tended to drop their own original ideas in favor of safer sets of architectural conventions and norms. She saw her role as a teacher in terms of the support she could give to her students as they learned to “let go” of the conventions of normal architectural language. By coming to what she called “an awareness” of their “personal or inner selves,” students could step outside of the existing set of architectural norms and create vocabularies of building form that were as unique as they themselves were.

Katia validated Julia’s attempt at developing an architectural vocabulary of form based on the “flickering candle” metaphor that had emerged from her personal interest in the spatial experiences of light and shadow. She affirmed Ernesto’s Latino cultural background and pointed him toward an exploration of Mexican architect Luis Barragan’s exterior facade color schemes. Because she believed that any form of vocabulary that was expressive of the self could lead to breaking away from the existing conventions of architectural form making, Katia validated and supported her students’ design explorations in which they invented vocabularies based on their unique experiences, on their cultural identities, or on various other aspects of their personal selves.

A narrative analysis of Katia’s descriptions of her interactions with students reveals that she structured her view of her students based on a traditional conception of knowledge: knowledge was discovered, it was preexisting, and it had locatable origins. Problematic students, like Catherine (was problematic within Katia’s point of view because she turn to external rather than internal sources of knowledge, which Katia took as a sign of Catherine’s absence of “conviction to her work”; an absence of an “awareness of the self.”) were those whose personal vocabularies for talking about their design works did not align with their own (teachers’) conception of the
best method for discovering knowledge.

Narrative analysis also revealed that the “awareness of inner self” metaphor that Katia used in narrating her students’ process of developing their personal sets of architectural vocabularies reflected her belief that the language her students used to describe their designs was not separate from the language they used to describe themselves: that their descriptions of their designs could derive from descriptions that reflected their awareness of their personal interests, their unique wants, and their cultural roots. Katia’s story, as told in her own words, complemented by narrative analyses that seeks to expose the theories that were embedded within her teaching strategies, reveal the set of challenges that beginning design studio professors face within their attempt at providing students with a pedagogical environments that nurtures the integration of personal identity, cultural history, ethnicity and design vocabulary.

paper

Letting Go of Conventional Language

Katia Borges, a Latina woman in her mid thirties, was born and grew up in San Paulo, Brazil. She immigrated to the United States and entered Berkeley’s Department of Architecture as an undergraduate in 1981. She received her Masters Degree in Architecture from Yale University in 1990. After her east coast experience in graduate school she returned to the west coast, and built up a one-woman firm located in Richmond, California. By the mid 1990’s her firm had that gained her a reputation for sensitivity to the identities of ethnic-minority communities and their residents. In the late 1990’s I had the opportunity of observing Katia teach an undergraduate beginning design studio a UC Berkeley where she was employed as a part-time adjunct professor. After I observed her interacting with her students in the studio setting, I recorded a series of conversations about her approach to teaching beginning design. Her set of assumptions about student knowledge and cultural identity shaped her approach to teaching the beginning, and it this set of assumptions and their enactments in the form of pedagogy that I want to share with you.

In a small, quiet meeting room on the third floor of Wurster Hall, where we met for lunch and conversation about her approach to teaching, Katia often emphasized her interest in teaching her twelve students “how to be independent in their designs.” “I get very worried when I see sameness in the studio,” Katia told me as she described her students’ struggles with “letting go of conventions, of norms, and of what is expected.” She understood her students’ resistance to “letting go” as the roadblock that kept them from “incorporating” their “individual talents, differences, and strengths” into their work. For Katia, the process of “letting go of convention” was concurrent with her students’ processes of recognizing their own individuality and difference. One of the primary conventions that Katia believed that students could eventually “let go of” was the traditional language that architects spoke. But before “letting go of” conventional language, before, as she put it, “venturing into uncharted territory,” students had to “not only know themselves as individuals, but also become secure about their knowledge about the convention of architectural language.”

For Katia, the formative stages of developing an individual personality as a designer interlocked with a process in which students learned the conventions of architectural language so that they could “manipulate” that language in their own individual and different ways. Once they understood the normal and conventional ways that architects had adopted for talking about the design and construction of buildings, then students could “start inventing new ways of communicating” through a process of “manipulating” the existing conventional language in their own terms. She related her students’ processes of learning to recognize and make use of their own individuality and difference to her own experience of leaving her native Brazilian culture to come to the United States, or more specifically, to come to Berkeley for her undergraduate architectural studies. “I came from a place where everybody knew me, to this place where I was nobody,” she told me recalling the challenges of finding herself in a foreign culture. “I mean that could be incredibly intimidating because it’s in Berkeley, California, in the United States. Not only was I foreign to the culture, but I was also foreign to this place, to this school. So in order to kind of swim or sink, I really concentrated on fulfilling the requirements just like my students do. To be a really good student. That’s what I knew how to do no matter what the cultural milieu, so I did that because I didn’t know anything else. And I survived.”

Dropping Diego Rivera’s Murals

The “proof” that she “had what it took” to be an architect came through surviving the system and adopting the conventions of traditional architectural language rather than coming to “an awareness” of who she was as an architect; an awareness she believed the confidence required to “let go” of existing architectural language conventions. Of the several design projects that her students completed during the summer session in which I observed Katia, the “room project” was the one that she felt best conveyed her pedagogical approach to challenging her students to “let go” of architectural language conventions by creating designs reflective of their inner selves. In the “room project” students had to choose three objects that would be the starting points for their investigations into the design of a room that was meant to function in much the same way that their existing bedrooms functioned: as spaces in which they kept their possessions, where they slept, and where they did their studying. The aim of having students choose three objects to be housed in the room was to have them recognize that objects evoked personal meanings and memories that could inform the direction of their designs and lead them in the direction of letting go of convention.
Katia described the struggles that Ernesto, a twenty-year-old Latino man in her design studio, was having with the “room project.” Katia reflected on her conversation with Ernesto, telling me, “He initially wanted to include reproductions of Diego Rivera murals in his room, and he decided against it, and I said, ‘Why?’ And he said, ‘because people wouldn’t understand.’ So I said, ‘Because it’s the work of Diego Rivera’s murals? Do you mean that you were thinking that an Anglo-Saxon person could not understand, could not get at the core of the work? There is an exhibit going on right now at the Museum of Modern Art on that very subject, Diego Rivera and Frida Kahlo, and maybe you should go. It is the height of high culture and there it is. And next door across the street there is a Center for the Arts that was created for the very purpose to showcase multicultural art in the city, in the Bay Area: to really look at some of our own artists and what they are talking about.’ So that was one glimpse that I got.”

Katia had gotten “a glimpse” of “the core” of Ernesto’s individual identity as a designer via his description of his personal interest in Diego Rivera’s artwork. She took Ernesto’s intimation about his hesitancy to make use of the Rivera poster as a cue that he needed validation of the anxiety he felt about being a Latino in an “Anglo-Saxon” culture. Her affirmation of Rivera as a Latino artist whose works had been culturally approved as being “the height of high culture,” and her subsequent affirmation of local “multicultural art” was her way of posing that she perceived Ernesto’s cultural difference as a strength to be pursued through expression, rather than diminished or discounted through repression.

While Ernesto eventually abandoned the use of the poster of the Diego Rivera mural as one of his “room project” objects, he began developing an architectural vocabulary in which he employed colored wall surfaces that Katia described as similar to those of Mexican architect Luis Barragan. Ernesto may have been implicitly revealing his Latino identity through the use of “Barragan” kinds of color schemes, but he was among the majority of students who, in Katia’s experience as an undergraduate design teacher, had not acquired the confidence to “go out on a limb” and explicitly explore the relationship between their cultural identities or their inner selves and their design vocabularies. She explained, “Only very rarely have I had undergraduate students that have done that. And I am very encouraging of that, always. If they want to bring cultural themes to their work, hey, as long as they work within the parameters of the studio that’s just the more richer. So I am often very encouraging of that but not everybody has that self-confidence to take that leap and do something different than the others.”

Katia’s “nurturance” of Ernesto’s difference, his uniqueness, was meant to point him in the direction of “doing something different than the others,” of defining his own set of architectural metaphors that reflected his inner self and his “awareness” of the architect that he was becoming. But despite Katia’s encouragement, Ernesto chose to abandon the use of the Rivera poster as the starting point in his design exploration; a use that would have explicitly revealed what she called the “cognizance of his identity.” Instead he opted to safely imitate a previously created architectural vocabulary of color and form. The possibility of explicitly expressing his cultural identity had been eclipsed by his lack of confidence and his fear of being misunderstood. Imitating the style of Barragan, an architect whose Latino cultural roots were aligned with Ernesto’s own, may have seemed to Ernesto to have been a step in the direction of expressing his unique identity, but in the end for Katia, he had created a replica rather than a set of architectural metaphors that were particularly his own. Katia described her encouragement and validation of Ernesto’s own expressions of cultural and personal self as her ways of helping him shore up the confidence that he would need if he was to eventually break from the conventional design language that he, instead, chose to replicate.

The Flickering Candle

Another student she spoke about within her narratives of her teaching experiences in her beginning design studio pointed to Katia’s pedagogical aim of encouraging her students to “go out on a limb” by making use of their own interests and their own metaphors within their individual design processes. Katia described Julia, an Asian American woman in her early twenties, as a student who “had an incredible ability to translate metaphor kinds of concepts into spaces.” Julia revealed her “incredible ability” by thinking of one of her “room project” objects as a metaphor for the kinds of experienced qualities she wanted her room to exhibit. Thinking and speaking metaphorically about the candle she had chosen as one of her “room project” objects helped guide Julia toward the development of her own architectural language of building forms and spaces.

Katia explained Julia’s process of using a candle to guide a metaphorical exploration of architectural space, recalling that “there was a moment early on when Julia was talking about the flicker of a candle and how that translated into space.” Julia had produced a sketch in which she attempted to render an interior quality reminiscent of the experience of candlelight. As she talked about her sketch of the room Julia described her interest in designing a room in which various intensities of light, from bright light to dark shadow, could be experienced as the inhabitants of the room moved from the room’s periphery to its interior.

As she spoke to Katia, Julia likened the architectural qualities of light intensity dissipating from bright to dim and the contrasting light and dark shadow play on wall surfaces to the experiential qualities of a flickering candle. At that point in her design process, Julia had stopped thinking and talking about the candle as an object and started thinking and talking about the candle as a metaphor. But two days later Julia had abandoned the flickering candle metaphor, much to Katia’s dismay. She recalled coming into the studio two days after she and Julia had explored ways in which Julia’s set of architectural forms could be informed by the “flickering candle” metaphor. But by that time Julia had abandoned the “flickering candle” as the metaphorical basis for her design and was exploring what Katia described as “trellis type things with the columns marking the rhythm” of the experienced progression from the exterior wall to the interior center of the room. Julia had opted for “something more conventional.” Julia had dropped her development of an original vocabulary of architectural ways to describe progression through light, and instead began employing a conventional way of marking progression through space by using the traditional architectural vocabulary of columns.

Katia told me that when she asked Julia why she had abandoned her original “flickering candle” metaphor and concurrent
exploration of architectural forms, Julia told her that “she didn’t think that it had a practical use. Having slipped from her poet’s body into her logicians mind, Julia told Katia that she didn’t think that one could inhabit that kind of space. In our conversation Katia told me that restrained her response to Julia’s move, but inside she felt like saying, ‘Who cares about the use? You know, it’s beautiful.’ When I asked Katia why she thought Julia had not “pushed it,” but rather, had abandoned her original “flickering candle” metaphor, she said, “Maybe it’s peer pressure. Other people who look at her desk and they are not understanding. Conventions, norms, what is expected. I don’t know who the kind of judging is for her. Is it what is published in the magazines? Her peers? Her past teachers?” Recall-ing the “moment early on” when Julia seemed to be on her way to making use of her “sensibility” for “translating metaphor kinds of concepts into spaces,” Katia framed Julia’s subsequent abandonment as “the syndrome of having a lucid moment and being able to create something wonderful and then abandoning it out because it’s not practical.”

Julia’s original defense of her design ideas in her own metaphoric terms, had sent Katia a clear signal that her (Julia’s) “designer personality” was being formed. Katia realized that Julia’s strength as a metaphor maker could be used to overcome what Harold Bloom recognized as the strong poet’s “anxiety of influence”: the poet’s fear of replicating other poets’ conventions, and thus never creating a work that was uniquely one’s own. 3 Katia’s encouraging Julia to be “less concerned with the conventional,” and to “take risks even when not entirely sure where she was going,” was indicative of a teacher who believed that her students could overcome their tendency toward conventional ways of creating buildings and conventional ways of exhibiting designer personalities that were imitations of others rather than expressions of their own unique voices and vocabularies.

Reflections of Their Inner Selves

Within the narrative of her experiences in the beginning design studio Katia treated the language capabilities that her students brought with them to her studio as reflections of their inner selves. By framing the processes of manipulating ordinary spoken language as “simultaneous with” the processes of manipulating form and space, she conveyed to her students the possibility that creating architecture was coincident with the architect’s discovery of her self. Katia emphasized her interest in “nurturing” her students’ capacities for “working independently” by validating and supporting their inventions of their own original vocabularies for talking about, and making, their designs.

Katia believed that by “manipulating” the conventions of existing architectural language, students could eventually gain the confidence needed to develop their own original vocabularies. That confidence and commitment to their own ideas and architectural vocabularies would come at the same time that they gained insight into their own unique sets of inner qualities: qualities of the personal self that she defined as the core of the “designer’s personality.”

Because she believed that any form of vocabulary that was expressive of the self could lead to breaking away from the existing conventions of architectural form making, Katia validated and supported her students’ design explorations in which they invented vocabularies based on their unique experiences, on their cultural identities, or on various other aspects of their personal selves. The “awareness of inner self” metaphor that Katia used in narrating her students’ process of developing their personal sets of architectural vocabularies reflected her belief that the language her students used to describe their designs was not separate from the language they used to describe themselves: that their descriptions of their designs could derive from descriptions that reflected their awareness of their personal interests, their unique wants, and their cultural roots. Katia’s message to her students was that their metaphors could bridge their identities as persons with their identities as architects; their metaphors that emerged from the self and eventually resulted in architectural translations into building form were metaphors that pointed to the intimacy between the thing created and its creator; between designs created and the designer’s self.

Not A Moment of Conviction

Catherine, a white woman and a third generation Californian from a well-to-do professional upper-middle class family, was Katia’s most challenging student. Of all her students, Katia found Catherine the most frustrating because, as Katia described it, there was “not a moment of conviction in her work.” As opposed to the minimal “worry about sameness” that Katia felt about Ernesto’s and Julia’s immature fear of the unconventional, the “sameness” that frustrated Katia about Catherine manifested in the form of Catherine’s tendency to “regurgitate the same idea over and over.” Katia believed that Catherine’s tendency toward constant repetition of the same design idea was rooted in her “thinking that she was completely unable to come up with something new.” As a result of her perceived inability to have original design ideas, Katia told me that Catherine was “much more prone to say, ‘I saw that example in Architectural Digest. I think I’m going to employ it right here’ as opposed to saying ‘what is enclose sure?’ or ‘How do we define passage?’ “

Katia expanded on her frustration with Catherine. As she started with a deep sigh she explained, “The only one I’m really worried about is Catherine. She is very stubborn. She has these preconceived ideas. Somewhere along the line she has been used to, she has gotten used to praise. Somebody must have been doing a lot of patting on her back, and saying, ‘Oh it’s beautiful, oh wow, just go that way.’ There is no way I’m going to tell her that and since I’m not going to give her that, then she’s gone through twenty variations of her scheme. She is just waiting for this standing ovation and she cannot get that conviction from herself. She cannot work independently. It’s unbelievable. Not a moment of conviction in the work. It’s almost like,” Katia changed from her adult tone to imitate a child’s voice, and ended her characterization with, “did you like this, can I do this?”

Katia equated Catherine’s lack of independence to her absolute inability to generate her own design ideas. To compensate for her impotence in original design thinking Catherine reverted to cutting and pasting the works of others into her own work. The problem with Catherine’s mode of aping the ideas of other designers, as Katia described it, originated “somewhere along the line”
when she had been uncritically praised for her efforts. The result of Catherine having sought and apparently having received her previous teachers’ approvals was that Catherine had developed the habit of believing that if she kept generating “variations on her scheme” she would eventually hit upon a design that would move her teachers to applaud her efforts with a “standing ovation.” One of the objects that Catherine had chosen to house within her “room project” design was (as she explained to Katia) the diploma that she would eventually receive upon completion of her undergraduate studies. Through her desk crit conversations with Catherine, Katia began to “put her finger on” the personal meaning that the diploma had evoked for Catherine. Katia told me, “It’s very interesting that one of her objects was the diploma. And it was such a big deal about the diploma. Catherine is highly conventional in the sense that she is doing it for the degree, not for the education. She is not in the thinking, in exploring, and spending sleepless nights thinking about exactly how do you feel when you walk through this building. She’s interested in, ‘By the time 2001 is over,’ she says, ‘I graduated Berkeley.’ I think I’m finally starting to put my finger on it. I think it’s about consuming. I think that is what I find so troubling: it’s about acquiring.

“The degree is one more of her possessions in a certain sense. And I hate to, I know I’m standing on pretty shaky ground making a value judgment on her social status or her background, but I know enough about her as a person that I cannot help but make conclusions and put two and two together. I think the degree is just one more acquisition. That’s what really irks me, because that’s the particular kind of person that I am. Education, for me, is a sort of a whole category apart. And it has to do with a lot of my background. For me it’s in a category all its own. In other words, it doesn’t matter to me how much you make, if you are not well educated then it’s not important... Education is a way to skip social classes. The fact that you were born into a certain social class shouldn’t mark you for life. That if you have ambition, and you are tenacious enough that’s a bridge. And it is perhaps the only kind of democratic space, the space of education. So for somebody to be treating the degree as a commodity is very insulting.”

Here the dynamic between teacher and student, in terms of Katia’s commitment to an version of knowledge that was personal and inner, as opposed to objective and external and in terms of a dynamic between the privileges and power-positions that were part of Katia’s and Catherine’s identities, was informative. Katia’s commitment to an internal source of student knowledge, and her commitment to her students cultural identities are two aspects of her own pedagogy that she placed into the foreground of her narrative of her relationship to her students. The background of power and privilege dynamics came into play in her description of Catherine’s upper middle class social status, in contrast to her own roots in a working class Brazilian family. “Treating the degree as a commodity,” was insulting to Katia, but her strong commitment to equity and democratic space revealed the invisible lines of tension between her status as a Latina woman in a pedagogical relationship with her white student.

Invisible Visible

In our conversations Katia did not raise the issue of her Latina identity in relation to Catherine’s white identity. She talked more about her attempt at drawing forth from Catherine “a moment of conviction.” Just as she had portrayed her interactions with Ernesto and Julia, Katia focused more on the professional aim of pointing students in the direction of developing their designer’s identities through their connection to their “inner selves” and their cultural roots. In those two cases Katia was explicit in letting her students know that she was seeing them in terms of their “inner” resources; encouraging and nurturing those resources. I read Katia descriptions of Catherine’s dependency on external norms and conventions as examples of her teacher enactments of resistance toward the white privilege status that she perceived her student embodying. Katia’s examples of Catherine’s commodification of her educational experience, her dependency on architectural magazines for inspiration, and her assumptions that her previous teachers applauded her efforts with a “standing ovations,” made visible, in our conversations, the invisible status of a particular white students’ whiteness.

Making white invisibility visible is one step in redefining the emerging set of roles that whiteness studies theorists have recently started to construct. In my conversations with Katia, the focus she chose to place at the center of her narrations of herself as a teacher was one that pointed toward the validation of her students’ personal voices. That validation was meant to point them toward limiting their dependencies on external architectural norms and conventions. She believed that as her students gradually shifted their search for design ideas away from magazines, or peer pressure, or other external sources, and toward their own backgrounds, idiosyncrasies, memories, even their phobias, they would gain confidence in their abilities to work independently; they would drop their habit of depending on external factors as they gradually picked up on an awareness of their inner selves; they would make visible their invisible set of commitments.

One way to Katia’s description of Catherine’s lack of conviction, would be to place it in the context of Katia’s implicating Catherine’s’ white set of privileges that she brought into the beginning design studio. In the context of white privilege, what Katia presented as “lack of conviction” can be re-presented as a conviction to the white codes power that she seemed to have taken for granted. Seen in this light, Catherine’s interest in referencing the Great White Architects that appear in glossy mainstream architectural press could be seen as behavior that fits well into a construction of objective knowledge, where reliance on their internal sets of motivating forces were seen as detriments to the learning process.

The issue of white privilege, and its invisibility in the studio education process, cannot be separated from the Western set of assumptions about what counts and doesn’t count as knowledge. Within that ancient theory, learning was a process that required detachment from the self, in that learning was the acquisition of objective knowledge that existed outside of personal experience. Following the traditional objectivist knowledge theory, if students were to acquire knowledge of which of their ideas were objectively true and which were biased by their own subjectivity, then they would have to deploy a method by which they could be independent of their subjectivity.
The historical construction of a Cartesian version of disembodied knowledge has led to studio education in which objectifying method-ologies including analytical considerations of objective contextual determinants, studies of historic precedent, and exclusion of first person vocabularies from argumentation have become the norm. Within that construction of knowledge the minds is assumed to have privileged status over the body; logic over intuition; detachment over personal commitment. Katia’s view of her students’ learning processes was framed within the per-spective that knowledge was something that already existed within her students’ personal experiences. Her narrative descriptions of her interactions with students implicated her attempt at an abandon-ment of the idea that her students’ knowledge existed outside of their inner selves. In thinking that knowledge already existed within her students’ inner selves Katia thought about learning in terms of its internal origins. The success that Katia had with Ernesto and Julia, I read as coupled with her successful resistance to Catherine’s enactments of white privilege. Studio instructors like Katia remind us that defining knowledge based her students personal experiences as making their bodies visible, against the grain of historically white-European set of assumptions about knowledge, can be a step in the direction of making visible what Elisabeth Lloyd calls “tyranny of objectivity.” And in that way Katia worked toward making visible her students bodies, encouraging them to explore their own cultural identities and personal inner selves within their designs set into motion the possibility that studio education can become a site for contesting traditionally marginalized identities.

NOTES
1 The design studio professor and her students within this study has been given pseudonyms.
5 Lisa Delpit outlines the following “Aspects of Power Related To Schooling” which were meant to the address public school education of children and adolescents, but can inform conversations about power and privilege in the beginning design studio: 1) Issues of power are enacted in the classroom each day – Teachers have power over students; Curriculum directors and publishers have the power to present a certain point of view; The state has power to enforce regulations regarding schooling; An individual or group can determine what constitutes intelligence or normalcy; Schooling impacts your economic future and job opportunities. 2) There are codes or rules for participating in power, that is, there is a culture of power – There are codes regulating speech, communication skills and modes of dressing, and ways of interacting. 3) The rules of the culture of power are a reflection of the rules of those who have power – The culture of power reflected in schools is that of the upper and middle classes; Children from these backgrounds are already ensconced in the dominant culture. 4) If you are not already a participant in the culture of power, being told explicitly the rules of the culture makes acquiring power easier – Culture of power transmitted implicitly to co-members; When implicit codes are attempted across boundaries, communication frequently breaks down. 5) Those with power are frequently least aware of or least willing to acknowledge its existence – Those with less power are often most aware of its existence; For many that consider themselves liberal, acknowledging and admitting participation is distinctly uncomfortable; When acknowledging or expressing power one tends to be explicit; When de-emphasizing power, communication is often indirect. See Lisa Delpit, The Silenced Dialogue: Power and Pedagogy in Educating Other People’s Children (New York, NY: The New Press, 1995) 24-26.
False oppositions between Western and non-Western approaches to design pedagogy ultimately hinder constructive debate. The problem is compounded by the fact that many who advocate so-called “non-Western” approaches argue for an emphasis on “creativity” that can lead to a lack of rigor that is often necessary for coming to terms with the visual and verbal vocabulary of design.

This paper describes an approach developed within an American university located in the Middle East. The design studio described in the paper consisted of students from Iran, India, Pakistan, Syria, Ukraine, Germany, Lebanon, Saudi Arabia and the Gulf States. In this environment, teaching must address diversity as a fundamental concern that is not limited to distinctions between white/non-white or Western/non-Western.

The approach discussed here is based on an exploration of fundamentals can be made place- and/or region-specific. Contemporary architecture and design practice in the Middle East has suffered from abandoning the knowledge of geometry and the skills associated with its application. In an effort to explore the value of geometry as a design tool, the pedagogical approach described in the paper employs Islamic patterns to teach basic design two- and three-dimensional design principles. Students begin with re-drawing and analyzing the patterns to determine the ordering systems that governed their construction. The results inform investigations into the transformation from a two-dimensional drawing to a three-dimensional object; continuing investigations focus on transforming the three-dimensional object through an iterative process that introduces color. Primary concerns include the relationship between space and form and principles associated with transformation, repetition, negative/positive space, solid/void relationships, figure/ground relationships, order, pattern, structure and part/whole relationships.

The paper argues that basic design teaching should focus on teaching general design basics via context-specific approaches. It also argues that questions of diversity and issues related to identity are complex and should always be carefully considered in terms of their relation to the teaching of design fundamentals.
Introduction

False oppositions between Western and non-Western approaches to design pedagogy ultimately hinder constructive debate. The problem is compounded by the fact that many who advocate so-called “non-Western” approaches argue for an emphasis on “creativity” that can lead to a lack of rigor that is often necessary for coming to terms with the visual and verbal vocabulary of design. In the non-Western world, the debate is often reframed as the conflict between “traditional” and “modern.” This debate is especially relevant to beginning design education, which often relies on abstraction to challenge students’ preconceptions and build a basic understanding of space and form.

This paper is based on an approach developed for an introductory level design studio that is taught during the second semester of the design foundations program in the School of Architecture and Design at the American University of Sharjah (AUS). The foundations year is an autonomous one-year program developed to provide a basic design education for students wishing to pursue degrees in architecture, interior design, multimedia, visual communication and design management; the program relies on studio, history and digital courses to develop the skills and knowledge necessary for further study in the major programs.

Although AUS is American in name and curriculum structure, it is characterized by extreme diversity. While many North American institutions aspire to diversity and have many nationalities represented in the student body, AUS claims over 60 nationalities on a campus that has been designed to accommodate 4,000 students. The true significance of these figures lies in the fact that no particular nationality represents a significant majority in a given course within the School of Architecture and Design; for example, the largest group of students in a spring 2004 design course was Iranian (33%), followed by students from India, Pakistan, Lebanon, Syria, Egypt, Saudi Arabia, Sudan and the United Arab Emirates. Although the majority of students are Muslim and Islamic holidays are observed, other religions are represented on campus. Instruction at AUS is in English, although it is a second language for almost all students. While Arabic, Persian, Urdu and Hindi are the dominant first languages, others may have grown up speaking Italian, German, Malay, Swedish, Tagalog or Fulani.

In spite of the diversity of the student body, the majority of students have been educated in primary and secondary educational systems that favor learning by rote. The emphasis on memorization rather than the development of analytical approaches to material results in a difficult transition to university level coursework. This is compounded by the fact that it is rare for students to enter the School of Architecture and Design with the experience or exposure that high school art or design courses can offer. In short, students have neither drawn nor constructed anything.

Teaching beginning design in this context is extremely challenging (and equally rewarding); it requires continual reflection on how one mediates knowledge and fosters a process of design that is analytical in nature and synthetic in scope. The following describes a context-specific approach to teaching general design basics. In this case, the notion of context refers not only to the physical location but also the specific challenges that result from the diversity of the student body and their common educational background.

Patterns of progression

Geometric patterns are ubiquitous and occur in Islamic cultures throughout the world. The designation “Islamic pattern” is consciously avoided in this paper. While the patterns discussed here reached the highest degree of development and resolution in the Islamic world, and especially in religious buildings, the mathematical and geometrical principles necessary for construction of the patterns are pre-Islamic and can be traced to the ideas expressed by ancient Greek thinkers like Plato and Pythagoras. This does not imply that the “West” should be given credit for the extraordinary development of patterns that occur throughout the Islamic world, but rather points to the difficulty of establishing what is “Islamic” about an abstract pattern. In a positive sense, it provides an example of the richness that can result from a process of exchange and development of ideas. It should be noted that some have attempted to establish a definition of an “Islamic pattern”; however, these descriptions do little more than point out the difficulty associated with establishing a useful definition.

The patterns continue to adorn a range of two- and three-dimensional works, from...
carpets to buildings. Whether calligraphy, arabesques, or the more regularized ornamental patterns, geometry forms the basis for construction. In Arabic, calligraphy is referred to as the geometry of the line and the proportions of the letters and the curved strokes are governed by a series of mathematical proportions. The flowing arabesques are also governed by basic grid structures that may or may not be readily visible in the foliated surfaces. The more regularized geometric patterns more commonly associated with Islamic art and architecture are the basis of the investigations of carried out by students. (See Figure 1 and 2.)

Contemporary architecture and design practice in the Middle East has suffered from abandoning the knowledge of geometry and the skills associated with its application. Although the students at AUS are surrounded by the patterns on buildings and everyday objects, they rarely look closely at them and have not reflected on their potential relevance to design. The pedagogical approach described here employs geometric patterns from across the Islamic world to teach and explore basic design two- and three-dimensional design principles. Primary concerns include the relationship between space and form and principles associated with transformation, repetition, negative/positive space, solid/void relationships, figure/ground relationships, order, pattern, structure and part/whole relationships.

The first step is to provide students with an existing pattern and to ask them to redraw it at double the original size. Scale changes begin to reveal a lesson that was extremely important in the development of ornamental patterns in the Islamic world, namely that the patterns are not dependent on scale and can be reduced to fit on a plate or enlarged to adorn a wall surface. A process of redrawing leads to a process of discovery and re-discovery: students discover what leads to the visual complexity inherent in the patterns and re-discover the methods and means employed in the original construction. (See Figure 3 and 4.) The re-discovery of the methods and means is an important learning and experience; it results in the development of analytical tools that are learned through doing.

The analytical approach that is necessary for redrawing the patterns becomes the focus of the second stage of the project: a series of in-depth analyses carried out to determine the ordering systems and their geometrical and mathematical relationships. Patterns are most often based on a recurring simple shape known as a ‘repeat’, which may or may not be evident in the final product; the sequence of the ‘repeats’ follows radial or bi-lateral symmetry. Earlier the relationship between ancient Greek thought and patterns in Islamic art was mentioned. Three proportional systems were adopted from the ancient Greeks: the root 2 rectangle, the root 3 rectangle and the Golden Mean. Addressing proportion through the process of re-discovering ordering systems means that the application of proportional systems is made relevant and immediately visible. It is also a clear demonstration of how mathematical relationships are made manifest in the visual. (See Figure 5 and 6.) Conversations in the studio focus on the principles that are evident in the patterns. Primary concerns include the relationship between space and form and principles associated with transformation, repetition, negative/positive space, figure/ground relationships, order, pattern, structure and part/whole relationships.

A second level of investigation occurs when students explore the potential for transformation that occurs when moving from a two-dimensional pattern to a three-dimensional object. Of particular concern is the way in which negative/positive space can inform solid/void relationships. Students engage in a process of interpretation that is based on the particular proportional and spatial relationships that were discovered through the process of analysis. (See Figure 7 and 8.)

The investigations continue as students begin to look at the potential of taking one of the ‘repeats’ and adapting it to create a modular unit that can be transformed and adapted to create larger units. These larger units are tested and adapted into a larger whole. (See Figure 9 and 10.) Students quickly realize that the process of development requires testing via models (an invaluable lesson for beginning design students). Questions related to what constitutes three-dimensional ordering systems become critical as students investigate various options for joining the individual ‘repeats’ or the smaller units into a greater whole. Issues of radial or bi-lateral symmetry that are evident in the two-dimensional patterns are explored in three-dimensional form; students also investigate relationships between space and form in the constructed objects. After initial investigations in white, students begin to look at the implications of contrast with the addition of black.

The final stage of the process moves back to a flat plane, although instead of a twodimensional surface the project considers how a shallow space (1") can be manipulated to
create the appearance of depth. Students rely on lessons from previous steps and develop one particular unit that has been subject to three variations (e.g. scale, open vs. closed, etc.) (See Figure 13 and 14.)

Conclusion

The process described in this paper seeks to challenge students’ preconceptions and build a basic understanding of space and form by exploring design principles through familiar forms of ornamentation. The process fosters the development of analytical skills that are necessary for understanding visual design. Understanding gained via analyses becomes the basis for developing a synthetic design process that considers basic issues related to space, form and construction.

An understanding of geometry is fundamental to understanding architecture and design in the Islamic world (or elsewhere). Although contemporary architecture and design practice in the Middle East has suffered from abandoning the knowledge of geometry and the skills associated with its application, patterns are still used in a manner that borders on the superficial. Beginning design students have rarely looked closely at the patterns that surround them and have not reflected on their potential relevance to design. The pedagogical approach described here employs geometric patterns from across the Islamic world to teach and explore basic design two- and three-dimensional design principles.

The method advocates a context-specific approach to teaching general design basics. In this case, the notion of context refers not only to the physical location but also the specific challenges that result from the diversity of the student body and their common educational background. When adapted to specific circumstances, a rigorous approach to design principles and their use can benefit from the richness that can result from a process of exchange and development of ideas across ethnicities and across cultures.

Notes:

3 There are complex issues related to the relation between the “ban” on figural representation and the development of abstract patterns as a form of ornament. While the Koran does not specifically prohibit the representation of living forms, the hadiths (reported sayings of the Prophet Mohammed) threaten hell fire to those who would paint or sculpt animate creatures. In spite of this, figural art did indeed exist in miniatures and in the decoration of secular buildings. For a discussion on figural art in Islam, see Dalu Jones. “The Elements of Decoration: Surface, Pattern and Light”. In: George Michell. Architecture of the Islamic World: Its History and Social Meaning. London, Thames and Hudson, 1978. pp. 172-173.
The purpose of this proposed research paper is to provide educators of beginning design students with an approach to incorporating the African-American design experiences into the traditional architectural history syllabus. There are very few references and documents regarding the specific contributions of African Americans that can be seamlessly incorporated into the history sequence without being treated as if it were a separate and unequal history of black people. I have argued for the inclusion of African American art and criticism into the mainstream of history education, preferring that all students be exposed to this dialogue even if they are not particularly interested in African American studies, per se during their design education process. It is natural to assume that students who attend an HBCU would be comfortable with any discussion about the contributions of the descendants of African people in Western design and architecture. Finding the time and the resources to introduce these concepts and possible theories of design into the curriculum is an understandable impediment to executing a solution to this anomaly.

This research will indicate how a black design ethic was manifested in the Shotgun House in much the same way that the Greek Revival and Victorian movements indicated an expansion of a Euro – Centric concept of monumental, classical design in the Americas. It will also indicate how the working class black home builder was free to express the cultural aspects of their African folk memory in the design and utilization of this structure. The dialogue will present current theories that attempt to answer the question “Is there a black architecture?” by critically presenting ideas related to perceptions of the value of black material culture. Throughout this discussion, it will be shown how these patterns of transition and techniques of building within the African American community are similar to the development of the non-black contributions of the periods and styles that we commonly refer to as American Architecture.
Introduction

A history sequence in schools of architecture provides the foundation for understanding the complexity and profundity of getting anything built. The impact that architects have on the civilization can be felt for a hundred years, even thousands of years. It is for these reasons that the history survey courses for non-history majors, ought to be progressive rather than conservative in approach. That is, our purpose in teaching is not to preserve the past, our purpose is to program the future. Certainly the patterns of form, style, function and technology that we discern from the past are filled with lessons learned, blunders, tragic mistakes and gems of beauty that need to be recounted. This research is proposing that we go a little further in demonstrating what is good and proper architecture.

The primary focus of the undergraduate architectural history courses that I teach is towards critical thinking. The facts of the historical events and periods speak for themselves; what is desired is that the student should transgress beyond the limitations of self and see history as a conduit through which he/she can shape the future. However, it is important to demystify the icons of architecture by illustrating the value that vernacular architecture has to the majority of the world’s population. Particularly, for a predominantly African American working class design student, it is critical that they see the contributions that blacks have made to the built environment. It is important, therefore, that those of us who have the responsibility of doing the research begin incorporating what we find into our syllabi so that a progressive image of all people are given their true place in history. Our students are an aware, articulate and proud group of adults. It is a tragedy for the architectural profession to maintain a Euro-Centric architectural orientation when our world is demonstrably mostly black, brown and tan.

The shotgun house provides an excellent example of black architecture that can be used as a sedge way into any discussion about domestic architecture during the period 1800-1890 in the United States. I am hoping to convince you to make presentations like this a part of the survey curriculum by creatively inserting this data seamlessly into presentations made during this period in history. It is a fascinating journey.

By definition, the National Park Service, Secretary of the Interior describes the shotgun house accordingly:

“The shotgun house with its typical two to four room linear plan is an important vernacular building type found most often in the South. The long, narrow form – one room wide- gave these buildings their descriptive name. Sometimes two units were built together as a duplex, side by side, each having its own separate entrance. Shotgun houses are almost always frame buildings with gable ends to the street, sometimes with small open porches on the front. The interiors are modest in features and trim. The house is 15 feet wide and approximately 57 feet long with net usable space of 750 square feet”.

The Shotgun House Design Ethic

Research on the shotgun house is becoming more substantial and reliable. There is still a need to compile the papers presented at symposiums into a comprehensive anthology because they are difficult to obtain, but the bibliographic references are indicating that the proliferation of this house form has influenced the American landscape. The early pioneers of this research include Vlach who began to trace the shotgun house from Louisiana back to the sugar growing plantations of Haiti and the Dominican Republic. His well documented and publicized treatise continues to illustrate that the building systems and form can be traced to West Africa.

As we are well aware, the African was uprooted from the homeland as a result of the slave trade. The African’s memory of “home” was able to flourish in the Caribbean where most African people were transported while on route to the United States. These people who stayed in the Caribbean achieved some level of autonomy due to both their need to cloister in order to protect their communities from the brutality of colonialization, as well as to work collectively towards uplifting their status as former slaves.

At the turn of the century, New Orleans had a population that had the following distribution: 1/3 bonded blacks, 1/3 white, 1/3 freed black. Most of the freed blacks were from Haiti. The Haitians brought the shotgun house with them. At this period of American history, being poor was the condition of most of the population. The houses of these pioneers,
settlers, were not perceived in the negative light of “ghetto housing” or “low class” housing as the stigmas that have been assigned to them by the middle class to black urban or black rural enclaves. Certainly, the occupants of vernacular and working class housing did not possess these negative stereotypes and would not be uncomfortable with their being considered a part of mainstream American architecture.

Research further indicates that the shotgun house builders in Haiti had carved African motifs into their exterior framing. The shotgun houses in New Orleans contributed to the expansion of gingerbread trimming which became identified as a Victorian motif. The use of wood also contributed to the proliferation of shotgun houses among the poor and working classes. It became possible to extend the interior space of the shotgun house by adding the porch to the front and often, the back of the house. Thus, the southern porch became a desired feature all over America.

CONTEXTUALIZING THE SHOTGUN WITH THE 19TH CENTURY

The basic form of the shotgun house responds adequately to its function as a home for low-income and working class populations at the turn of the century. Descriptively, it is a vernacular house, a little cottage in appearance, one bay wide, gabled roof, and a sequence of rooms extending in a row behind each other. It is well suited for environments where a lot of the production work takes place outside of the home and where socialization is best carried out in the front and back yards.

The context of the shotgun house is dominated by the social phenomenon of economic exploitation. Although we usually speak of architectural history from the landowner’s or elite’s point of view, vernacular architecture occurs because its users are responding to the residual effects of growth or change within the higher income classes. Certainly, the second contextual element regarding the shotgun house, per se is it’s response to the hostility of aggressive racist spacial ideologies. The shotgun house then, becomes a good and proper fit for both urban black neighborhoods and rural black settlements. They become both a symbol of defiance against annihilation as well as a place where cultural memory is given berth.

During this period (1800-1890), there was also the development of African American material culture among the middle class and elite blacks. We are beginning to ferret out the designs of black architects and builders notably within the wonderful research recently published by Jack Travis. Although this is the tip of the iceberg, it is not too soon to suspect that the architecture of the black elite would imitate the acceptable, mainstream styles of the period. That is, the black elite would design houses, public buildings, and commercial structures within the Greek revival, Gothic Revival, French Provencal patterns and styles of the mainstream. These architects, although trained primarily in black schools of architecture, would design and build what their client’s wanted, or within the practice of the profession at the time. This is the primary argument given for there not being a “black architecture” in America, since the form, style and construction technology was based on the American/European derivative.

There are at least two reasons why the folk memory of Africa was lost to the black elite –
To be African or of African descent was suppressed by the mass culture.
The African building technology and patterns of decoration were not openly taught to designers.

The pro-African intellectual was an enigma and would have been attributed to a “Back to Africa” dialectic which to most people meant “going backwards”. Fortunately, the literary renaissance in the early 20th century contributed to a re-awakening of the African American spirit and with that we should see an increase in the interior decoration of spaces with African and Caribbean art, colors, and motifs. There is much room for more research here, as well.

Nonetheless, it is clear that the working class blacks were free to remember their African forms. The popular culture of dance, music, fashion is demonstrably rhythmic, colorful, geometric, and “dark” – all derivatives of an African design ethic.

We have been taught to believe that the revolution in the departure from European classicism didn’t occur until Frank Lloyd Wright started moonlighting. Since we believe this, we have stopped looking for innovations and alternative design solutions that may have
been hidden in other classes of architecture during that period. As research continues to trace these design elements, indicating the form, pattern, and style of spaces designed by African Americans, we will be more comfortable in attributing those elements to our African/black roots. The shotgun house becomes a place that is connected to that memory and becomes no less a romantic association with the growth of domestic architecture in America than the log cabin, the carpenter gothic, the cape cod or salt box house, or the little bungalow. The spaces occupied by the working class African descendent should be regarded in architectural history with the same reverence and romance as the spaces occupied by European settlers and pioneers; the Swedes, the Germans, the English and so forth. The only means by which racist ideology can be obliterated from design education is to move the center of inquiry away from the Euro Centric point of view - as Bell Hooks aptly illustrates in Art On My Mind: (we need to construct) “… an inclusive understanding of radical subjectivity that allows recognition and appreciation of the myriad ways individuals from oppressed or marginalized groups create oppositional cultural strategies that can be meaningfully deployed by everyone”. (Sic, p.66)
To interject diversity into architectural education for the beginning student is to deconstruct its “schools of architecture.” This literature is to form the basis for the introductory study of architecture without the use of its traditional signifiers and historical references. This paper proposes exercises of site, art, and audience selected and developed by the student, creator of human spatial planning for a diverse culture. The absence of formal text and the focus of authorship is a solution for the implementation of diversity in the cultivation of architecture.

The initial education of the architect commences within the confined walls of graphic studios where the beginning student is subjected to the language, artistic representation and vocabulary dominant in the field of architecture. Multiple exercises involving problem solving are distributed which focus on the development of graphical problem solving. To further expose the students to this new world order, core subjects include architectural history, physics and structural analysis. It is not the typology of the courses that are problematic within a field that is dedicated to providing physical spaces for the use for human “being,” but it is the absence of its cultural identity, hence the absence of self-study that is lacking in the first two developmental years of the architectural student. The teaching of architecture has historically evaded cultural theoretical applications thus ignoring diversity within the development of the physical environment.

In this global society where students emerge from various cultural backgrounds architectural pedagogy has failed to respond to this fact and continues to teach architecture that is absent of the very thing that provides its reason for existence - human “being.” The young student’s cultural identity is eradicated and he/she is simply transformed into a non-descript grouping used for the implementation of rules and regulations constructed on the foundations of historical texts mainly rooted in classicism for the completion of an assortment of exercises.

The student who is now captured in an out of body experience is left to solve hypothetical problems without the use of his/her personal cultural experiences. Thus, the architectural problem is foreign and unsurprisingly produces more of the same predictable physical solutions found throughout architectural pedagogy. Unfortunately, the student’s cognizance is forced to contain all the necessary life information to approach the problem from within and create a meaningful and perhaps original work of architecture based on cultural identity. The underlying theory of architectural investigations must provide the student with a sense of belonging, or nostalgia. If architecture is to respond to the existence of others, its educational exercises must include “self.” Cultural identity may have its roots in music, art and social interactions, however its very nature includes diversity based on gender, race, and age.

Throughout the 1990’s architects explored issues of cultural identity. Jewish architects such as Peter Eisenmann, Daniel Libeskind and Stanley Tigerman explored and embraced Jewish architecture utilizing the philosophy of deconstruction and liberating the field by introducing solutions that are something “other.” Eisenmann explains his disregard for classicism “as a Jew and an outsider I have never felt part of the classical world.” There is something apparent in the language of deconstruction that opens the door to diversity. If deconstruction allows Jewish architects to create dynamic, passionate kinetic architecture then surely it can be used to provoke
the same response from other diverse cultures as well. This awakening and self-seeking acknowledgement can be found in numerous books published in the 1990’s concerning African architecture as well as conferences and discourses on architecture and identity.

To deconstruct architectural education is to challenge and break down its boundaries. It needs to be shaken up. It needs to be shattered in order to include the global society in which it aims to spatially contain. Various exercises must include the student as author and interpreter of “self” graphical text. Architectural pedagogy must contain a series of lectures based on principles, values, behavior patterns, beliefs and interest of “being” within the human experience. Architectural social tectonics becomes the underlying theoretical premise of the first two years of the beginning student. Hence, the evolution of autobiographical solutions and a studio atmosphere of inclusion rather than exclusion is the proposed approach to the understanding and increasing diversity in architectural education.

Introduction

To interject diversity into architectural education for the beginning student is to deconstruct its “schools of architecture.” The various components comprising architectural pedagogy must be disassembled and reassembled to represent the global society that forms its foundation for existence. Members of this elite institution must begin to recognize, accept and include diversity in its faculty, students, instructional methods, studio environment and finally text. This paper proposes a solution that will assist in this development by way of introducing cultural identity into the architectural curriculum. The saying that “first impressions are the most lasting impressions” definitely applies to the introduction of formal architectural education by all students enrolled in the first two years of an architectural program. These are the most critical years of matriculation that often determine whether or not a student has the desire, commitment, discipline and passion to remain in such a demanding program. Architectural investigations must provide the student with a sense of belonging, nostalgia. Cultural identity and self-acknowledgement serve as the catalyst for the implementation of diversity for the beginning student.

This literature suggests a basis for the introductory study of architecture without the use of its traditional signifiers and historical references. It also explores the language and use of deconstruction theory to unveil the need for cultural identity in education and practice. The philosophy of deconstruction is a European paradigm. However, it lends itself to the study and inclusion of the “foreign” versus the traditional. Foreign in this case represents cultural identity. Deconstruction’s existence in architecture has ruptured the boundaries of classical exclusivity thereby providing an open door to non-traditional methods of architectural design and problem solving, thus freeing the boundaries of cultural identity.

Deconstruction

Deconstruction theory has been the underlying theory of choice for the advancement and recognition of such Jewish architects as Peter Eisenman, Frank Gehry, Stanley Tigerman and Daniel Libeskind. The theoretical and physical solutions created by these excellent architects abstractly represent an autobiographical approach to and for the appreciation and representation of architecture. This approach, personal and familiar, provides the global society with an architecture that represents the “other.” The “other” is an architectural physical representation of cultural identity. This paper explores the absence of formal text and the focus of authorship rooted in cultural identity as a solution for the implementation of diversity and the cultivation of future architects. The means to such ratification is by way of borrowing the language embedded in the philosophy of deconstruction.

“The safe and sound world of architecture no longer exists. It will never exist again. Open architecture means consciousness and an open mind. In fact, architectural history through the 20th century and into the 90s can be interpreted as a path from a closed to an open space. Architecture as it was proposed in the 19th century is over. We have to go for a complexity that mirrors the diversity of world society. Interlaced and open buildings have no divisions: they challenge the user to take over the space.” (Wolf Prix, Coop Himmelblau, 1995: 65)

“Architecture Intermundium - which I founded as an alternative to both “theory and practice. Architecture Intermundium was and continues to be an attempt to get away from existing methods of production and discourse in the field - in short, to de-institutionalize architectural thought.” - (Daniel Libeskind, 1995: 15)

Faculty and Students

There are 113 accredited schools of architecture in the United States. According to the National Architectural Accreditation Board (NAAB), 2003 National Faculty Data, “non-white” full time professors represent approximately 15% of its overall total. The number of “non-white” tenured faculty represents 12.5%. ¹ Student population numbers for “non-white” remains in this low

¹ Student population numbers for “non-white” remains in this low
percentage range as well. The first and foremost interjection of diversity in schools of higher education begins with the acceptance and recruitment of faculty and students from various cultural backgrounds. Architecture has always been a discipline that propagates the status quo. Throughout its history architecture has practiced the science of exclusion rather than the art of inclusion. This is evident in the number of licensed professionals, established offices, publications and recognition of “non-white” professors and architects. To understand and increase diversity in architectural education all schools of architecture must prepare for and accept a complete makeover. Traditions rooted in separatism and superiority must come to an end. Institutions must embrace diversity and its human resources. Both faculty and students must begin to reflect the global society in which it tends to enclose.

Curriculum

Upon acceptance into a university, the initial education of the architect commences within the confined walls of graphic studios where the beginning student is subjected to the language, artistic representation and vocabulary traditionally dominant in the field of architecture. Architectural history courses give brief descriptions of the beginnings of architecture with a dominant emphasis on European architecture. Students are given multiple exercises, which focus on the development of graphical problem solving. To further expose the students to this “new world order” additional core subjects include physics and structural analysis.

It is not the typology of the courses that are problematic within a field that is dedicated to providing physical spaces for the use for and by human-being, but it is the absence of cultural identity, hence the absence of self study that is lacking in the first two developmental years of the architectural student. The beginning student is disconnected from what is familiar. Yet a year or two prior to graduation the student is taught to design for what is very familiar: Clients, local community, and the general public.

“Ever since I began architecture, I had abhorrence to conventional architecture offices. There was something about the atmosphere of redundancy, routine and production that made me allergic to all forms of specialization and so-called professionalism. By dropping the designations form, function, program and engaging in the public and political realm, which is synonymous with architecture, the dynamics of building take on a new dimension.” (Daniel Libeskind,2003)

The field of architecture for many of years has excluded diversity. Architectural pedagogy has historically evaded cultural theoretical applications thus ignoring diversity within the development of the physical environment. In this global society where students emerge from various cultural backgrounds architectural pedagogy has failed to respond to this fact and continues to teach architecture that is absent of the very thing that provides its reason for existence - human “being.” The young student’s cultural identity is eradicated and he/she is simply transformed into a non descript grouping used for the implementation of rules, laws and regulations constructed on the foundations of historical texts mainly rooted in classicism for the completion of an assortment of exercises.

“In order to get complexity in architecture you have to get rid of several things: first you have to get rid of architectural, historical laws;” ( Wolf Prix, Coop Himmelblau, 1995: 65)

The student who is now captured in this ‘out of body experience’ is left to solve hypothetical problems without the use of his/her personal cultural experiences. Thus, the architectural problem is foreign. We should not be surprised that it produces more of the same predictable physical solutions found throughout architectural history. Unfortunately, constrained in the student’s cognizance is all the necessary life information to approach the problem from within and create a meaningful and perhaps original piece of architecture based on cultural identity. Solutions include the student’s life experiences. The adaptation of cultural identity must include “self,” the first step toward de-institutionalizing architectural thought. This cultural identity may have its roots in music, art and social interactions. However its’ very nature includes diversity based on gender, race, and age.
“It is precisely the realm of ideas—not of forms or of styles that presents the most promising legacy of 20th century architecture. The 20th century propels architecture into a world where meanings cannot be completely supplied by historical languages. Modern life brings with it the problem of the meaning of the larger whole.” (Stephen Holl, 1995: 50)

“The recent selection of Daniel Libeskind as one of two finalists in the Competition to redesign the site of the former World Trade Center in lower Manhattan is, at the most obvious level, a personal triumph that testifies to his status as one of the world’s most respected architects. But it also highlights the unprecedented rise to prominence in the last generation of Jews in the Western architectural profession.” (Gavriel D. Rosenfeld, 2003)

“In the early 1980s already, a number of architects had begun to question the Vitruvian prepositions that underlie traditional well-made “anthropocentric” architecture. These include, next to Coop Himmelblau, Bernard Tschumi, Peter Eisenman, Zaha Hadid, Frank Gehry, Rem Koolhaas and Daniel Libeskind. These architects were catalogued under the header of deconstruction, a term that not merely emphasizes their familiarity with Jacques Derrida’s thinking, or under the header of deconstructivism,” (Bart Van der Straeten and Anneleen Masschelein)

Jewish architects explored and embraced Jewish architecture utilizing the philosophy of deconstruction, created by the French philosopher Jacques Derrida, a man of Sephardic Jewish descent. Bernard Tschumi, award winning internationally renowned architect and Dean of the Graduate School of Architecture at Columbia University, initiated Jacques Derrida into the realm of the practice of architecture in 1985. Mr. Tschumi invited Jacques Derrida to assist him with the design for a section of Parc de la Villette. Derrida’s resulting essay liberated the field of architectural discourse from its previous prepositions. If deconstruction allows Jewish architects to create dynamic, passionate, kinetic, culturally specific architecture then surely the philosophy and theory founded by members of other cultures can be used to provoke the same creative response. This awakening and self-seeking acknowledgement can be found in numerous books published in the 1990’s concerning African architecture, architectural writings by philosophers such as Cornell West as well as conferences and discourses on architecture and identity.

There is something apparent in the language of deconstruction that opens the door to diversity. Belonging, fragmentation, being, meaning, disconnection, connection, exile, translation, de-centered are just a few of its terminologies that are familiar to those who are “non-white.” The wordplay that is inherent in deconstruction makes for an interesting tool for diversity and the beginning student. This paper is not suggesting that schools produce deconstructivists. This paper isn’t an attempt to understand Derrida’s meaning of deconstruction. This paper is forming the basis for a new architectural vocabulary and school of thought that builds upon deconstruction’s premise. Borrowing and reconfiguring a comment from Peter Eisenman regarding his interpretation of Blanchot, author of “When the Time Comes,”2 it is the introduction of the implications of an extension of the idea of deconstruction as a tool for adopting cultural identity in architecture. The adoption of deconstruction by today’s distinguished architects has intentionally or unintentionally allowed for the study and implementation of cultural identity in architectural pedagogy.

“The best evidence of this trend — and the most significant in light of the current competition to shape the future form of Ground Zero — is the architectural movement known as deconstructivism. Emerging in the late 1980s and early 1990s, in no small part due to the efforts of two of its leading proponents, Libeskind and Eisenman, deconstructivism was a radical movement that cited the massive rupture in Western civilization caused by the Holocaust as grounds for rethinking and “deconstructing” the entire discipline of Western architecture. Sharing the postmodern belief that the Holocaust’s specifically modern origins require the abandonment of the “project of modernity,” Libeskind and Eisenman in their many theoretical writings argued that the Nazi genocide provided compelling reason to abandon traditional architectural practice and to instead embrace an architecture of fragmentation, de-centeredness and loss that reflected the reality of the postmodern, post-humanist, post-Holocaust world.” (Gavriel D. Rosenfeld, 2003)

Recently and paradoxically, the world has seen the rise of many architects due to their abandonment of traditional architectural practice. This abandonment invoked passion and desire in the works of these select architects. It is evident that this passion and uncovering of creative possibilities within architecture must continue in the works of future architects as is evident in the fact that these master architects are also instructors at prominent schools of architecture.

“What brings a different dimension to Blanchot’s author is the fact that between the terms self and language he inserts a third term, an excess he terms passion.” (Peter Eisenman 1991: 202)

This trilogy, self, language and passion are interwoven into the studio culture. The beginning student unknowingly becomes part of a continuous group session whereas the instructor takes on the role of an extractor. The extractor engages in conversations that seek to expose the student to his/her inner graphical and architectural passion. This passion may be rooted in religion, art, text, music, film, dance, etc. never the less it is self-awareness. It is familiar to the student and instills a sense of belonging. The extraction is shared with all participants allowing for the communication and understanding of those who are non-white. The result of this type of group communication and open discussions dispels cultural myths and stereotypes thereby allowing for acceptance and the
introduction of race and identity as part of the studio environment and exercise.

“The magic of architecture cannot be appropriated by any singular operation because it is always already floating progressing, rising, flying, breathing. Whatever the problems - political, tectonic, linguistic which architecture exposes, one thing I know is that only the intensity and passion of its call make it fun to engage in its practice.” (Daniel Libeskind, 2003)

Methodology

An example of the exercise mentioned above comes from two studio exercises conducted at Southern University in Baton Rouge, Louisiana. The first exercise titled “The Wall” focused on the sculptural development of space via models, perspectives and sketches. Students were instructed that today’s influential architects dismissed the idea of “building types” and therefore design structures that must be experienced rather than predefined. Students had to select six objects based on their personality; passion would serve to define the proposed function of their spaces. Objects were placed in areas hidden from the eye, which in turned forced the viewer/observer to seek the meaning engrossed in the models. The results of this exercise included objects such as jewelry, skates, hardware, crucifixions, basketball, and furniture. Transferring these objects as they relate to the functions of architecture the objects/models represented a jewelry store, skateboard arena, repair shop, churches, basketball arena and a high rise resident. The outcome of this exercise did address several of NAAB’s student performance criteria such as verbal and writing skills, graphic skills, research skills, critical thinking skills, human behavior and human diversity. The project also introduced students to one another, provided an approach to architecture that they could relate to and could understand. As a result the students produced autobiographical solutions.

The second project involved the addition to Southern University Museum of Art. The museum is located on the Baton Rouge campus. The site was selected because of its access to all students for the study and development of the project. Students were given a tour of the museum and instructed to select an artist, art, and or sculpture that he/she personally found as inspirational. Students were asked to write a brief description as to why the particular artwork was selected, name of the artwork and title of the artist. The students were then divided into four groups: Site model, site analysis/design and two groups for the design of the structure/addition. The idea behind the use of group projects was to allow interaction amongst the students. It also transformed the studio into its own audience. The audience was immediately aware of the purpose, design premise and its representation. Therefore, the audience was responsible in ensuring that the project was not only completed in its entirety but was responsible for its outcome. The group became a true representation of audience participation.

Upon evaluation of this exercise, the most interesting outcome lies in the solutions for the physical structures. The solutions represented a combination of the student’s selected artwork of inspiration. Such artwork included representations of Moses and the burning bush, Goree’ Island-door of no return, Congo woman supporting a child, a mahogany statue of a very tall woman, and the curves of a woman camouflaged as hilltops in a landscaped painting. The students were allowed to freely develop the project according to the artist’s work as well as the addition of other artworks the student found to inspire their solution. It was apparent that the students took ownership of the design and its abstract representation. This was evident in the student’s ability to quickly defend the designs intentions.

The solutions were divided into Scheme A and Scheme B. Scheme A incorporates various African art forms in its fenestrations. Windows symbolically represent the sun. Inside, there is a stairwell that leads to a rooftop door with a view that overlooks the Mississippi River. This door mirrors the door found on Goree’ Island. It is the door of no return. Scheme B, with its flowing rooftop forms, depicts the curves of a woman. The silhouette form of the addition reflects the form of the artist’s work titled Moses and the Burning Bush. The tallness of the addition represents the mahogany tall woman. This scheme strategically locates the window openings based on the position of the building on the site. The artwork of Moses and the Burning Bush reflects light in various colors. This scheme chose to reflect natural light in the galleries where lighting would not damage the artwork.

Figure 3 and 4: Scheme B, Students: Akeisha Tircuit, Jennifer Wilkins and Mara Shaw
It is apparent that neither scheme depicts deconstruction architecture as practiced by deconstructivist. It was never the intentions of this paper or the assignment to create a work representative of deconstruction. Deconstruction simply provided the methodology. Due to the transference of the language of deconstruction, students were able to solve an architectural problem that provoked passion and illustrated cultural identity. The exercise automatically included diversity in its assignment by the inclusion of its diversified student body, religion, and African and African American art.

“Deconstruction is understood to be unproblematically architectural. There seems to be no translation, just a metaphoric transfer, a straight forward application of theory from outside architecture to the practical domain of the architectural object………………just a literal application, a transliteration. Architecture is understood as a representation of an abstract idea.” (Mark Wigley, 1993: 2)

Summary
As an African American woman who had practiced architecture for a number of years before returning to graduate school, I often felt isolated from the theory of architecture, culture, and myself. I was fortunate to work in some very high-profile firms on large-scale projects. However, I found the rigid structure of architectural problem solving to be non-motivating. I felt disconnected. I was fortunate to enter University of Illinois in Chicago while under the leadership of Stanley Tigerman. Mr. Tigerman encouraged and allowed me to pursue an autobiographical approach to architectural problem solving. As I read readings of deconstruction, viewed the works of deconstructivists, and read various architects applications of this theory, I became motivated and interested in this new approach to design. I knew there were others out there that felt unrelated to the traditional laws of architectural design. Deconstruction was the language needed to express my architectural cultural identity. My graduate projects included African American “family” housing, an artist’s office building, a triangular form, (significant in African history), that produced various facades depending on the approach to the site and my most personally rewarding and celebrated project, A Memorial to Commemorate Slavery. The language of deconstruction: Binary oppositions; slavery vs. freedom, black vs. white, nostalgia vs. belonging, fragmentation vs. whole, trace, erasure, difference, etc. were all used to justify and assist my exploration into architectural cultural identity.

To deconstruct architectural education is to challenge and break down its boundaries. It needs to be shattered in order to include the global society in which it aims to spatially contain. Each participating component: Faculty, student, and studio exercises, must be willing to address discourses that are based in culture. Various exercises must include the student as author and interpreter of “self” graphical text. Architectural pedagogy must contain a series of lectures based on principles, values, behavior patterns, beliefs and interest of “self” the human experience. Thus, the evolution of autobio-graphical solutions as well as a studio atmosphere of inclusion rather than exclusion is the result of accepting identity. Architectural cultural identity is the proposed approach to the understanding and increasing diversity in architectural education.

NOTES

REFERENCES
Disability as Diversity

Two arms, two hands, two legs, two feet. Many of us come with the blessed “essentials” of everyday life. But what happens for those who don’t, or for those who lose one of the essentials, lets say vision in a fire, due to an accident? How do they get around in a building? Only those with a disability will know first hand, but there is a possibility for the mindset to be taught to a beginning architectural student who will constantly have to think about disability issues in almost every design that will be produced in the near future and also in an extended career. This is only one of the issues that has to be assessed though in recognizing the needs to be confronted when dealing with disability diversity.

Using “universal design,” a term coined by the late Ron Mace, a professional designer, a teacher, and also an advocate, a theory can be broken down to enhance an aspect of design education that must be taken into account in almost any design put forth by a student upon their admittance into a design program. This may include a domestic house in which a blind man is to spend most of his day and needs to depend on the sense of touch to find his way around. Or, it could also include a person in need of a wheelchair in his or her personal workspace. In these cases, might the use of multiple staircases be an illogical idea? And, would a student think of this right off hand? Mace states that the built environment should accommodate people of all sizes and shapes, all ages, and all levels of physical and cognitive ability. Possible ways to remedy this may be the inclusion of disabled students, faculty, and even outside sources to be part of a critiquing process in which minor details such as a wall corner, or entranceway might not be overlooked.

abstract
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Leigh Polifko is currently completing her junior year at Penn State University, majoring in Marketing with a minor in Architectural Studies. While being a full-time student, she is also interning with Murphy/Carpenter Advertising Agency in State College, PA, working with The Pennsylvania Guild of Craftsmen. Previously, she interned with The Centre Daily Times newspaper, also in State College. She plans to integrate her knowledge of both business and design into a future career.
Two arms, two hands, two legs, two feet. Many of us come with the blessed essentials of everyday life. But what happens for those who don’t, or for those who lose one of the essentials, let’s say vision in a fire, due to an accident? How do they get around in a building? Only those with a disability will know first hand, but there is a possibility for the mindset to be taught to a beginning architectural student who will constantly have to think about disability issues in almost every design that will be produced in the near future and also in an extended career. This is only one of the issues that have to be assessed though in recognizing the needs to be confronted when dealing with disability as a diversity issue. Using universal design, a term coined by the late Ron Mace, a professional designer, a teacher, and also an advocate of universal design, a theory can be broken down to enhance an aspect of design education that must be taken into account in almost any design put forth by a student upon their admittance into a design program. This may include a domestic house in which a blind man is to spend most of his day and needs to depend on the sense of touch to find his way around. Or, it could also include a person in need of a wheelchair in his or her personal workspace. In these cases, might the use of multiple staircases be an illogical idea? And, would a student think of this right off hand? Mace theorizes that the built environment should be able to accommodate people of all sizes and shapes, all ages, and all levels of physical and cognitive ability. Possible ways to remedy this may be the inclusion of disabled students, faculty, and even outside sources to be part of a critiquing process in which minor details such as a wall corner, or entranceway might not be overlooked.

Universal design is simply an approach to creating environments and products that are usable by all people to the greatest extent possible. To better understand universal design in a deeper sense, it may be more helpful to not look at the word disability by its literal meaning as an inability to perform some of the tasks of one’s everyday life, but to progress past that terminology and the actual word disability to comprehend it as a multitude of diverse abilities. Universal design is based on the laws set forth by the Americans with Disabilities Act (ADA) that is a combination of accessibility laws proposing to make all buildings barrier-free to people with disabilities. The difference is that universal design reaches further and eliminates the division of disabled versus normal people and goes far beyond just meeting legal requirements. The theory strives not only to insure the rights of those who are severely disabled, but also those who may have lost some of their ability due to arthritis, hearing impairments, visual impairments, mental health problems, and those who are users of wheelchairs and walkers or are of a shorter or taller stature, including small children. It also strives to eliminate the institutional look of accessibility designs, and create a pleasurable aesthetic to both the interiors and the exteriors of buildings.

There are four basic cornerstones that are essential to the success of universal design. They state that the design must be supportive, adaptable, accessible, and safety oriented. A supportive design means that it should provide a necessary aid to its function, and it must do this without creating any undue burden on the user of the space or product. An adaptable design means that the space or product of interest must be capable of serving a majority of users who have a wide array of needs. An example of this may be a drafting table that is adjustable in height and has the ability to wrap around a design student reducing the need for the student to use a makeshift desk or to not have tools and supplies within reach. An accessible design means that barriers that inhibit many people have been removed from the environment. It has the ability to accommodate any and all users. For example, a ramp going into a building can be used as a necessity by people with wheelchairs but also as a convenience of accessibility by bike riders, or delivery workers hauling heavy boxes on carts. A safety-oriented design is dedicated to insuring a user’s health and well-being. This encompasses both physical and psychological safety. Fire-alarms that are both loud and also have a bright flashing light help to let those with hearing and visual impairments know that they are in danger. As for psychological well-being, a workspace that is interfering with the user’s daily tasks, for example an office being so small that it is too difficult to organize materials, must be flexible enough that it can be rearranged to allow organization and efficiency.

This concept seems to have been more of just an ideal in the past, but is now becoming much more of a reality in everyday designs. People are not just planning ahead for their futures in the designs of their homes, but architects are also designing office building and shopping center plans to include a realm of people so that it may be more comfortable and accessible for them to work and shop in an attractive and functional environment at the same time.
There are an infinite number of possibilities in the design of a plan for an office building, a shopping center, a home, or a school. By using principles of universal design, millions of people with any variety of accommodation issues throughout any part of their lives who would normally not enter into a workplace or even further their education at a university because of situational constraints can now enter back into the working, social, and educational world. Measures have been taken to broaden the width of doorways to fit wheelchairs through, or provide ramps, or even lower shelf heights in retail and grocery stores to accommodate and allow people of all shapes, heights, and ages to feel welcome into any space and not be seen as an outsider or feel that they are part of a we versus they environment.

The value of design for people of all ages and abilities, known as universal design, is not taught in many American design schools. Nor is it practiced by many American designers. At best, many design students learn about building and product users as a homogenous group in the majority with a few exceptions - some special minority groups with unique needs like the elderly, the disabled, and the poor. Design education continues to segregate and stereotype people who do not fit “the norm” by ignoring their existence or, at best, teaching about them as separate subject matter. Well-meaning design research sometimes reinforces this separate treatment through its focus on specific groups having unique design needs. Products and building elements that meet the needs of older people and people with disabilities have tended to be ugly and expensive, and sometimes further stigmatize the very people they are intended to assist. For years there has been a no-market assumption by designers, builders, and manufacturers. This self-fulfilling prophecy has denied participation in community life to many people. Ron Mace points out that “legislated changes notwithstanding, it is designers who will decide whether accessibility will take the form of better design for everyone, or simply unattractive, costly, band-aid responses to annoying code requirements.”

This theory seems very logical and necessary but now arises the question of how to teach the theory and how to get a design student to incorporate the notion of universal design into all designs and not just leave it as an afterthought. It should be crucial to begin this process of introducing universal thought into the minds of a first year design student right from the very beginning of their design education. Through the Universal Design Education Project, or UDEP, which was done in the early 1990’s, there have been many different programs tested out and then studied at several universities across the nation to find out what would work best in a program and also what might not work as well.

At the University of Southwestern Louisiana, they found that activities such as discussions, experimental activities, and other exercises stimulated discussion and ultimately the awareness that was needed to make a course or program successful. It also appeared that exposure and direct contact with other students with disabilities allowed a freedom of interest and creativity with both the design student and also the student with a disability. Experiences and differences can be shared openly and design students have the opportunity to gain a sensitivity to those who are unlike themselves (p.213).

Just as the University of Southwestern Louisiana did, it appears that the inclusion of outside experiences and ideas of the actual users of products and buildings can help to gain much insight into future ideas and projects. If you do not use a wheelchair, or are not under the height of five feet tall, you may not think of such details in interiors and exteriors as those who do have a wheelchair or are of a shorter stature. Also, the project critiquing process should include disabled critics to point out such discrepancies.

Alternative strategies for teaching universal design can be based on principles noted in “Universal Design New York 2,” done by the Office of the Mayor of the city of New York:

* A group of experts developed the Principles of Universal Design in 1997: Principle 1: Equitable Use – The design is useful and marketable to people with diverse abilities. Principle 2: Flexibility in Use – The design accommodates a wide range of individual preferences and abilities. Principle 3: Simple and Intuitive Use – Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level. Principle 4: Perceptible Information – The design communicates
necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities. Principle 5: Tolerance for Error – The design minimizes hazards and the adverse consequences of accidental or unintended actions. Principle 6: Low Physical Effort – The design can be used efficiently and comfortably and with a minimum of fatigue. Principle 7: Size and space for Approach and Use – Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user’s body size, posture, or mobility. Following these principles leads to a design approach that does not discriminate and provides increased usability for everyone.3

With the understanding and the education of universal design in mind, we can now question diversity. How many design programs initiate universal design into their curriculum? And, of those, how many actually stick with it? Not only this, but there is also a question of how many disabled students enroll into these programs, and further yet, a question of how many disabled students enroll into a design school that does not initiate these programs. It may be because the buildings and environment of the school itself are not even acceptable for accommodating a student with diverse abilities. This may be true not only for the student, but for professors with disability issues as well. It is important to keep in mind that the meaning of the term, universal, is meant to include, relate to, and affect everyone in the whole world.

NOTES
Integrating Cognitive Processes into Beginning Design Education

One critical goal of design education is facilitating the movement of students from beginner toward expert. Typically, design educators think of this transition in terms of improving student performance over a course of study. This conception raises a question: what is the most effective means of improving student performance and thus moving an individual toward expertise? The answer to this question is a point worthy of argument in schools of architecture and amongst individuals. However, the purpose of this paper is to expose an important and often overlooked aspect of this debate – the role of cognitive processes in the development of design expertise.

Cognitive processes are simply defined as the operating procedures and regulation of the mind. Understanding cognitive processes, such as memory and perception, is as undeniably important as it is overlooked in the design of instruction and curriculum with schools of architecture. Many educators see these processes as the essential underlying determinants of learning and therefore critical building blocks for teaching and learning. This paper describes a set of cognitive processes derived from research in the field of cognitive psychology. Each set of processes is explained and then theoretically applied to learning contexts within design education. For organizational purposes, the cognitive processes have been categorized to create five groups that include: 1) acquiring design information, 2) utilizing design knowledge, 3) design thinking, 4) solving design problems, and 5) designer’s expertise (See Table 1 below). Each section of this paper describes a different category and provides examples for putting the processes into teaching practice.

The paper session at Not White: Diversity in Beginning Design Education provides participants with an understanding of cognitive processes and their application to design education. Session participants will find that by increasing their knowledge about mental functioning they will also uncover a need to reflect upon their own teaching methods and course structure – a refreshing and constructive endeavor.

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<th>TABLE 1: COGNITIVE PROCESSES APPLIED TO DESIGN EDUCATION</th>
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<td><strong>Utilizing Design Knowledge</strong> – Recalling and discerning important information, creating cognitive links to guide thinking</td>
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<td><strong>Designer’s Expertise</strong> – The role of expertise in making decisions and solving problems, the importance of experts</td>
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INTRODUCTION

“People’s knowledge of their own learning and cognitive processes and their consequent regulation of those processes to enhance learning and memory are collectively known as metacognition” (Ormrod 1999, 318). Metacognition is like the manager or coach of a person’s cognition and learning. By guiding information processing and monitoring learning, metacognition eventually heightens awareness, deepens knowledge, and contributes towards expertise. Studies show that the more metacognitively adept students are, the greater their learning and achievement is likely to be (Wittrock 1994). Metacognition is also very important for achieving expertise because it helps individual’s become better problem solvers.

To achieve expertise an individual must learn to identify and represent problem solutions quickly and accurately (Magliaro 1988). Since architectural design is fundamentally problem solving (Rowe 1998) and problem identification and representation is central to problem solving (Kaplan 1976) then it seems imperative for architecture students to utilize metacognition so they can move towards expertise. As Kaplan (1976) says, “everyone represents problems in terms of previously learned elements.” Therefore, previously learned elements are metacognitive catalysts in the construction of knowledge structures that will eventually determine the expertise of professional problem finders and solvers (Fosnot 1996).

The purpose of this paper is to help teachers design instruction that A) effectively moves their students from novices to experts and B) increases metacognition. A theoretical application of principals derived from literature in the field of cognitive psychology and related to beginning design education helps the paper achieve its purpose. Four categories organize the cognitive principals and illustrate their application to beginning design education. Table 1 shows the four categories. Each section in the paper corresponds to one of the categories and provides implications for putting the principals into teaching practice. (Please see the Table shown with this paper’s Abstract.)

ACQUIRING DESIGN INFORMATION

In recent years, educational psychology has shifted from a behaviorist to cognitivist psychological paradigm. This shift is leading to new memory research and experimentation. The following sections focus on human memory and the way information gets into the memory system that we call the mind.

MEMORY SPANS

In the 1960’s a theory known as short-term memory was developed (Waugh and Norman 1965, Atkinson and Shiffrin 1968). This popular theory claims that information is stored in a limited capacity for a short period until it is rehearsed and committed to long-term memory. The problem with short-term memory is rapid forgetfulness or quickly forgetting something before committing it to long-term memory. The problem results from a constant stream of incoming information stressing the mind’s limited storage capacity consequently pushing older information out. Rapid forgetfulness led early psychologists to conclude that the difference in short-term memory and long-term memory is mental capacity. This research has several implications for beginning design students encountering enormous amounts of new information over a relatively short period.

IMPLICATIONS

Teachers should carefully monitor the quantity and rate of information presented to beginning design students. Too much information, too fast is counterproductive and stresses the student’s mental capacity leading to forgetting and confusion. The philosopher and educator Alfred North Whitehead encouraged teachers not teach too much information because it leads to “the passive reception of disconnected ideas, not illuminated with any spark of vitality” (Whitehead 1949, 14). Typically, when students feel overwhelmed or crushed by excessive information they lose their vitality to learn and “shut down” many mental functions. Teachers should reanalyze the total amount of information they expect beginning design students to know and then teach only quintessential information and concepts. As Whitehead says, “do
not teach too many subjects but what you do teach, teach thoroughly” (14).

**PRACTICE AND MEANINGFUL ELABORATION**

Information that is stored and committed to the mind leaves traces of its whereabouts in the memory system for recall later. Recalling information from traces of memory is called activation (Anderson 2000). Psychologists Ratcliff and McKoon (1981) showed that the activation level of a memory trace undergoes general strengthening through repeated practice. Numerous researchers (Pirolli and Anderson 1985, Newell and Rosenbloom 1981) show that practice increases strength and speed of recall – in particular when it is thorough and saturating. Combining practice with meaningful elaboration or processing furthers its effectiveness (Anderson and Bower 1972, Stein and Bransford 1979) especially when a learner attaches some type of extended meaning to it, either directly related to the practice subject or not (Slamecka and Graf 1978). For example, if you are trying to remember a person’s name you can first say the name repeatedly until it is committed to your short-term memory. Next, you can practice remembering the person’s name again for a week or until you have strengthened its trace and committed it to long-term memory. Finally, if you connect the person’s name with something of meaning to you, like say your uncle’s name or your favorite athlete, then through meaningful elaboration you will further strengthen your ability to remember and recall the person’s name with speed and ease.

**IMPLICATIONS**

Expert designers seem effortless in their ability to derive inspiration from their experience and memory. This is because experts have years of practice and meaning associated with their craft. For beginning designers, the critical ingredient for the development of this expert ability is practice (Bloom 1986, Newell and Rosenbloom 1981, Shiffrin and Dumais 1981). To become an expert, beginning design students should practice remembering things like design principals and examples of “good” design so that they can easily and quickly trace down and utilize these things for designing. Some researchers (Hyde and Jenkins 1973, and Postman 1964) have shown that whether or not one intends to learn, the level of processing and practice will determine the amount of information remembered. In other words, remembering a project or task that is meaningful in some way is more likely whether the learner wants to remember it or not. For beginning design teachers, this means giving students ownership and opportunities to make meaning for themselves in their projects. Allowing students to choose the topic or method of representation for their project is one way to encourage depth and thorough, elaborative processing of information.

**UTILIZING DESIGN KNOWLEDGE**

The previous section has focused on the processes involved in getting information into memory and readying it for retrieval. The following sections will discuss retrieving information from memory.

**RETRIEVAL AND INTERFERENCE**

A study by Barnes (1979) shows that retrieving information is dependent upon its original method of acquisition, processing, practice, and contextual underpinnings, all things that lessen and slow over time. Anderson (2000) adds that time is not the only variable affecting memory recall. He suggests that interference caused by conflicting memories and thoughts influence retrieval. Interference happens when an idea becomes cloudy by competing ideas or distractions. This cloudiness can lead to forgetting where information is stored and confusion about what might or might not be an accurate recollection. In short, interference is one of the single most prevalent factors in retrieving information from memory.

**IMPLICATIONS**

For beginning design students, the new challenges of university life will interfere with memory traces leading to confusion between new and old information. To avoid interference the teacher may allow students to share their past learning experiences so that prior knowledge is explicitly reinforced rather than left to sit silently and possibly interfere in the construction of new knowledge. In addition, thoroughly explaining student-learning expectations will help to clarify objectives and leave less room for interference. Finally, encouraging students to
describe the basis for their decision-making can expose possible interfering information and allow the teacher to intervene in the learning process.

**CONTEXTUAL EFFECTS**

Using the context that formed the memory as an activator or cue can help in retrieving some memories. Experiments by Smith, Glenberg, and Bjork (1978) have shown that contextual physical elements like a particular room or driving route get associated with memories, and that providing contextual physical elements to these subjects again will improve their memory (Anderson 2000). Studies by Teasdale and Russell (1983) tie an individual’s mood to the ability to recall information. In other words, sad memories are more easily remembered when an individual is sad. Learning that is linked to emotional and physical states, known as state-dependent learning, shows people find it easier to recall information if they can return to the same emotional and physical state they were in when they learned the information.

**IMPLICATIONS**

Seasoned designers can call on experience to quickly understand the context of a site, for example, and determine a fitting design for it. A beginning design students has very little to relate to in terms of examining a site’s context for relevant factors. The beginner finds it difficult and more tedious to come to the same conclusion as the expert in terms of site characteristics. One way to help beginning students effectively analyze context is to take them to a variety of sites and simply talk about the site’s mood or spirit. Discuss the process of site evaluation and analysis while on site. Learning about the site while participating in the context of the site itself will deepen processing and help students to remember how to analyze a site when they arrive to investigate their client’s property later as professionals.

**SOLVING DESIGN PROBLEMS**

Designers, like everyone, face hundreds of problems daily. They range from simple like purchasing blueprint paper to elaborate like achieving sustainability. Virtually all problems range in complexity because “all cognitive activities are fundamentally problem solving in nature” (Anderson 2000, 240). The basic argument is that human cognition is always purposeful, directed toward achieving goals by removing obstacles and solving problems (Anderson 1983, Newell 1980, Tolman 1932). A “problem” is any situation that exists when a current state differs from a desired state (Bransford and Stein 1984). The span between current state and desired state determines the nature of the problem. Knowing the characteristics of past solutions will suggest appropriate strategies for solving a similar problem faced in the future. Ultimately, solving a problem depends upon the knowledge, wisdom, skill, and experience of the person or group charged with solving it.

Most problems are either well defined or ill defined based upon the structure of the problem and the amount of resources needed to solve it. A well-defined problem is solved using a nearly guaranteed strategy and has only a few known solutions. For example, a slope calculation that uses a basic equation will yield a precise answer. However, an ill-defined problem, according to Kitchener (1983), has more than one accepted solution and no universally agreed-on strategy for solving. Worldwide ecological problems, such as global warming, provide a good example of an ill-defined problem. The first step in solving problems resides in an individual’s existing knowledge and ability to learn about a problem.

**PROCEDURAL KNOWLEDGE AND OPERATORS**

Declarative knowledge is explicit knowledge of facts that we can report and of which we are consciously aware. Procedural knowledge is knowledge of how to do things and is often implicit (Anderson 2000). In terms of problem solving, procedural knowledge is like puzzle pieces lying in some stage of completion. Solving the puzzle happens when each piece fits into the next appropriate piece. Kohler (1927) and other more recent studies suggest most problem-solving activities have three essential elements. These three elements are: 1) goal directed behavior, 2) reorganization of the goal into a set of sub goals or objectives, and 3) the application of a successful operator. An operator is an action, like putting together two puzzle pieces, and is a function of procedural knowledge. A successful sequencing of operators provides a solution to a problem.
Acquiring new operators and procedures happens in three ways. The first is discovery. For example, we may learn a new shade tree grows in our backyard by trial and error. In this way, we have discovered a new operator for solving the problem of shade in our backyard. The second is having someone tell you about a possible operator. For example, a teacher can tell a student how to calculate live loads and then expect them to do it. The third method for acquiring operators and new procedures involves observing someone else. This method involves giving examples, role modeling, and making analogies. Analogies involve both noticing that a past problem solution is relevant and then representing the elements from that solution to produce an operator for the current problem (Anderson 2000, Gick and Holyoak 1980). Reed and Boldstad (1991) have demonstrated that telling or showing someone how to solve a problem is not always as straightforward and efficient as it seems. Their findings indicate that subjects given examples rather than direct instruction before a problem solving exercise are more likely to solve the problem effectively. However, the combination of instruction and examples doubled the odds of subjects solving the problem. Beginning design teachers should give students models and examples in addition to instruction whenever possible to help students develop successful operators.

PROBLEM IDENTIFICATION

Identifying a problem is one of the most difficult and challenging aspects of problem solving. Identification requires creativity and persistence, yet a willingness to ponder a problem for a long time without committing to a solution too early in the process (Hayes 1988). Students face several obstacles when trying to identify a problem. One obstacle for problem identification is the rarity for people to engage in the habit of actively searching out problems. Most people see problems as something to avoid instead of defining and solving. Another obstacle to successful problem identification is a lack of relevant background knowledge. For example, solving or even identifying problems of plant propagation are extremely difficult without a great deal of preexisting knowledge about botany and horticulture. A study by Getzels and Czikszentmihalyi (1976) found another obstacle to problem finding. Their study shows most people do not take enough time to reflect carefully on either the nature of a problem or its solution. Viable problem identification allows the problem solver to represent the problem clearly while selecting potentially successful operators.

PROBLEM REPRESENTATION

According to Anderson (2000), the representation of the problem has significant effects upon solution. Problem representation is the mind’s ability to picture and display the identified problem. Studies by Kaplan and Simon (1990) and DeGroot (1965) have shown that viable representations of problems are critical in selecting and applying operators. Even with the necessary knowledge, an inappropriate problem representation can often cause students to fail to solve a problem often frustrating teachers (Anderson 2000). Teachers can uncover their student’s existing knowledge and aid in problem representation by using an external or tangible form of representation. Several psychologists suggest representing the problem graphically by using drawings, graphs, visuals, and equations to help reduce the cognitive resources needed to remember problem criteria and constraints. External representations help students see the entire problem, identify potential operators, and illuminate holes in procedural knowledge.

IMPLICATIONS

It is important for beginning design teachers to have professionals discuss and even demonstrate their work with students. This allows beginners to watch experts at work and observe the expert’s procedure. Watching an accomplished designer work and think aloud permits a glimpse into both the procedural and declarative knowledge utilized and stored in the mind of the designer. In this scenario, the beginning student may need to have even seemingly obvious things explained to them. This is because of the student’s lack of preexisting knowledge and the expert’s inability to articulate what they are doing because the basis of their process knowledge is procedural and thus likely implicit. In this case, the expert may fail to realize that not everyone knows what he or she knows. Johnson (1988) says even highly skilled experts often find it difficult to describe what it is they know about a body of knowledge, and consequently may be unable to teach or reflect upon their procedures.
The beginning design teacher should assume nothing, instead explaining and demonstrating whenever possible. While it is likely that students will learn without such effort on the part of the teacher, the intentions of these suggestions is to increase the efficacy of learning for expertise.

**DESIGNER’S EXPERTISE**

Developing expertise is a function of practice and meaningful experience solving problems. Typically, experts are better problem solvers than novices are because of their discipline-specific experience, preexisting knowledge, and cognitive resources (Glaser and Chi 1988). Anderson (2000) says that through extensive practice we can develop the high levels of expertise that are particularly important in dealing with ill-defined problems. Studies by Ericsson (1996) contend that developing skills and intellect at an expert level takes about five to ten years of practice and sometimes more. The time it takes to develop expertise is dependant upon numerous factors, notably the effectiveness of teachers and the maximization of learning opportunities.

**DEVELOPING EXPERTISE**

Berliner (1994), Bloom (1985), and Ackerman (1988, 1992) propose that developing skills and expertise happens both consistently across disciplines and in stages. For Bloom, these stages correspond to the years a novice has spent working in a particular discipline. For example, an architect that has been working for 20 years exhibits more expert characteristics than one working for only 2 years. For Ackerman, the stages of expertise are a reflection of skills acquired and degree of skill automation. In Ackerman’s case, this means despite the number of years the architect has been practicing, expertise is a function of acquiring and efficiently using knowledge and skills. However, regardless of the difference in developmental concepts, most research agrees that the more one practices the better one becomes, regardless of initial talent and ability. Ericsson, Krampe, and Tesch-Romer (1993) suggest that extended practice counts more than inherent ability stating, “our review has uncovered essentially no support for the fixed innate characteristics that would correspond to general or specific natural ability” (399). Thus, even though a perceived innate talent may help a student develop expertise, it in no way guarantees an expert. Bloom (1985) supports this saying, “no matter how precocious one is at age ten or eleven, if the individual doesn’t stick with the talent development process over many years, he or she will soon be outdistanced by others who continue” (538).

**IMPLICATIONS**

Berliner (1994), Glaser and Chi (1988), and Glaser (1987) have outlined characteristics common to most experts. A brief summary of these characteristics hold that experts: 1) excel only in their own domain or field, 2) process information in large units or chunks, 3) hold more information in working memory and long-term memory, 4) are faster than novices at doing tasks and solving problems, 5) represent problems at a deeper level, 6) spend more time analyzing a problem, and 7) are better monitors of their own performance.

Although these characteristics reflect years of dedication to a discipline, beginning design teachers should keep these characteristics in mind during the design of instruction and projects. For example, if teachers stress interconnectedness and big concepts then they will help students to manipulate large units of information without presenting too much information. By stimulating thinking and encouraging practice teachers can fuel their students’ memory systems. Charettes or quick design projects can increase speed – especially if followed by thorough debriefing and reflection. Focusing on problem representation affords teachers opportunities to guide novice students to think deeper about how to represent a problem. Encouraging students to take extra time identifying and analyzing problems reinforces this characteristic of experts especially if teachers show students why slowing down can be beneficial to solving a problem. Accompanying these exercises with useful examples and feedback will increase the quality and quantity of student practice thereby helping them to become experts.

**CONCLUSION**

Applying the concept of metacognition is the responsibility of the student while encouraging metacognition is the role of the teacher. Nowhere is this more important than
in beginning design education. For it is there, that new students must learn masses of new
information, successfully remember and process that information while at the same time using
it to design. A general application of cognitive psychological research to beginning design
education suggests that teachers who structure projects and exercises to help students see
the value in reflecting and regulating their own mental processing will speed their student’s
movement toward expertise. Especially, when providing opportunities for students to deepen
processing, attach meaning to new information, practice, and discuss expert procedures. In
conclusion, it takes a great effort to become a professional architect or landscape architect but
it also requires mindful teaching sensitive to students’ learning. Designing instruction based
on valid, reliable cognitive principals can empower both student and teacher.

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Who’s Cube is it?

Foundation: To establish clear connections between the design pedagogy of the BaPedi and Ndebele of South Africa and the style of art and spatial orientation of Cubism is the purpose of this paper. The intent of this study is to provide students a more thorough connection with the past, in terms of physical, social and cultural context. This study will present the mechanisms that produced the platform for separation of identity of origin as it relates to present day design processes. As American Architects begin to explore the value of diversity in the working environment, the African Diaspora labeled “minority” awaits full acknowledgement of their contribution to the fundamental design principals of architecture.

The introduction of a cubist approach to spatial formal design as present in the residential designs of both the BaPedi and Ndebele shall be presented within the context of their original use from as early as the 1600’s in South Africa; to its introduction into Western design in the mid 1800’s in Europe. Cubism has become a well-rooted aspect of Western paradigm of thought in present day design. The fact that there has been no recent investigation to validate this conceptual design origin, is the point in which this study approaches this forum. As the title of the conference suggest “Not White” for presentation, the decision to investigate the relationship between forgotten African spatial concepts and redirected African concepts within the Western paradigm of design thought are appropriate. All too often information that does not promote, present or embellish Western thought is forgotten, hidden, or most definitely omitted from the books we daily use to teach from. What we are left with are excerpts of fragmented facts, which only present one story, nor all of the stories relevant to our global (timeline) existence. All too often the omissions are done to reinforce the need for dominance. Another fine point of this study is to make relevant the visual cues that are used to identify and promote design thought. They are side stepped since there is no in depth supportive investigations made on behalf of Africa’s across the Diaspora. One such case comes to mind is the African Burial Ground of NYC; once known as the Negro Burial Grounds on not so ancient archived documents. The fact that if it wasn’t for a newly established federal law put in place in the late seventies the global recognition of the burial grounds would not have been made. Only the archived documents sitting in the map room of the NYC 42nd and 5th Avenue library would retain the information for humanity to preserve in omission. Here again another instance of legitimate cultural supremacy to suppress factual information from a community of people who have been denied access to their cultural identity and ancestry, for well over 400 years.

How can this statement be presented and supported in a present day architectural education? One must first begin to address the past as a source of information without any deviations due to cultural cognitive dissidence. The establishment of a visual and written documentation “Global Timeline” would provide a simultaneous view of the actions of all parties and in some cases offer specific extents of cultural exchange. What must be clarified is the extent in which Europeans entered and extracted from the continent of Africa, the riches of gold and ivory, knowledge from Timbuktu and beyond, and cultural nuances of ritual and spirituality. As early as 1441 the continent of Africa saw its first Portuguese explorer in Mali and Nigeria. By1652 the Dutch West Indies Company began establishing colonies in South Africa. First contact for exploring, recording and incorporating cultural identity, cultural imagery and ritual ceremony occurred. Within the next 200 years the information taken out of context, directly related to origin was stripped, eliminating any direct cultural

abstract
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identity to people of African decent. Throughout the African Diaspora the production of images, artifacts, structural elements and construction styles was based on need, context, and form. Reproducing natural conditions of life was the basis for which the BaPedi and eventually the Ndebele of South Africa used to creatively and physically record important information about traditional family life. Designs on perimeter and interior walls were produced as clear articulations of thought, deed and social consciousness, and evolved over time into political statements. Interestingly enough, Women were and still are the main producers of this creative design expression. Early 20th century European artist like Picasso, Braque, Malevich, El Lissitzky, and present day designer offer specific insight in understanding the various paths this form of design has taken.

**Pedagogy:** This body of information will also ask you to consider “culture” as the most comprehensive factor for addressing design. Introduction of this information into the early architectural curriculum offers students an opportunity to evaluate the origins of a form, spatial relationship, and assess the use of monochromatic and ploy-chromatic design presentation. It will introduce the evolution of design pedagogy through cultural and geographical difference. In addition, by revealing this information to the first and second level design student an opportunity to trace design along two very unique paths becomes the first introduction to diversity in architecture. Images, diagrams, and buildings through time will be used to validate, identify, and demonstrate the origins of Cubism and its relationship to the BaPedi and Ndebele.

The first segment of the presentation will explore the historical aspects of the geometric shapes created in the two African cultures. The second segment of the presentation will be presented as an acknowledgment of the way the geometric forms were introduced into the Western design community, to produce the term Cubism and extend into the theoretical foundations of Constructivism. The third segment of the presentation will be presented as an experiment in understanding how context need and form driven by cultural awareness can be used to define spatial characters in an architectural form.

This approach will focus on understanding the usage of cultural nuances towards form, using visual symbols, social attitude and political opinion and provide this forum with a method for instructing students. A series of images will be introduced to begin the task of identifying unrealized space in respect to, 2D, and 3D, proportionally and spatial orientation

**Acknowledgment:** Therefore in conclusion, the reality that there are very few sources for collective supportive works is realized that the information is spread throughout the known universe, it is our job to seek this information out and make it realized and accessible. The BaPedi and Ndebele should be recognized as the progenitors of a visually representational form of spatial organization. Their influence’s on cubism through adaptation has become rooted in design philosophy today along one cultural perspective. The question should be how would this information now revealed to young designers offer young designers opportunity for greater inspiration and creativity.
The historical precedence: Where does design come from, this is a typical question asked by people. The answer generally seems to reinforce the more dominant cultures point of view, and rarely is there the statement that the art or design origin is rooted in a cultural identity, or geographical place other than the chosen ones we all have come to rely on as the foundations of Western culture and thought. Yes there is the occasional acknowledgment of the Asian influence, and even recently the Arabic influence, but the culture well removed from the African continent the Egyptian influence offers little suggestion of a Black African contribution to design. Yet, how often do you even remotely identify anything from deep within the African continent as an art form that may have had some initial influence over one of our well-known artistic movements? To begin to reveal, expose and suggest that two South African communities the BaPedi and the Ndebele. (See Figure 1.) South African regional Map, BaPedi Image and Ndebele Women and San People and Rock Paintings, could have been the progenitors of one of today’s well recognized and easy identifiable forms of design expression is an opportunity to remind people that oldest evidence of Homo sapiens roughly 20,000 years ago were the San people (more commonly known as the Bushmen) who also inhabited this region of the world. To disregard the extensive collection of rock paintings produced by the Bushmen, would suggest that one should ignore remnants of the past for virtue of ethnicity. The Bushmen’s ability to produce an array of esthetic sensibility and form that has intrigued people through time still offers researchers opportunity for determining the origins of man’s graphic consciousness. Is it legitimate to suggest that was a well-established design context rooted in the social order of the people throughout Africa? Perhaps the evolution of design is only evident to some communities and not to others, depending on what part of the Hemisphere you are born. Ceremony and gender maturity, leading to family identity and social hierarchy are typical vital recorded data, and exist in all societies. So how does a dominant society determine the significance of another? It is these two communities, BaPedi, and the Ndebele who over time ushered in a design form that begins to address pattern, space, placement, an ordering systems, the origins of Cubism, “Who’s Cube is it?”

The fact that there has been no recent investigation to validate this conceptual design origin, and its link to design philosophies employed today is the point in which this paper wishes to introduce. As the title of the conference suggest “Not White”, the decision to investigate the relationship between African spatial concepts and non-identified African concepts within the Western paradigms of design thought is critical to the need to provide a more inclusive historical record. All too often information that does not promote, present or embellish Western thought is forgotten, hidden, or most definitely omitted from the books we daily use to teach from. What we are left with is an excerpt of fragmented facts, which only present one story, nor all of the stories relevant to our global (timeline) existence. All too often, the omissions are done to reinforce the need for dominance. Another fine point of this study is to make relevant the visual cues that are used to identify and promote design thought. They are side stepped since there is no in depth supportive investigations made on behalf of African’s across the Diaspora. One such case comes to mind is the African Burial Ground of NYC; once known as the Negro Burial Grounds on not so ancient archived documents. The fact that if it wasn’t for a newly established federal law put in place in the late seventies

![Figure 1: South African regional Map, BaPedi Image and Ndebele Women and San People and Rock Paintings.](image-url)
the global recognition of the burial grounds would not have been made. Only the archived documents sitting in the map room of the NYC 42nd / 5th Avenue library would retain the information for humanity to preserve in omission. Another instance of a dominant culture claiming another cultures artifacts as their own is the feud between Zimbabwe and Germany. Germany laid claim to the national symbol of Zimbabwe some 100 years ago. What Germany failed to realize that Zimbabwe would ever want their artifacts returned. Just recently the Germany government returned the bird, a stone-carved emblem that stood on the walls of the Great Zimbabwe another architectural wonder of craft and ingenuity that has been little to no attention due to ethnic identity (I would propose you do your own investigation of this information as it is presented to you to insight exploration of validity). Here again another instance of legitimate cultural supremacy to suppress factual information from a community of people who have been denied access to their cultural identity and ancestry, for well over 400 years. How can this statement be presented and supported in a present day architectural education? One must first begin to address the past as a source of information without any deviations due to cultural cognitive dissidence. The establishment of a visual and written documentation “Global Timeline” would provide a simultaneous view of the actions of all parties and in some cases, offer specific extents of cultural exchange. What must be clarified is the extent in which Europeans entered and extracted from the continent of Africa, the riches of gold and ivory, knowledge from Timbuktu and beyond, and cultural nuances of ritual and spirituality. As early as 1441, the continent of Africa saw its first Portuguese explorer in Mali and Nigeria. By1652 the Dutch West Indies Company began establishing colonies in South Africa.

William Shakespeare, the English literary giant proclaimed to King Henry the VI, v. III: “I speak of Africa and Golden Joys”, he was referring to the vast riches in all aspects of mankind’s existence there was a wealth of knowledge to be gained and acquired.

First the opportunity of making contact for exploring, recording, and incorporating cultural identity, cultural imagery and ritual ceremony occurred. Within a 200 year period the information taken out of context, directly related to originator was stripped, eliminating any direct cultural identity to people of African decent. Throughout the African Diaspora the production of images, artifacts, structural elements, and construction styles was based on need, context, and form. Reproducing natural conditions of life was the basis for which the BaPedi and eventually the Ndebele of South Africa used to creatively and physically record important information about traditional family life. Designs on perimeter and interior walls were produced as clear articulations of thought, deed, and social consciousness, and evolved over time into political statements. Interestingly enough, Women were and still are the main producers of this creative design expression. Early 20th century European artist like Picasso, Braque, Gris, Mondrian, Malevich, El Lissitzky, and present day designers offer specific insight in understanding the various paths this form of design expression has developed. (See Figure 2.)

Early records show that the BaPedi first arrived in the region of South Africa around
the seventeen hundreds through normal migration. Anthropologist JD Krige recorded documentation of this information. Krige defined the community as matriarchal, with the female authority known as “Rain Queen.” The matriarchal nature of the BaPedi community establishes the basis for which one can understand the relationship of the roles each member of the community had in respect to the actual implementation of craft. Men were the hunters and women were the gathers and homemakers. As the head of the house women became the implementers of all artistic expression. They established the process, procedure, value and definition of the entire design statement as it conformed to the physical boundaries of the exterior walls and interior floors of their homes. The general arrangement of the community was a series of settlements, which ran one into another; separated only by low continuous walls surrounding each family compound. In order to establish village pride intricate patterns were etched into the walls of the house. In some cases this occurred on both exterior and interior walls. Perhaps one could postulate that the notion of marker was first introduced into the universal thought through this etched pattern, as a way of distinguishing ones personal space. There are some accounts that the etched patterns were done to ward off evil spirits, or the living family member’s way of responding to the demands of an ancestor, in order to not offend. Early records also describe how the BaPedi first etched the simplest of shapes, forms, and spatial elements onto exterior walls of their homes as a way to represent personal statements of young women who is approaching the age of matrimony. (See Figure 3.) Typically, the reproducing of nature was not part of the composition. The size and location of shapes directly related to the function or activity of the space it was defining. Therefore, a door to draw attention to it was outlined in a very deliberate way. The attention given by this outlining was a repeating of the shape, and had a very bold imprint, perhaps to signify importance of function. This outlining occurred at windows, steps, and any space that needed to be presented to the guest as they approached the residence. The ornamentalism of the façade was further delineated by chevron symbols underscoring, signifying a distinction of importance of function for the space. As a completion of the façade along the entire length of the building typically appeared a rectangular element, unifying the entire design aesthetic of the composition. The use of color was minimal if not at all, (gray, black and white). As a two dimensional wall decoration, this art form begins to visually imply a close kinship with the succeeding user the Ndebele, whom also through migration arrive in this region of Africa less than a century later.

The Ndebele women claimed the design task and took it to the next level, by introducing both bright, vivid color, and specific intent into the composition. The earliest examples of the Ndebele acquiring and using the designs of the BaPedi as a means of expression shows up around the late 1800’s. By the early 1900’s the use of this design concept becomes rooted into much of the social expressionism of the Ndebele community; so much that one must begin to wonder what was it about the general design form that first interested them. One report suggests that the Ndebele used the artistic vocabulary of the BaPedi as a way of distinguishing themselves from the other ethnic communities in the region. This could be understood to be the time in which social persecution was being inflicted upon them by annexation caused by the loss of Transvaal, a region in South Africa taken by the British and then British rule (first and second Wars of Independence). In reality there is little evidence regarding the actual Ndebele adaptation of the BaPedi design vocabulary. Ndebele women are also known to include in their compositions images of things they would like to have and a surrealist approach to affirmation and desire. Yet, the manner in which they began to incorporate it into their social traditions as elements of expression of gender identity, fertility rituals, ritual and social purpose, political rights, territorial boundaries, regional identity, and most importantly family lineage is intriguing and certainly demands further investigation.

The design vocabulary being used to express political statements associated with suppression due to War, and then apartheid, is a typical condition of people throughout the world. The graphic statement in this case was subjugated and overlooked, not included in the universal script of expression and thus considered as not valuable. Is not one aspect of culture determined by the methods in which people express themselves? Culture is the act of refinement, mental training, and development. Then is not cultural artifact regardless of its geographic location an essential to the concept of what we as people use to collect and record for historical purposes?

**Foundation:** To establish clear connections between the design pedagogy of the
Diversity in Beginning Design Education

The purpose of this paper is to explore the ornamental aspect of the BaPedi and Ndebele of South Africa and the style of art and spatial orientation of Cubism. What may additionally come to mind is how the ornamental aspect of these designs have a separate relationship with the building, and are only outward manifestations of intent by individuals to produce personal statements. Spanish Architect Antonio Gaudi expressed in his journal sentiments regarding the use of ornamental objects as part of the entire composition as:

*To be interesting, ornamentation should represent objects that remind us of specific ideas and that constitute motifs. Such motifs are historical, legendary, representing deeds, emblems, fables—regarding man and his life, actions, and passions* (Gaudi, 1973, Ornamentation. New York. Wittenborn, VIA 2).

This study is to provide students a more thorough connection with the past, in terms of physical, social and cultural context. As American Architects begin to explore the value of diversity in the work environment, the African Diaspora labeled “minority” awaits full acknowledgment of their contribution to the fundamental design principles of architecture.

Determining how the cubist approach to spatial formal design as present in the residential designs vocabulary of both the BaPedi and Ndebele must first be presented within the context of their original use.

As early as the 1600’s in South Africa; to its introduction into Western design in the late 1800’s in Europe by way of early European travelers and traders into Africa, this design vocabulary has evolved. Portuguese traders crossed Africa and took with them all kids of artifacts, reproduced images, and crafts. It is reported by Jean-Louis Ferrier, that Picasso first became introduced to African art like many other French and Spanish artist of the times. The birth of Cubism most undoubtedly came from a fascination. Picasso had for the African artifacts he was being exposed to. Picasso’s interpretation for the African sculpture was a much-understated acknowledgment. Jean-Louis Ferrier provides a conversation Picasso had legitimizing the influences of African art on Picasso:

“The masks, they were not sculptures like the others. Not a bit. They were magical things….. the Negroes, they were intercessors, I even learned this word then. Intercessors against all kinds of things: against dangerous spirits. I keep on looking at the fetishes….. Me, too, I am against everything, I think that everything is unknown, threatening!… I understood what the Negroes used these sculptures for…. They were weapons. To help people no longer remain at the mercy of spirits and to become independent…. The spirits, the unconscious (it was not yet much talked about), it’s the same thing. I understood why I was a painter… The Demoiselles d’Avignon must have happened on that day, but not at all on account of the forms: because it was my first exorcist picture, yes.” (See Figure 4.)

This statement offers an opportunity to inspect the general realities of how people viewed the works of Africans and offers the mechanisms that produced the platform for separation of identity of origin as it relates to present day design processes. If you do not acknowledge the existence of a person, or of a culture, then why would you respectively given such people any claim to your re-inventing of their works?

If it is still is not clear to you yet, Picasso soon after this interview began to introduce into art society what is called Cubism, around 1907, with the introduction of analytical Cubism appearing around 1912. Frenchmen Georges Braque also made a vivid statement with this Cubis art form simultaneously showing the subject as multiple facets from many directions. Where the greatest connection to the BaPedi and Ndebele and Western Cubism come together is the synthetic Cubism. This is when the Western interpretation takes a more decorative, stenciling, collage, and polychromatic presentation.

Today Cubism has become well rooted in the Western paradigm of thought. One can hardly escape the visual connotations and impact on the young and old alike. The definition for Cubism described in many texts as a movement in modern art in which abstraction of an object composed along different axis, begins to suggest a unified composition, and begins to tell a story. (See Figure 5.)

Other interpretations of this artistic vocabulary of the BaPedi and Ndebele can be seen in the artistic geometry of the Dutchman Piet Mondrian (1872-1944). Gray Tree, the work of Spanish artist Juan Gris (Jose Victoriano Gonzalez), who spent time under the tutelage of Picasso in the 1911 at Ceret.
In placing these independent bodies of work side by side there is an opportunity to address the similarities in terms of time production, form and relationship in composition. Present day evolved applications of this is seen in the manufacturing of interior furnishings, textiles, and utensils produced by companies like West Elm, and wildly seen throughout the advertisement industry. This is the extent of the BaPedi/Ndebele progeny within today’s design community. (See Figure 6.)

In respect to architectural application the Architect that had the most visual connection to the BaPedi and Ndebele was Antonio Gaudi. His use of form, shape within the context of nature coming alive, offered the viewer a unique moment in of realizing how life could physically be enveloped. What was very different about Gaudi’s work and that of the BaPedi and Ndebele was his use of nature and lack of symmetry. (See Figure 7.)

**Pedagogy:** This body of information will also ask you to consider “culture” as the most comprehensive factor for addressing design. Introduction of this information into the early architectural curriculum offers students an opportunity to evaluate the origins of a cultural visual vocabulary, through form, spatial relationship, and the use of monochromatic and ploy-chromatic presentation.

The first step is to evaluate the condition of form used by the BaPedi to establish spatial relevance. It will introduce the evolution of design pedagogy through cultural and geographical difference. Additionally, by revealing this information to the first and second level design student an opportunity to trace design along two very unique paths becomes the first introduction to diversity in architecture. Images, diagrams, and buildings through time will be used to validate, identify, and demonstrate the origins of Cubism and its relationship to the BaPedi and Ndebele.

**Sample Design Studio exercises:**

**An exercise in Precedence: 1.1**

The second year experience is about identifying and then developing a fundamental understanding of all the essential parts of the built environment. Use the BaPedi traditional design style (monochromatic) as the starting point in which to form the keystone of this exploration. Begin by analyzing the given shapes in terms of 2-Dimensional qualities, proportion, conformity, and orientation in order to determine a language in which you can suggest reasoning for producing a uniform composition. As some of the visual elements specifically define recognizable functional actions known and seen in most structures, this exercise is designed to offer opportunity in understanding why embellishments of the façade are produced.

Because cultural morays, social consciousness were used in the BaPedi design, you are asked to select six personal moral or social aspects of your own ethnic community to assist in the processing of this language.

First establish a list of reasons in which this patterned language can be identified, then you are to determine ways in which the information can be adapted and applied to produce your own language according to formal placement of door, and window, in respect to wall, floor and roof. Recognize that there is an intersection of past and present that you will utilize in order to determine future use of this language.

**Precedence upon Precedence: 1.2**

**Part 1.2.a** Now that you have addressed the problem of spatial relationships in terms of a 2-D composition. Your next task is to produce a 3-D response to the language you have just finished developing. You are to begin the study by producing a series of **Sectional** cuts of your 2-D language. Next, you will construct a physical model of these cuts in order to begin to establish a 3-D character to this new language.

**Part 1.2.b** The setting is an urban intervention, where you are in slotting a...
replacement building into a 12-ft. site. This task requires you to consider a number of factors. You are providing a space for two; the structure is being used as a temporary workspace for two accountants. The height cannot exceed 45 Ft., and length of this structure has a maximum of 75 Ft. The sitting of the structure will be given along a North/South axis. There is an open lot to the West of you, and an adjoining structure to the East. Your structure has four walls, any number of windows that will allow the maximum viewable area for comfort, two personal entry points, a maximum of two floors, one stair, and one common roof.

Acknowledgment: The reality that there are very few resources that focus on the contributions of Africans throughout the Diaspora, allows for presentations like this to offer opportunity to legitimately connect all accounts of history globally. Total acknowledgment is the precursor to full awareness, and allows man kind endless opportunity for producing solutions. As the Akan of Ghana evoke the concept of Sankofa (past, present and future) it, is time for Architecture to make the necessary steps towards making little known information available, accessible, and accountable to all?

Realizing that the BaPedi and Ndebele should be recognized as the progenitors of a visually representational form of spatial organization, begins the process of linking human knowledge in the actual sequence it was introduced into the general consciousness of the planet. Their influence’s on cubism through adaptation has become rooted in design philosophy today seen from only one cultural perspective. The question should be how would this information now revealed to young designers offer additional opportunity for greater inspiration and creativity. I leave you with this last thought as so well stated by Sir Godfrey Higgins Esq. in the literary piece, Anacalysis {vol. 1} declared: “We have found the black complexion or something relating to it whenever we have approached the origin of nations.” Let not our bold arrogance continue to perpetuate our cognitive dissidence to accept the reality of substance.

REFERENCES
Internet website http://news.bbc.co.uk/2/hi/africa/3028589.stm
Nicholas Pioch, copyright 14 Oct 2002,BMW Foundation, the WebMuseum.
Middle-America/Meso-America: Rural Aliens in Urban Centers

In general, Americans have not looked for Mexico in Mexico; they have looked for their obsessions, enthusiasms, phobias, hopes, interests—and these are what they have found.
- Octavio Paz, *Mexico and the United States*

Using the metaphors and symbols that, because of some timely need, just happen to catch on, all cultures invent rituals and practices of faith, or of form. Similarly, many cultures make room for their own contradiction.
- Ann Cline, *A Hut of One’s Own*

Like other Middle-American land grant institutions, the University of Arkansas is under particular pressure to increase diversity among the undergraduate student body to more closely reflect the demographics of the state itself. The provincial and primarily rural background of the typical Mid-American student has resulted in a homogeneous character in many non-urban universities. The persistent homogeneity of the student population is particularly exacerbated in schools of architecture, where the traditional curriculum is designed to engender a pluralistic sensibility of the broad cultural differences and similarities that exist in the world today. While this ensures that students arrive with a collective sense of their familiar physical environment, the task of educating them for participation in an increasingly diverse and global profession is complicated. This dilemma raises numerous questions.

In the absence of demographic diversity, what are alternative methods for developing empathy in the student for ideas or conditions fundamentally different than their own? How, in the early years of design, can students develop the intellectual curiosity necessary to successfully engage unfamiliar physical and social contexts? Can travel-study in architectural education provide an inverse condition of diversity, enabling students to perceive themselves as the diverse (minority) participants in unfamiliar urban centers?

This paper discusses two distinct yet parallel components of the curriculum structured to engender a heightened sense of cultural awareness: a 5-day study in Chicago, occurring in the 2nd year, and a 10-week study program in Mexico City in the 4th year. Student experiences of these archetypes of Mid- and Meso-American urbanism (Chicago and Mexico City) place the rural student outside of their familiar context, thus forcing a critical response to those conditions. Through cultural immersion and disjunction, students engage the continuity of architectural history across geographic and cultural boundaries. This re-contextualization engenders heightened critical observation, a direct experience of diversity, and, ultimately, an inquiry of the students’ ultra-familiar surroundings that confront them upon their return.

Images below: Mexico City from ABCDF: A Photographic Dictionary of Mexico City, I-540 in Northwest Arkansas (photo by author), and Chicago Skyline.
Like other Middle-American land grant institutions, the University of Arkansas is under particular pressure to increase diversity among the undergraduate student body to more closely reflect the demographics of the state itself. The provincial and primarily rural background of the typical Mid-American student has resulted in a homogenous character in many non-urban universities. The persistent homogeneity of the student population is particularly exacerbated in schools of architecture, where the traditional curriculum is designed to engender a pluralistic sensibility of the world. While this homogeneity ensures that students arrive with a collective sense of their familiar physical environment, the task of educating them for participation in an increasingly diverse and global profession is complicated.

Institutions have made numerous attempts to establish a more worldly educational experience. These efforts include: student recruiting, requirements for general education courses, ethnic “theme celebrations”, affirmative action, and faculty recruiting. Some campuses have sacrificed the pursuit of actual diversity for the image of diversity, exemplified by the University of Wisconsin-Madison’s doctored cover image of the 2001-2002 undergraduate application catalogue. In the final moments of catalogue production, the editors were unable to find an image that illustrated racial multiplicity, so a photo of an African-American student was collaged, quite conspicuously, into an otherwise homogenous “all-white” image. Many university-organized ethnic “theme-weeks” are not dissimilar in their image-over-content methods. As Paula Rothenberg states, many campuses “adopt a tacos-and-egg-rolls approach to multiculturalism.”

These dilemmas raise critical questions:
1. In the absence of demographic diversity, what are alternative methods for developing empathy in the student for ideas or conditions fundamentally different than their own?
2. How, in the early years of design, can students develop the intellectual curiosity necessary to successfully engage unfamiliar physical and social contexts?

This paper poses the possibility that, in architectural education, travel-study may present a more suitable alternate to the “dim sum” education. Discussed are two distinct yet parallel components of the architectural curriculum at the University of Arkansas structured to engender a heightened sense of cultural awareness: a 5-day study in Chicago, occurring in the 2nd year, and a 10-week study program in Mexico City in the 4th year. Student experiences of these archetypes of Mid- and Meso-American urbanism (Chicago and Mexico City) place the rural student outside of his/her familiar context, thus forcing a critical response to those conditions. The attempt of both is to provide an inverse condition of diversity, enabling students to perceive themselves as the diverse (minority) participants in unfamiliar urban centers.

Chicago and Mexico City are not chosen as exemplars of ethnic, cultural, or architectural diversity. Quite the contrary, these contexts are significant for the Mid-American architecture student because there exists a clarity and relative constancy of those defining characteristics within each urban model. These places are chosen because their identifiable patterns—the skyscraper, gridded subdivision, and fire of Chicago, and the palacios, ejidos, and earthquakes of Mexico City—are fundamentally different from those of Arkansas. The study-trips are a means of taking students to an analogous condition, where homogeneity is still prevalent, yet unfamiliar. In trading one homogeneity for another the new cultural context serves as the lens through which the students’ collective experience is scrutinized.

DEFINING THE MIDDLES

While much of travel resides in a recognition of the discrepancies between near and abroad, the primary role is to foster empathy, to identify a middle (common) ground that can help assimilate the unfamiliar into one’s overall experience. Similarly, each of these places—middle-America (Chicago), Mesoamerica (Mexico City), and the mid-American university (Arkansas)—inhabits and typifies a middle ground. Chicago’s primary raison
d’etre is its mediation between the agricultural wealth of the Midwest and the economic marketplaces of the east. Mexico’s “middle-ness” resides in its history as the port of transfer for Spanish booty from Asia; while in modern times, Mexico occupies the threshold between the economic consumption of the US and the emerging South American markets. Northwest Arkansas—home to Wal-Mart headquarters and the trucking magnate of JB Hunt—exemplifies the erasure of regional boundaries and the mass homogeneity of American retail and consumption. In drawing these comparisons, the intention below is not to present an extensive history of these places; it is, rather, to illuminate the context that characterizes these middle/meso locales, which, in turn, provides the context for discussing student experiences in the rural and urban landscapes of each.

MEXICO
The landscape of Mexico embodies the characteristics of a country that is struggling to secure a modern identity in the 21st century. In fact, the history of Mexico has been marked by the difficult transitions that burden post-colonial countries, and the desire to change often leads to a culture of oppositions and paradoxes. Under Spanish rule for over 400 years, the country once known as New Spain endured a drain of wealth and resources that is unparalleled in world history. The national character of Mexico is forged through a history of exploitation and violence, often identifiable in the physical character of the country itself. Mexico is arid and tropical. Mexico is rugged mountain and broad coastal plain. Mexico is attacked from the sea by hurricane and tsunami and from the land by earthquakes and volcanoes. Against the backdrop of these environmental extremes a stubbornly rural and intensely urban contradiction has evolved in the landscape of Mexico.

The inertia of sharp urban and rural distinctions often propels the discussion of the man-made Mexican landscape into a diametric discourse. It is, however, a more challenging exercise to define what might constitute a “typical” landscape (rural and urban) of Mexico. The population of Mexico is slightly over 100 million (July 2003). Since 1980, the country has undergone internal migration that concentrated populations in the primary urban centers of Monterrey, Guadalajara, and Mexico City—where over 25% of the population is located on only 2% of Mexican territory. In that time the rural population has dropped nearly two thirds, and the sparseness of that population on the arable land has become the defining characteristic of the rural Mexican landscape.

UNITED STATES
Similar to Mexico, the US is historically defined by exploitation, but, for the US, the role of autocrat rather than victim has been ensconced in attitudes regarding both domestic and international “resources.” The US stretches from ocean, to mountain, to prairie, to ocean. This landscape is shaped ideologically by “destiny” and spatially by the continental grid. The US, like Mexico, continues to face conflicts of the pastoral and the urbane, most recently in critiques of their middle ground: the suburb. Sprawl, identity and place, architectural and ethnic homogeneity, and consumption have all entered this critique of the suburb. “Americans have not fully come to terms with the dissonance between the historical suburban dream and what is emerging as a megasuburban reality.” The suburbanite has been left to ask: “…what happened to the uncomplicated life promised by the American Dream suburb?” As well, the term “subdivision” has taken on new meaning. Once a large-scale cartographic partitioning of the rural middle-American landscape, of regularizing the pioneering efforts toward the west (and the consequent farmlands of the “bread basket”), “subdivision” has become a non-place, a community of anonymous participants and indistinct, though adamantly detached, dwellings. This middle-ground attempted to establish its identity as a utopian hybrid, borrowing from both urban culture and pastoral beauty. What has resulted, however, is heightened confrontation of the two.

The Unites States crossed a distinct threshold in the decade between 1940 and 1950. In 1940 the census reported that 47.8% of Americans lived in metropolitan areas; in 1950 that number rose to 56.1%. If we consider these same statistics regionally (northeast, Midwest, south, and west), an interesting identifier emerges. While the northeast has, since prior to 1910, held a higher percentage of metropolitan dwellers (54.8% in 1910) than rural residents, the Midwest has dogmatically typified national trends [see table 1]. This is why the “Middle West” is so important: it serves as a reliable benchmark for the whole—political attitudes, economic changes, climatic and agricultural trends, postures of pop-culture, and
housing trends. Northwest Arkansas borders the Midwest region. The implications of this will be discussed below.

Table 1

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ARKANSAS

The US Census Bureau geographically locates the state of Arkansas in the south region. Historically, this region has maintained a higher percentage of rural residents than the national average; the rural/metro

Table 2

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MEXICO CITY

In contrast to the irregular circumstances of the rural landscape, the urban landscape of Mexico is primarily conditioned by reason. While the origins of modern urbanism in Mexico date to the pre-Columbian cities, the existing characteristics of the regulating grid and cardinal orientation were reinforced and institutionalized by the prodigious Spanish bureaucracy. Cities in New Spain became the focus of political, religious, and economic power, and density was preferred as a deterrent to threats from the countryside (real or imaginary). The grid was adopted as the most expedient method of controlling land ownership and determining taxation.

Thus for nearly 400 years, the character of Mexican urbanism had been predetermined by a synthesis of the centralized political structure with the reasoned equanimity of the grid. Following the Mexican Revolution and throughout the 20th century, the character of Mexican urbanism changed decisively. Monterrey, Guadalajara, and Mexico City, fueled by the population explosion, expanded rapidly; and the measured restraint of the colonial grid at the core quickly dissolved into a complex collage of local ordering systems. In this environment, housing remained the primary building block of Mexican urban centers, and the unchecked horizontal sprawl consumed valuable peripheral lands in the process.

One of the most phenomenal consequences is that Mexico City, the capitol of the Aztec Empire and New Spain, has become the second largest city in the world. Not only is it an exemplar for the urbanization of the Americas, it is representative of the phenomenon of cultural and demographic concentration that typifies emergent modern societies. In the 21st century the history of architecture is being rewritten in these new super-urban centers. Moscow, Peking, San Paulo, Tokyo and Mexico City are the dynamic evolutionary laboratories of the modern world. Struggling under the weight of concentrated populations, these cities and the cultures that fostered them are redefining the built environment at a rate unparalleled in history. While these cities may have been founded on singular needs, they survive through the negotiation of the extremes, in a sense, through identifying and maintaining the common (middle) ground. Thus in the case of Mexico City, internal migration from the cultural and geographic extremes of the country reinforces the necessity for the middle as a point of mediation in the urban culture. By occupying a centered position, demographically and culturally, Mexico City has become both an archetype and an anomaly. It embodies characteristics of the world’s mega-cities, while it remains a stubbornly provincial microcosm of the Mexican nation.
Like many trading cities, Chicago was born and thrived from its geographic location and natural surrounds. Upon completion of the I&M and Erie Canals, intra-continental shipping could occur from the Gulf of Mexico through Chicago to the Eastern Seaboard. Chicago became the primary shipping and rail (un)loading dock for western lumber, Midwestern grains and livestock, and the wealth, consumption, and immigrant workforce from the east. The wealth of Chicago quickly spawned high-class entertainment and architectural innovation, and perpetuated the migration of immigrants into the city. This flocking inward later became an emigration outward, facilitated by the expanse of the prairie and the facile linkage of the Chicago city grid with the continental grid.

In each of these aspects—architectural innovation (the skyscraper), the migration into the city, the sprawl outward, and the relationship to the natural resources of the west and east—Chicago may be read as an exemplar of American cities. As an exemplar and with its collection of world renowned architecture, Chicago, like Mexico City, provides a context in which to question the cultural trends of contemporary urbanism.

RURAL ALIENS IN URBAN CENTERS: Student Experiences in Chicago and Mexico City

What we remember from childhood we remember forever—permanent ghosts, stamped, imprinted, eternally seen. Travelers regain this ghost-seizing brightness, eeriness, firstness… because they cut themselves loose from their own society, from every society; they are, for a while, floating vagabonds.13

Architects must adopt a proactive engagement with these lasting and emerging conditions that define and alter urban, suburban, and rural landscapes. This is imminently important for the beginning design student, though travel-study has been historically reserved for upper-level students. This may be an oversight of the relevance of travel-study in beginning education, as multicultural education occurs throughout primary, secondary, and post-secondary education. Extended travel-study for the 1st and 2nd year student a) prepares them for future international study, b) enhances their desire to practice in urban centers, and c) begins the edification of remote unfamiliar contexts often engaged in practice. Although the destinations and issues have changed, the “grand tour”14 has become increasingly necessary in beginning design to foster an appreciation of the broad cultural distinctions and similarities that exist in the world today. This is especially true for the mid-American university. Thus, at the University of Arkansas, the culture of travel is initiated through the 2nd year Chicago Trip and later expanded in the Mexico City Program.

CHICAGO STUDY-TRIP: 2ND YEAR DESIGN STUDIO

A five day study-trip to Chicago, occurring in the students’ 3rd semester, has become integral to students’ design education at the University of Arkansas. The objective of this study—including the trip itself and the projects/lectures that precede and proceed the visit to Chicago—is to engage a discourse on the identifying characteristics of rural and urban mid-America described above. Similarly, the study engages students’ preconceptions of large urban environments; it introduces students to a larger history and vocabulary of architectural works, and introduces students to the significance of travel-study and on-site analysis. For these students—83% of whom are from Arkansas and 79% of whom claim their political views as “conservative” or “middle-of-the-road”15—even going from Arkansas to Illinois is a “culture shock”—it has different climate, different food, and a different “dialect.” For many of these students, their most significant urban experience is Little Rock. Sixty percent16 of the 2nd year in-state architecture students had never spent more than 5 days in a large American city (pop. 500,000+) until their visit to Chicago, which further reinforces the need for the travel experience. Though the intention of travel-study is to de-contextualize the student, it is structured so that they are not overwhelmed, but instead engage the unfamiliar with a heightened intellectual curiosity.

The projects associated with the trip focus heavily on “constructing” assumptions prior to travel and “re-constructing” them during and after the travel experience [see figs. 1-2]. The central project of 2003 was a five part study on “Spaces of (Co)Incidence” in Chicago. The first three parts occurred prior to the trip; the final two parts occurred while in
the city and upon return from the city, respectively. Each aspect of the project is described below. (See Figure 1 and 2.)

**Part 1**

Students were given an aerial photograph of the greater Chicago area. This photograph was discussed simply as an image, an abstraction of patterns and anomalies, voids, masses, textures, and edges. Students developed an interpretive bas relief of the ordering systems, anomalies, and graining of this image.

**Part 2**

Students chose events of historic significance to research textually and spatially (e.g. women’s roles in the Columbian Exposition, modifications to the Chicago River, etc.). This research was inserted into the bas relief as a spatial “incidence.”

**Part 3**

Students then selected two other “incidence” from their colleagues’ research that held a strong spatial relationship with their study of part 2. These “co-incidences” were inserted into the relief-model and further modified part 2.

Parts 1-3 established an architectural language and familiarity with the city, and thus generated a *vocabulary of assumptions* from which to corporeally enter the city. This seeming familiarity allowed students to intellectualize the urban context and diverted them from the overwhelming (and, for some, “frightening”) unfamiliarity of the city.

**Part 4**

While in Chicago, students located these areas of “co-incidence.” They were to question how their preconceptions of these spaces and the surrounding social/urban contexts were reinforced, refuted, and/or altered by their haptic experiences, by the “being there.” On-site analysis and study sketches were conducted.

**Part 5**

Upon return from Chicago, students discussed and re-evaluated their preconceptions and experiences of the city. A final edit and manipulation of the relief-model was performed.

This process became the springboard for a subsequent critical questioning of their familiar environment (Fayetteville, AR).

**FAYETTEVILLE ANALYSIS**

Upon completion of their analysis of Chicago, students began a two week analysis of the immediate context of the university. With observational skills refined in Chicago and with the “fresh eyes” that come with traveling and returning, students were better equipped to objectively evaluate their familiar environment. It was crucial that the analysis of the familiar environment occurred immediately upon return. This is the time that the “home town” is most foreign, most unsettling.

> Nothing is so awesomely unfamiliar as the familiar that discloses itself at the end of a journey. Nothing shakes the heart so much as meeting—far, far away—what you last met at home.

Students employed similar modeling and conceptual means to examine the urban, semi-urban, and dissolved spaces of Fayetteville, AR. The Fayetteville Analysis began with a set of lectures comparing the regional landscapes of Chicago and NW Arkansas. The role of the horizon became a central topic. Chicago was defined as an “articulated flat-scape.” Chicago is located in a region—the prairie—that has distant horizons, while the city itself is defined by a sectional layering of above-, at-, and below-ground highways, trains, waterways, and spaces. Fayetteville, was defined as an “undulating landscape” which denies the horizon. This landscape, unlike the layered urbanism of Chicago, is populated with object-buildings scattered across the landscape. Similar to the project sequence of Chicago, students located
organizing systems, defining edges, transitional spaces, and anomalies. These observations were synthesized into an interpretive model of the “city.”

MEXICO CITY SUMMER PROGRAM

*I live 800 miles from the border, yet I live in a border town.*

In June of 2003, the United States Census Bureau announced that the Hispanic population in the United States (38.8 million in July 2002) had become the largest minority population in the country. Waves of Latin-American immigrants (primarily from Mexico) are re-defining the social and cultural fabric of American society. According to the 2000 Census, the growth rate of the Hispanic population between 1990 and 2000 in Arkansas was 337%, second only to North Carolina. There were 86,000 Hispanics living in Arkansas, with over 30,000 in Northwest Arkansas alone. Seventy percent of the Hispanic population of Arkansas claims Mexican ancestry. That dramatic statistic has made cultural engagement a critical priority for the typical Arkansas student. The time is right to go to Mexico if only because it seems Mexico has already come to us. Thus the Middle-American student, primed by their earlier experiential dislocation in Chicago, is immersed in this context, and compelled to directly confront the differences. (See Figure 3 and 4.)

The Mexico Summer Urban Studio fosters a critical engagement with the quality and character of Mexican architecture and urbanism as a vehicle of heightening the students’ own cultural awareness. This is accomplished through a series of speculative, analytical, and descriptive drawings that serve as a vehicle for the students to sharpen their ability to observe, reflect, and evaluate. Therefore, the familiar phenomena of architecture—color and texture, surface and space, light and shadow—become the lingua franca of the student’s cultural engagement. As Octavio Paz observed, “Americans have not looked for Mexico in Mexico; they have looked for their obsessions, phobias, hopes, interests.” By developing a collective understanding of the physical landscape of Mexico through drawing, the students are crafting an empathetic lens through which they are encouraged to examine their own obsessions, enthusiasms, and preconceptions about architecture.

The familiarity of the architectural explorations quickly leads the students into other avenues of cultural engagement. While in Mexico City, students live with families, use public transportation and immerse themselves in the rhythms of daily life in Mexico City, from shopping with their families to becoming regulars in the small shops and markets within walking distance of the studio. Most significantly, the six-week design studio brings the Middle-American student together with their Mesoamerican counterparts through the collaboration with other Schools of Architecture in Mexico City. The direct interaction between the students and their Mexican peers provides fertile ground for the discussion about the similarities and differences of the two cultures as expressed through their architecture. For many returning students, collaborative design work is the most illuminating experience of the entire program because it most directly forces them to consider their identity as rural aliens in the urban center.

CONCLUSION: The Unfamiliar and the Ultra-Familiar

*Using the metaphors and symbols that, because of some timely need, just happen to catch on, all cultures invent rituals and practices of faith, or of form. Similarly, many cultures make room for their own contradiction.*

The contradiction that results from these forays into urban centers is, for the rural alien, a fresh appreciation for the ultra-familiar, which can best be defined, because of its intimacy and proximity, as the familial. Through cultural immersion and disjunction, students engage the continuity of architecture across geographic and cultural boundaries. These programs strengthen the rural student by situating them as the diverse (i.e. minority) participant in foreign urban centers. This re-contextualization engenders heightened critical observation, a direct experience of diversity, and, ultimately, an inquiry of the students’ ultra-familiar surroundings that confront them upon their return. Through travel, the Middle-
America student is re-cast as an alien in a familiar land, leading to a more objective reflection on the nature of their surroundings. As one student commented upon returning from Chicago, “I felt a new appreciation for my living conditions and began to recognize how Fayetteville can maintain its distinct cultural richness, or lose it.”

NOTES

2 Ibid.
7 Ibid.
8 Data provided by the University of Arkansas Office of Institutional Research: http://www.uark.edu/admin/uadata/
9 Current University of Arkansas Department of Architecture alumni records, graduating B.Arch students 1994-2003 with current home addresses in the state of Arkansas.
12 “As they were intent on ‘modernizing’ the country, none of (Mexico’s) rulers—all of them surrounded by ‘expert’ counselors and ideologists—realized in time the perils of the population’s excessive and uncontrolled growth…Nor did they take measures against the demographic, political, economic, and cultural centralization that has converted Mexico City into a monstrous inflated head, crushing the frail body that holds it up.” Octavio Paz, “Return to the Labyrinth of Solitude” (New York: Grove Weidenfelds, 1985)
14 The idea of a “Grand Tour” originated in the 17th Century as a way of finishing an architect’s education through a process of “seeing” and studying the great architecture of the world first-hand.
15 Data provided by the University of Arkansas Office of Institutional Research: http://www.uark.edu/admin/uadata/
16 Data collected from the fall 2003 Architectural Design III (University of Arkansas) course evaluation survey, Korydon Smith, studio coordinator.
17 Ozick.
18 Due to the large influx of Mexican immigrants, there are communities far inland from the border that are beginning to resemble US/Mexican border towns. 800 miles reflects the distance between NW Arkansas and Nuevo Laredo Mexico on the Texas/Mexico border. Nancy Gibbs, “A Whole New World.” Time Magazine Special Edition: Welcome to Amexica, Vol157, No. 23 (June, 11 2001). The idea is paraphrased from Edwin Mitchell, 77, in Dalton Georgia, as quoted in the article: “We’re a border community—1,000 miles away from the border.”
22 Unidentified University of Arkansas Department of Architecture 2nd year student in an anonymous survey conducted following the Chicago Trip. The survey question was, “How were your perceptions of Fayetteville changed upon return from Chicago and completion of project 2B?”
In Western Africa the woven cloth is a receiver and transmitter of multivalent layers of information, presented simultaneously. The weaver is placed into the position of an interlocutor of social and cosmological information. He speaks through aspects of the cloth such as symbols, color relation usage, the weave and material. An example of the central role the process of weaving holds as a cultural foundation of ordering the universe, are the Dogon people, located in the Bandiagara hills of Mali. At the core of their creation myth is the act of weaving. The first and second words (of existence) are revealed in the form of a technical process, the process of weaving. The Dogon word for woven material is Soy, which also means word, which is also the word for the number seven the Nummo which brought the word. For them creation was spoken/ woven into existence and through this story, the “word” and weaving are made one. Each time the craftsman produces a weave, he is re-enacting the creation of the universe. He is bringing forth communication between the heavens and humanity.

The third word is the development of the granary, the organizing element of a social order, which is formed from a woven basket turned upside down. The classification of a world order… Architecture, the development of society and the storage of agriculture the center of society. The first social, architectural structure is the result of the weaving process.

It is important to start with the Dogon creation myth in order to establish the reverence afforded the craft of weaving within one of the many strands of West African culture that make up the patchwork tapestry of the African-American oeuvre. The Akan of Ghana, believe the universe was created by a supreme being, whom they refer to variously as Oboadee (Creator), Nyame (God), Odomankoma (Infinite, Inventor), Anase Kokuroko (The Great Spider; The Great Designer). Which leads us to a more colloquial example of this reverence for weaving; the word and the woven artifact are the countless “Anansi” the spider tales told throughout West Africa the Caribbean and South and North America, in communities of African descent. While the stories focus on the wisdom, trickery and craftiness of this cultural hero. The underlying lessons of the many parables are to convey a conceptual structuring of the world as many strands, within a web or cloth, that must be carefully spun and woven.

Secretary of the Cloth
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Originally from Buffalo, New York, Scott Ruff received both a bachelor of architecture degree and master of architecture degree from Cornell University. In 1992 he received the Alpha Rho Chi medal for leadership and service. In 1999 he received a the Eidlitz travel fellowship to do research in Nigeria. He gained professional experience as an architect from Foit-Albert and Associates.

Prior to joining the Syracuse School of Architecture faculty, Ruff taught at the Hampton University Department of Architecture, the State University of New York at Buffalo School of Architecture and Planning, and the Cornell University School of Architecture, Art and Planning. He has been an invited juror at the University of Virginia and the University of Michigan. In 2003 Ruff formed Ruff Works Studio, a research/design studio. One of the main subjects of inquiry for Ruff and the studio is the research and cultivation of African-American aesthetics in spatial design. His seminar “Gender, Race, and Contemporary Culture in Architecture” is an exploration of identity and its relationship in the conceptualization and practice of architecture.

Ground Weave

In Western Africa the woven cloth is a receiver and transmitter of multivalent layers of information, presented simultaneously. The weaver is placed into the position of an interlocutor of social and cosmological information. He speaks through aspects of the cloth such as symbols, color relation usage, the weave and material. An example of the central role the process of weaving holds as a cultural foundation of ordering the universe, are the Dogon people, located in the Bandiagara hills of Mali. At the core of their creation myth is the act of weaving. The Dogon word for woven material is Soy, which also means word, which is also the word for the number seven the Nummo which brought the word. For them creation was spoken/ woven into existence and through this story, the “word” and weaving are made one. Each time the craftsman produces a weave, he is re-enacting the creation of the universe. He is bringing forth communication between the heavens and humanity.

The third word is the development of the granary, the organizing element of a social order, which is formed from a woven basket turned upside down. The classification of a world order... Architecture, the development of society and the storage of agriculture the center of society. The first social, architectural structure is the result of the weaving process.

It is important to start with the Dogon creation myth in order to establish the reverence afforded the craft of weaving within one of the many strands of West African culture that make up the patchwork tapestry of the African-American oeuvre. The Akan of Ghana, believe the universe was created by a supreme being, whom they refer to variously as Oboadee (Creator), Nyame (God), Odomankoma (Infinite, Inventor), Anase Kokuroko (The Great Spider; The Great Designer). Which leads us to a more colloquial example of this reverence for weaving; the word and the woven artifact are the countless “Anansi” the spider tales told throughout West Africa the Caribbean and South and North America, in communities of African descent. While the stories focus on the wisdom, trickery and craftiness of this cultural hero. The underlying lessons of the many parables are to convey a conceptual structuring of the world as many strands, within a web or cloth, that must be carefully spun and woven.

Peggy Stolz Gilfoy, curator of the 1987-1988 exhibition Patterns of Life: West African Strip Weaving Traditions, states:

Perhaps more than any other art form, textiles reflect the cultures from which they come. They are simultaneously personal, social, religious, and political, and they are valuable vehicles for the spread of ideas from one culture to another. In Africa their use and dissemination is documented for over two thousand years. African weaving is a vibrant medium that conveys the essence of an African aesthetic.

It is weaving’s inter-connected-ness with so many aspects of culture and the strength of its practice that make it an ideal subject for an investigation of African aesthetic principles transposed into contemporary architectural discourse. The obvious medium to study for a discussion of African concepts in architecture might be African architecture. But, much of contemporary African architecture is so influenced by European aesthetics that it is beneficial to study other contemporary African cultural productions, which have a stronger history of continuity with traditional aesthetic values, to better understand what some specific aspects of African aesthetics are. (See Figure 1.)

Connection

The weaving process focused on in this document is known as strip weaving as practiced in West Africa. Most of the cloths studied are of Asante and Ewe origin and are commonly referred to as Kente cloth. This particular cloth is chosen because of its strong contemporary presence in the collective consciousness of so many people of African descent. It is also chosen because of the clarity and high level of skill in which the artifacts deploy aesthetic principles particular to cultures in the Western part of the African continent.

Kente is an Asante ceremonial cloth hand-woven on a horizontal treadle loom. Strips measuring about 4 inches wide are sewn together into larger...
pieces of cloths. Cloths come in various colors, sizes and designs and are worn during very important social and religious occasions. In a total cultural context, kente is more important than just a cloth. It is a visual representation of history, philosophy, ethics, oral literature, moral values, social code, of conduct, religious beliefs, political thought, and aesthetic principles. The term kente has its roots in the word kenten, which means a basket. The first kente weavers used raffia fibers to weave cloths that looked like kenten (a basket); and thus were referred to as kenten ntoma; meaning basket cloth. The original Asante name of the cloth was nsaduaso or nwontoma, meaning “a cloth hand-woven on a loom” and is still used today by Asante weavers and elders. How ever, the term kente is the most popularly used today, in and outside Ghana. Many variations of narrow-strip cloths, similar to kente, are woven by various ethnic groups in Ghana and elsewhere in Africa.5

Kente cloth re-enters the collective psyche of the African-American culture during the Black power movements of the late 1960’s and 1970’s. This movement recapitulates the Pan-African ideology progressed during the 1920’s by Marcus Garvy, whose motto was “Back to Africa”, which meant literally taking Africans here in America back to the Western Coast of the African Continent. This second wave of the Pan African movement entrenched its self in the United States and brought more Africa to America, re-infusing the African-American population with material culture from the “Mother Land” of Africa, hair being worn in a natural way, e.g. afros, braids, and locks. The informing of traditional “Western” holidays such as Christmas/ Kwanzaa with African based ceremonies and rituals and the donning of traditional West African garments, such as Danshiki, Jewlery and Kente Cloth. The cloth reappears in single strip, full cloths and in pattern designs on printed fabric. People have used the cloths in various manners from wearing the single strip of cloth for celebratory or ceremonial occasions, tablecloths to patterns within everyday clothing and other commercialized paraphernalia.

These cloths take on an important role in the understanding and continued formation of an African-Diasporic aesthetic ideology because of its strong contemporary presence as a crafted material artifact whose tradition of development is still in tact, through the vicissitudes of colonization in Africa and slavery. Because of the contemporary existence of the weaving craft in West Africa it is possible to observe fundamental relationships between African Diasporic design principles and West African Design principles and seeing West African Aesthetic sensibilities as a precedent to many textile cultural productions in the Diaspora outside of Africa. (See Figure 2.)

Analysis

The formal analysis of the cloth begins by using a swatch of a single Asante cloth and clarifying the most basic weaving compositions used. The swatch spans across three strips of composition. This study abstracts the cloth into two different, yet related 3 dimensional constructs, one that translates the patches of color into lines and planes and the other which translates the compositions into planes and solids. In Kente study 1, the colors are abstracted into thin planes of the same thickness. The planes are then placed at varied heights and depths, each according to its related color. In Kente study 2, the lines are and blocks are of color are abstracted into solid forms, to establish a composition of massive objects. From a study of proportions is found four basic patterns used in the particular cloths analyzed. Within each strip of cloth there is a basic repeated composition ‘block’. Its horizontal to vertical relationship is 2:1 fig. This proportion is then broken down into two adjacent squares of proportion 1:1 and 1:1, articulated by a change in color between the two squares. The third block subdivides the two adjacent squares into a horizontal rhythm of 3:1:1:3 or ¾:1/4:1/4:3/4. The third block composition uses the same 2:1 rectangular space and sub-divides its length in to three areas of color separated by two slightly larger spaces 1:1.5:1:1.5:1. The final block is a continuous grounding of color or stripped composition, within the 2:1 proportion.

Break-Line Composition

One of the most intriguing practices at play within this tradition of strip weaving is the principle of “Break-line Patterning” or as will be referred to here as Break-line composition.6 One of the identifying characteristics of a good cloth is the play of, off beat phrasing in the unfolding of the overall design. Break-line composition is expressed in at least three major ways: Through slight or dramatic shifts in pattern alignment of adjoining strips. In the use of deliberate clashing dissonance of high effect colors, in willful contrastive, bold arrangements. And the seemingly random placement of design elements, a placement that is in fact a well-planned aesthetic system informed by cultural and personal mores.7 Peggy Stolz Gilfoyl dispels the notion that this preference for break-line composition as an accidental occurrence or a lack of skill. She explains how there are times within the compositions where alignment and continuity is desired in order to further bring out the skill employed by the artist of improvisation.

“It is important to credit the influence of the type of equipment used in West African weaving on textile design. Perhaps one of the reasons narrow-strip looms originally developed and continue to be used today is that they can produce nonsymmetrically designed cloths. The final composition is not a case of happenstance, but it is rather a carefully orchestrated rhythmic placement of design elements.”8

The anthropologist Robert Ferris Thompson attempts to answer the reason for such an aesthetic preference for change, shift, ap-
proximate alignment and non-alignment.

Why the frequent seemingly imperative suspension of expected patterning? … To keep spirits away. In Senegambia it was important to randomize the flow of paths, since “evil travels in straight lines.” And the Mande themselves coded, in discretionary irregularities of design, visual analogues to danger, matters too serious to impart directly…. Nevertheless, those pilgrims of the Mande concept of fedeny (individuality, with all its attendant dangers)- hunters and warriors, heroic weavers of off beat textiles- continue to venture into disordered regions, mirroring them, deflecting them with their dress, and come back, as Mary Douglas has memorably phrased, a parallel accomplishment, “with a power not available to those who have stayed in control of…. society.”

In this context break-line composition might also be understood as a spiritual talisman like the “Islamic Hand of Fatimma” a diverter of the evil eye, or in western terms a deflector of the gaze. The contrasting colors, constant shifts and breaks in expected pattern and the dance of figural objects, cause the eye to see but not rest upon the cloth or its wearer. (See Figure 3.)

Equipment

The form and structure of a kente cloth are tightly bound to the tools and methods of its production. The small width size of each strip is a direct result and reference to the horizontal looms employed by the traditionally nomadic craftsmen. The tools enable the weavers the ability to deploy their craft within many arenas and institutions of the culture. It also affords them the ability to put into practice the techniques of Break-line composition.

The West African narrow strip loom consists of upright poles to hold the superstructure and horizontal elements to control the path of the weaving thread. Warp threads are fastened at one end to a bar...next to the weaver and at the other end to a heavy dragstone...It is this tensioning device, along with the narrow width of the finished cloth strip, that distinguishes the West African men’s loom from other looms. (See Figure 3.)

This very unique and particularized machine allows for an extreme efficiency in its use of space, storage, economy, time, climate, local, and cultural mores, it “ensures security and the isolation of the cloth from offensive spirits.” Also the equipment for the craft is not very expensive “is a great boon” in an area where material and economic resources are scarce. As stated by Peter Adler and Nicholas Barnard in African Majesty.

Time in hand to work is cheap in Africa; it is the raw materials, more often than not imported, that are expensive. The narrow- strip production of West Africa, and in particular that of the Ashante and the Ewe, must be the most labor intensive weaving, per square inch of produced cloth, known to man.

Techniques

General weaving techniques frequently used in the making of kente are utilized as architectural techniques for the three architectonic interventions presented.

- **Inserted weft.** Additional weft threads inserted in the structure in such a way that they deflect the ground weave.
- **Supplementary weft.** Nonstructural weft added over the ground weave to create a pattern. (See Figure 4.)
- **Tapestry weave.** The linking together of wefts of adjacent color areas each time they meet.
- **Weft wrapping.** Weft threads are carried manually over a group of warps and then wrapped around part of the group. (See Figure 4.)
Deployment of the Weave

**Appropriated Space: Exhibition stands**, is an installation of temporary stands for the display of architectural models within a two-story space. The conceptual approach to the project was to employ nomadic tactics. A mode of building similar to the weaving looms used by West African craftsmen. A functional device able to be easily transported by a single individual; made of easy to acquire materials and able to adapt to many different site conditions but also able to be anchored to the site, both physically and conceptually. The connection or no-connection detail of the stands to the railing is a study in joining by adjacency, friction, balance and gravity, soft connections, the way a weave holds together. (See Figure 5.)

**Appropriated Space: Column and Beam**, is similar to Appropriated Space: Exhibition stands. It employs ideas of nomadism and appropriation. It is an installation placed into a rental apartment. Again a mode of construction which could be carried and implemented by one person was a key factor in the elements used in the project.

**S1 W** is a small two-story side entry colonial style home located in Syracuse New York’s eastside. The basic program for the spatial appropriation of the house through strategically placed interventions is the redesign of the main entry foyer, the kitchen, a lavatory, the living room, storage space in the bedrooms and studio. The design, while addressing many practical issues, is conceptually based in an architectural theory of weaving. The primary strategy utilized in this appropriation looks at the spatial intervention as an African artifact, ascribing to an understanding that most African artifacts are also functional tools within the society: art, craft, history, religion and function are bound together, in one object, linking it to the culture. Within this basic strategy is employed a set of tactics that reference Black culture from multiple perspectives. The tactics found in this design use architectural translations of design principles and techniques found in the weaving tradition such as break-line composition, weft wrapping and supplementary weft. (See Figure 6.)

The three projects shown in this presentation are small low-tech projects, much like the horizontal weaving looms, highly conscious of their particular economy of means and time, for installation. Each altering the perception of space or enhancing the function of the space through, rhythm, repetition, variation, break-line composition, line and surface. Each, like the kente cloths, incorporates ideas born from the techniques and principles of weaving with other more abstract concepts that make reference to African-American cultural experiences. For example, S1W and Appropriated Space intentionally employ concepts found in the language of Ebonics, multiplicity and transposition of conceptual meaning/reading such as bad, dope, fresh, hype, all meaning good and emphatic embellishment like “mo’ better”. This list of parallel references to language or cultural narratives could go on and only speaks to another aspect of the concept of weaving, the interweaving of many ideas into one composition. But that discussion presents aesthetic concepts not strongly easily explained through the craft of weaving and possibly over complicates one of the principles that are best shown through the cloth.

Arguably, the concept of weaving is one of the cornerstones of the West African Diaspora collective consciousness. From Africa to Europe to the Americas weaving is found within the cosmology and the folktales of most if not all cultures of African descent. It is also just as clear that the textile arts play a major role in the social tradition of these same cultures. This is what makes a cultural production such as kente cloths powerful resources for the study of African aesthetics. They are graphic embodiments of the same creative values, mores and spirit found in African music, dance and religion. It is made plain in this document that through even the basic study of these cultural creative productions it is possible to inform and develop contemporary architectural practices grounded in the knowledge of Africa.

A tectonic intention of the project is to work in conjunction with the existing house composition, “not to willfully destroy the old for the new”. This objective is most clearly displayed in the relationship between the new and the old structures. Each of the new installations lightly and or minimally engages the existing structure.

Economy of the work is addressed through resource, material and means. Starting

Figure 5: Appropriated Space: Exhibition stands.

Figure 6: S1W Axonometric of Interwoven interventions.
with little to no money, much of the demolition, rough work and the intricate architectural connections were done by the designer and the client. Metal work and fine cabinetry were sub-contracted.

Programmatically, the project questions the architectural notion of “serving vs. served” space. Closets, serving tables and holders become focal points in the house, not hidden away behind walls or minor accent pieces of furniture. The fragments within the composition are precariously defined between Architecture and furniture. An example of this is the serving table in the Dining room space of the house. It is at once a service piece, usually something to overlook or look through, becomes a sculpture like piece in the space, drawing attention to its location as well as its self. This relates to the difficult to name and position cultural heritage of African-Americans. Avoided in this intervention are cliché reference to two dimensional pattern and contrasting colors. The focus instead is on a study of African based concepts incorporated into contemporary programs and form.

Endnotes:
1 Marcel Griaule, Conversatoins with Ogotemmeli: An introduction to Dogon religious ideas (International African Institute 1965, London), pgs. 28-29
- The first word, When Nummo speaks, what comes from his mouth is a warm vapor, which conveys, and itself constitutes, speech. This vapor, like all water, has sound, dies away in a helicoid line. The coiled fringes of the skirt were therefore the chosen vehicle for the words which the Spirits desired to reveal to the earth. He endued his hands with magic power by raising them to his lips while he plaited the skirt, so that the moister of his words was imparted to the damp plaits, and the spiritual revelation was embodied in the technical instruction…. Thus the earth had a language, the first language of this world and the most primitive of all time…. The words were breathed sounds.
- The second word, At sunrise on the appointed day the seventh ancestor Spirit spat out eighty threads of cotton; these he distributed between his upper teeth which acted as the teeth of a weaver’s reed. In this way he made the uneven threads of a warp. He did the same with the lower teeth to make the even threads. By opening and shutting his jaws the Spirit caused the threads of the warp to make the movements required in weaving. His whole face took part in the work, his nose studs serving as the block, while the stud in his lower lip was the shuttle.
As the threads crossed and uncrossed, the two tips of the Spirit’s forked tongue pushed the thread of the weft to and fro, and the web took shape from his mouth in the breath on the second revealed Word.
2 Ibid. pg. 28
3 Ibid. pg. 31
He (the first ancestor) took a woven basket with a circular opening and a square base in which to carry the earth and puddled clay required for the construction of a world-system… This basket served as a model for a basket-work structure of considerable size which he built upside down.. this frame work he covered with puddled clay made of the earth from heavan.
5 Sankofa Publications Web site
6 Peggy Stoltz Gilfoy, 46
7 Ibid. 47
8 Ibid. 46
9 Robert Thompson, Flash of the Spirit pgs. 221- 222
10 Peggy Stoltz Gilfoy, pg. 46
11 Ibid. pg. 11
12 Peter Adler and Nicholas Barnard, African Majesty: The Textile Art of the Ashanti and Ewe (London 1992). pg. 30
13 Ibid. pg. 30
Shades of Gray; Diversity and the Beginning Design Student

Viewed not solely in provisions of black or white, we believe the issues of architectural education, especially the beginning design student, must be approached in architectural terms. Terms we feel can be approached by an analogous discussion concerning gray. This presentation will assess these points from both theoretical and practical angles, first questioning the areas of gray and then providing examples where ambiguity is both important and valid, discussing how they blur, and unifying the division between black and white.

The Oxford English Dictionary defines gray as halfway between black and white. A conference on the beginning design student that is entitled Not White suggests how other shades can infuse to make a landscape that is not entirely white. As an analogy, gray can represent the diversity of students where they are a mixture of black and white, brown, red, tan and yellow. But more importantly, we may ask for clarification of the role of architectural education in this equation. Architectural education is never absolute, it is constantly evolving, rules are not steadfast and can be broken. In some cases, we may even question the most definitive concept of gravity. Especially when teaching beginning design, our role as educators is to break down preconceived ideas and allow students to explore and transform. The more tightly controlled the rules, the less students are able to grow and develop. Obviously direction is necessary, with the rules of black and white carefully considered sensitive solutions should be the primary goal. Beginning design students must learn to think in architectural terms instead of memorizing rules of the past. Thus learning to view in shades of gray allows for questioning, balanced by responsibility.

Gray is neutral, not black nor white. Gray might evoke the marginal, where things are more exciting and dangerous. Existing on the edge, the margin, describes the place of uncertainty and also the place of diversity. The margin represents the undefined, the yet to be defined. In the case of illuminated manuscripts, the edge constitutes the boundaries open to interpretation and the opposing comments. Gray might also represent the melding where the two (black or white) do not abandon their identities, but may find a common ground.

Architecture and architectural students are not a matter or either/or but rather and. We believe this extends to issues of media for representation, not just the hand, not just the computer but all as appropriate. As an inclusive issue concerning students, design ideas should also be inclusive and tolerated. This does not mark the end of criticism, but instead suggests a way to view ideas through context to assign appropriateness. Understanding diversity of ideas must also stimulate the diversity of humans.
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We believe that it can be detrimental for beginning design students to think only in terms of black or white. To say that one sees things only in terms of black and white is an analogy that describes a belief in overly defined and clear concepts. However, architects, especially designers, are constantly working with the in-between gray areas of undefined things. For example, architects must define, from the gray area of the unknown, future buildings as places of inhabitation. Developing beginning design students' abilities to successfully work within such gray area of undefined things can be greatly affected by how we as educators approach the pedagogy of the studio. This discussion may best approached by an analogous discussion concerning gray, and subsequently ideas of play as opposed to freeplay, and the phenomenon of governing.

We can define gray as between black and white. A conference on the beginning design student that is entitled Not White suggests how other shades can infuse to make a landscape that is not entirely white. Instead, this field should represent the mixture of all shades. When applied to a value scale, black is definitive with little variation, white is also singular in its interpretation. But the in-between area inhabited by gray contains a full range of values, where multiple shades are possible. Certainly gray evokes reference to words such as depression, dismal or dull, but the symbolism of the word gray suggests neutral. The color gray has been symbolic of death of the body, and Hebrew tradition relates the color gray to wisdom. While recognizing the meanings and associations of the word gray, we would advocate that looking at aspects of the word gray will give us, as educators, insight into diversity for the beginning design students, both ethnic diversity and diversity of ideas.

One definition of gray indicates ‘neutral,’ but it can also mean ‘having an intermediate and often vaguely defined position, condition or character,’ such as the gray area where things are less defined. This ambiguity may question the definitive position of beginning architectural education. Once totally defined, the project for the student loses mystery and potential. A common problem in studio arises as students refuse or are unable to bring their projects to conclusion. The fascination with the architecture in its ambiguous state is attractive. This state of process emphasizes its potentialities and ‘pure possibility.’

Reveling in ambiguity concentrates on the fluidity of the project and allows for constant reworking. In another analogy, this ambiguity might make the students less definable. This neutrality of the in-between may suggest a commonality or a ‘color blindness,’ that ignores individuality. Forfeiting individuality is hardly a goal for architectural education, but when viewing students, a common ground or less extreme position might be advantageous. This position is not necessarily advocating conservative architecture, but rather we are proposing a type of maturity that represents a well-considered architecture. When Icarus flew too close to the sun, it was acutely evident that the design and construction of his wings were faulty. A mature or ‘medium’ in-between position can also be one of mediation. In this instance, it may be the central position that can mediate between extremes, allow individuality, but provide the ‘give and take’ that encourages both to prosper. This mediation helps promote dialogue, vital to learning.

But more importantly, we may ask for clarification of the role of architectural beginning design students’ education in this equation. Architectural education as a whole is never absolute, as constantly evolving rules are not steadfast and can be broken. In some cases, we may even question the most definitive concept of gravity. Especially when teaching beginning design, our role as educators breaks down their preconceptions and allows students to explore and transform. The more tightly controlled the rules, the less students are able to grow and develop. Beginning design students must learn to think in architectural terms instead of memorizing rules of the past. Obviously, some direction is necessary, with the rules of black and white carefully considered; sensitive solutions should be the primary goal. Thus learning to perceive within the in-between shades of gray allows for questioning, balanced with responsibility.

We might view a dichotomy between the unquestioning faith in and the open questioning created by gray areas. In architectural education we should consider how much flexibility is allowed within the gray. In other words, in order to define within the gray, rules formulate the structure but we must recognize the fluctuation and recalibration that can alter
these tenets. Allowing for diversity created by gray areas also permits those rules to be indeterminate. They must have flux, or evolve, as canons, for the educational system to take new elements into consideration. We might not be able to say that architectural education is progressing, but it is certainly evolving.

In another analogy, we might liken the typical approach to beginning architectural education to be similar to a pendulum. The pendulum, constantly in motion, swings between trends and movements of philosophy or approach. With the change, new opportunities are realized, as the voids left by the pendulum’s movement can be filled by the in-between/gray areas of undefined thought. The gray, in-between areas are appropriate moments for allowing diversity of ideas. These moments are particularly poignant because the changes can happen at moments of turmoil and then become integrated into the design process. The use of gray areas can be integrated into the studio allowing diverse concepts to flourish. The diversity of gender, ethnicity, approaches to design and basic tenets can move into and influence the design of our beginning design students.

This combination of movement and diversity may be likened to play because the degrees of play can be loose for flexibility or tightened to limit tolerance. If we consider a meaning of play that involves room for movement, we find as Joel Weinsheimer writes, that play is dependent upon limits and restrictions. “[I]t is also true that the limits imposed are themselves restricted by the need for play.” A game that is too restricting has no movement or flexibility; consequently, the play is no longer interesting and it could be said it has no play. Marco Frascari expresses this seizing up of play by the example of play versus tolerance in a joint. The joint must have play in order to move and work. Tolerance is either something that is required or a mistake, and is not built into, or designed, to allow for free movement and play. To leave some play means to leave some vagueness. In addition, play as a philosophical movement has many approaches. It can be the “give and take” of dialogue in a design process. It constitutes a mode of learning, where an understanding can be found through this dialogue. It is also representative, as it is the less serious situation that stands for another more serious action. Being playful requires an amount of seriousness and should not be construed as frivolous. Play needs tremendous work to try alternatives and build successive refinements. This visual dialogue also must involve careful consideration, especially the commitment to listen to the information emitted by the media. This interpretation utilizes the playful intervals.

Play comprises an activity that loses its potency when discontinued. It can not be repeated exactly the same way, and when the action is finished the mood changes. For example dance is a manner of play, once finished the dance may exist as choreography notation, but it is no longer the dance. Play is guided by boundaries that make the play an activity in which to stretch against these boundaries. More creative solutions stem from irregular boundaries. The gray areas of vagueness need restrictions for dialogue. Although the play is never static, it adjusts to the game as it is played. In other words, it tests the tolerance. Through play, the players adapt to a changing world and it is this change that enriches the play.

Boundaries that are too restrictive can limit creativity and stifle diversity of thought. Conversely, too much freedom can be compared to “free-play.” Without boundaries or criteria, it is impossible to make decisions. The gray area is best for functioning, where students may find solutions themselves, not in fear of experimentation. They learn through their own dialogue of making and remaking. This learning process, of course, requires direction. But as we know, the more open and vague project statement produces the most varied solutions, and often the most creative and less expected outcomes. To stretch this analogy further, the playful diversity of the student body enriches the dialogue and allows interaction and infuses architectural thinking with the different. Here the shades of gray have been altered by changing attitudes and preconceived ideas. A mixture of gender economic and ethic groups enriches the experience, allowing for play and the activities of play. Boundaries can be stretched and new discoveries occur as diverse groups relate.

Gray is neutral, not black nor white. However without gray you cannot find and understand the black and white. Gray might evoke the marginal, where things are more exciting and dangerous. Existing between edges, a gray area, describes the place of uncertainty and also the place of diversity. Gray represents the undefined, the yet to be defined. In the case of illuminated manuscripts, the edge constitutes the boundaries open to interpretation and the opposing comments. A margin is “that part of the surface which lies immediately within its boundary, especially when in some way marked off or distinguished from the rest of the
A margin is “a condition which closely approximates to the limit below or beyond which something ceases to be possible or desirable.”7 It is also something additional that can account for unseen contingencies. A margin is the edge of a text, often used for summary or commentary.

When beginning design students’ first engage a project, they typically inhabit the gray areas of the marginal in that it is incomplete and undefined. Such projects hover on the edge between being something and being unintelligible for they contain a yet to be defined vagueness. Entering students themselves are the ambiguous and architecturally undefined. Similar to the concept of play, which does not have clearly defined boundaries, they may coincide with haphazard action. The rules for play are those contained in the play, and a developing design must also play within certain confines.

The gray areas of the margin are also that which is ‘on the boundary edge,’ both literally and figuratively. It thus connotes danger, revolution, pure possibility, fantasy and irresponsibility. The margin also suggests the doubtful, the unknown and fearful living. ‘Living on the edge’ is distinctly living in a state of the unknown, not within the lines of accepted behavior, and it can be risky. The field of architecture is filled with ‘risky’ behavior. Defining the future is risky, as is architectural education. We are never certain of the outcome and we must trust in our ‘product,’ the student.

We believe the beginning design student, must be able to successfully engage the gray aspects of the ambiguous. Encouraging our beginning design students to engage gray areas in their designs can also allow a diversity of ideas to flourish. For this to happen beginning studios should not be a place full of absolutes but constantly evolving where rules are not steadfast but gray and can be broken. It is our role as educators to break down preconceived ideas and allow students to explore and transform. While some structure and direction for studio is necessary, generally the more we overly restrict, the less students are able to grow and develop as designers. Beginning design students must learn to think in architectural terms instead of memorizing rules of the past. Thus learning to work within shades of gray allows for questioning, balanced by responsibility.

NOTES
3 From a seminar by Dr. Marco Frascari at Georgia Tech on Representation (Spring 1988).
4 Design needs ‘allusion’ to allow for the activity of play.
7 Oxford English Dictionary.
The abundance of (visual) communication methods available to students and architects continues to increase exponentially as digital technologies and software have become a part of everyday life in architectural education. Often, traditional and digital methods of representation are offered as “segregated” courses that subsequently imply an “either/or” attitude towards methods of representation. This paper presents the restructuring of the visual communication component of the Miami University undergraduate curriculum in which 4 new core courses were created that integrate traditional and digital representation methods. Diversity is addressed not through an emphasis on various cultures, etc., but rather through the thought processes and actions that encourage multiple ways of “seeing” and understanding. The pedagogy of the courses attempts to address “critical-seeing” and the politics of vision/imagery in our understanding of visual information and to illuminate the inherent physical and cognitive differences (making, thinking, seeing/perceiving, understanding) in the application of various traditional and digital techniques and methods. In addition to these four core courses that are taken sequentially during the first four semesters, new upper-level studios and seminars/electives reinforce “both/and” / hybrid processes of thinking and communication in design and are utilized as venues to address and synthesize “traditional” topics regarding diversity (race, class, ethnicity, etc.) in more purposeful ways.

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Drawings, models and more recently computer-graphics and animation are typical components of the language of designers/architects, which follow their own set of rules, vocabulary and grammar. The diversity and complexity of this language – just as if one made an analogy to e.g., cultural diversity - can be perceived as overwhelming and threatening or enlightening (depending on one’s ideological position). In any case, the language and the visual information that is communicated are both representational and pedagogical since they possess the potential of “teaching” viewers something that was previously not understood. Pedagogical can be understood as pertaining to the viewer or the author and in the case of the author - a designer/architect/student - the process of communicating visually is an invaluable aid for understanding a diverse and complex world, as well as a practice for navigating it. At Miami University, we are attempting to put a process that embraces multiple ways of action at the forefront of a new visual communications curriculum that has been in place since 2001.

The proliferation and accessibility of new, visualization software and the dominance of a culture of vision in many aspects of life, has forced us to re-evaluate, re-assess and re-think the architecture curriculum. However, along with “new media” developments in the field of visual communications, the amount of relevant information and possibilities in all areas of the curriculum (service learning, interdisciplinary studies, non-traditional/non-Western history and theory, etc.), compounded by the lop-sided demographics of the Miami University student body (an especially affluent, white, suburban majority with only 6.8% minority enrollment in the 2003 first-year class) and the impossibility to include “everything” within a four-year timeframe, has demanded that we look strategically and from multiple vantage points in order to offer a deeper, diverse and more holistic education. Thus, for the visual communication core courses a strategy has been used to develop a pedagogy that reinforces the critical-seeing/thinking/representing process essential to architecture, diversity or learning in general, without overwhelming students with specific, complex issues (race, non-Western traditions, etc.) that not only demand more attention but, are addressed in many other courses. In other words, a “both-and” way of seeing, understanding and acting - as a metaphor for diversity - has been developed as the thread that ties not only visual communication courses together but, other courses within our curriculum as well.

Semester One / First-year: Learning to Look (skills addressed: free-hand drawing, orthographics – plan / section / elevation, graphite/charcoal rendering, model-building, photography, collage)

During the conceptualization of the first semester, the three main concerns were: What are the basic visual communication skills students need to know in a 4-year curriculum that includes design studios in every semester? How do we integrate the development of vocational/“mechanical” skills with broader issues of vision and representation? Should students begin working with a computer in the first semester and if not, why and when?

Although the intention was to engrain in students a working mentality of “both-and” in regards to traditional and digital media, as well as in general attitudes and thinking, the decision was made to postpone work done on computers until the second semester. In consideration of the entire curriculum and the values of the department, it was determined that an understanding of 3-dimensional physical space and the process of assembly – i.e., “making” was paramount in the early development of the students. Thus, practices that are grounded in direct and comprehensible processes of action/result (making) along with the development of an understanding of space, physical phenomena (wind, light, sound, etc.) and an awareness of a student’s own physical/environmental context became the foundation around which the semester would operate. Craft, an issue that transgresses the border between traditional and digital processes and its connection to questions of perception and representation, was also a common theme introduced here, which also runs through all of the graphics courses.

The initial exercises center around the development of hand-eye coordination and more importantly, the activation of the right lobe of the brain – the cranial center of creative work and visual objectivity. A series of sequential exercises that focus on the study, understanding and manipulation of light provide a framework to address issues of space, composition and craft. In discussions about defining space, we touch upon the question of e.g., “whose space is it?” Discussions around composition take up issues of framing – what is revealed, what is “real” and what is / may be hidden. Examples from e.g., Jeff Wall, the daily news media, landscape painting and photography, as well as the students’ own photographic work are used as examples of composition, context and manipulation through framing. Finally, issues of craft are dealt with through discussions that include perceptions and preconceptions. How does an artifact, drawing, signature begin to reveal something about its author and how might it be interpreted or misinterpreted? In the final portion of the course, students produce several perspective drawings. The first is of an existing public space in the Department’s building and the others are design studies of their studio project.
Here, discussion revolves around the differences of framing and representing something that seems to be generally “known” versus the challenge and responsibility of presenting something that is generally “unknown”.

**Semester Two / First-year: Methods of Presentation, Representation and Re-Presentation** (skills addressed: free-hand drawing, orthographics – plan / section / elevation, paraline – axonometric / isometric, shadow construction, colored pencil rendering, model-building (using power tools), image manipulation (Photoshop), montage (Photoshop), graphics (Illustrator), interactive documentation / media / presentation (GoLive / Dreamweaver)

The second semester of study attempts to reinforce skills learned in the first, as well as introducing additional “traditional” methods of “making” and rendering. As students develop and refine skills in design and drawing, additional topical issues of presentation and representation move to the forefront. Computers and particular software (Photoshop, Illustrator, GoLive) are introduced as a means of enhancing, as well as expanding possibilities for representing / presenting student work.

After an initial exercise in the composition of space through axonometric drawings, studies using a “kit-of-parts”, architectural drawings and two-point perspectives, students begin working with computers and software. After several initial tutorials and small projects, students revisit the “kit-of-parts” project and are asked to produce a series of representations using Photoshop to “complete” the drawings (plans / elevations / sections / perspectives) by putting them into a “context” (photograph). The discussions focus on reinforcing what has already been learned (composition, framing, perspective, light, scale), as well as the choice of background imagery and its effects on the “reading” of each piece. Students are exposed to the expanded possibilities of representation of their work through computer software and are encouraged to experiment and reflect. The emphasis on the integration of traditional and digital media in representation raise questions about each media relative to time and effectiveness, the specific vs. the general and bridging ideas / intentions to “reality”.

As students begin to use the computer more and more over the course of the semester, inevitably, tangential discussions arise over e.g., what information “screen savers” communicate and the effect that they can have on the studio culture. Issues of appropriateness relative to e.g., gender, values and personal expression are typically at the center of such discussions.

The semester progresses with introductions into Adobe Illustrator and Adobe GoLive (web design) after which students produce both static / hard copy and interactive presentations of each student’s work over the course of the entire semester. Here, differences and appropriateness of the differing presentation methods are evaluated and discussed and the students are afforded the opportunity to revisit and reflect upon projects in order to assess their weaknesses, strengths and general learning. Additionally, similar to the first semester, there is an overlapping of the design studio projects with visual communications projects in the final 4-6 weeks as the students develop a more comprehensive set of skills to apply to more complex design projects.

**Semester Three / Second-year: Process and Product** (skills addressed: 3d-modeling software (Form-Z), model-building)

Semester three is integrated more closely with second-year studios in which students must begin to deal simultaneously with more complex issues regarding materiality, structure, context, and landscape.

The belief in the use of both digital and tactile methods of design and representation as a strategy for teaching continues to drive the third semester. The layering of computers over traditional tools of the architect is believed to be a necessary process in contemporary architectural education and “while the computer’s potential for enhancing innovative exploration in the design studio is widely reported in literature, many design educators see a pressing need to establish a critical appreciation of the ways in which it affects student learning, teaching practices and studio culture.”

In this third course, a shift to architectural 3D-modelling software and its integration into the design studio occurs. The focus of the course, while addressing necessary “tool-using / building”, is on “what we can and should do with computers and what computers might do to, and for us.”

Professor Murali Paranandi, who has done extensive research on the integration of 3D-modelling software into the design studio and served as a technical support engineer with auto*des*sys, the creators of Form-Z, has developed a model for introducing digital design that forces the student to reflect upon process as opposed to product. One introductory exercise requires that students write a short design “manifesto” or concept that defines “topology and characteristics” for an object (a favorite childhood character – e.g., cartoon). Next, students are required to build a “cardboard interpretation” with specific guidelines regarding size and strength. Afterwards, students are then required to design a “digital interpretation” of the manifesto / concept, before building a “cardboard reinterpretation” of the digital model, in order “to distinguish what the computer wanted to do that the cardboard could not.” Finally, there are extensive presentations and discussions that take place over the course of the semester during which the students can reflect and share experiences and observations – a learning experience that can easily be lost when each student is “locked” in front of their private, virtual world. In summary, Form-Z is introduced as a part of a thinking process that enables a student to conduct explorations that were before very time-consuming or simply not easily “comprehensible”, while simultaneously emphasizing and arousing an awareness of the process and differences to traditional methods of model making, designing, presenting and representing. The goal is to de-mystify the computer and open up possibilities in concert with traditional, tactile design, as opposed to limiting them through the seduction of a few impressive features or functions.

**Semester Four / Second-year: Synthesis and Experimentation** (skills addressed: CADD, advanced media techniques in watercolor and marker)

The final semester of the required four-course sequence is conceptually positioned to encourage students to reinforce their learning through experimentation. During this semester, students have an opportunity to synthesize their learning and apply all their skills and knowledge to a range of architectural projects in the design studio. The goal is to eliminate the “border” between the visual communications class and the design studio as much as possible, such that the synthesis is recognized and reinforced. There are however, new techniques still being introduced. Students learn a CAAD program (at the moment AutoCad. We would like to – if not completely remove it from this sequence – at least supplement it by exposing students to additional, superior CAD software), as well as marker and watercolor rendering. Again, a hybrid method of working / designing / representing is encouraged.
such that students are when and where appropriate crossing the digital-traditional borderlines between paper, chipboard, graphite, Photoshop, Illustrator, Form-Z, AutoCad, etc., and are prepared to continue in their explorations in architecture in the coming two years – and beyond.

Trouble-Shooting: Early Impressions

The following information here is not necessarily backed by scientific, quantitative data, but is rather an impression based on an informal, third-year self-assessment of our program. The initial, seemingly unconditional acceptance and rapid spread of the computer into academe and the profession in the late-eighties and early-nineties - perhaps due to its still strong, seductive power - has somehow led to a cleft between faculty who embrace and use the computer (and often denounce the “pencil, pen and cardboard”) and those who embrace and use traditional tools (and often denounce the computer). It still appears to be the case that traditional and digital methods of representation are often offered as “segregated” courses that subsequently reinforce an “either / or” attitude towards methods of design and representation. Although there is also a group in the middle, it appears that many were caught in the transitional period of their own education during which computers were a novelty item. As a result, it is still difficult to fill teaching positions with experienced instructors that are not only fluent in both “languages”, but can and want to speak them “simultaneously”.

The abundance of communication methods available to students and architects continues to increase exponentially, as digital technologies and software have become a part of everyday life in general, and in architectural education in particular. The ever-increasing number of software brought onto the market and the changes in each particular software (updates and new versions) has put a new twist on faculty learning, as well as a demand on time and a faculty’s already overloaded schedule. The quest to learn and teach / expose students to more and more software (similar to stuffing more and more cultures into a course on multiculturalism), although meaningful, ultimately raises questions about the “watering-down” of content and the depth of understanding.

While students generally agree that neither traditional or digital methods of design / representation are better than the other, they also asserted that, “using them in concert enriched the design process.” However, one of the largest challenges we now face is making this “realization” a part of a student’s everyday practice of design and life, for the unfortunate fact is that “realization” of a detrimental or beneficial condition does not necessarily result in a change of action in the future.

Conclusion: Diversity Across the Curriculum

The four-course core of the visual communications curriculum is seen as a component of a larger educational agenda dealing with diversity. Many other studios and seminars offer students more concentrated and effective ways of exposing students directly to diversity issues. For example, three design studios take students out of the “homogenous” context of the Oxford campus. A design / build studio based in the Miami University / Dept of Architecture’s Center for Community Engagement in Over-The-Rhine, Cincinnati, Ohio directed by Professor Thomas Dutton, is one in which students interact with community members in designing / rehabilitating / renovating e.g., low-income housing in one of Cincinnati’s most impoverished neighborhoods. The Ghana Summer Workshop, under the direction of Gail Della-Piana, is another service-learning experience during which students interact with the Ghanaian villagers of Abrapo-Odumasi each summer, designing and building structures such as a library, a reading “porch” / room, public composting toilets and a permanent market stand / shelter. Yet another Summer Workshop, directed by the author, takes students to Germany and The Netherlands to examine contemporary architecture within a larger context of European politics and national identity that has simultaneously nurtured an unusual climate / culture of social consciousness and xenophobia.

Other courses on the Oxford campus also address topics regarding diversity through various medium from seminar courses that deal with cities, politics, class, gender and race (Architecture and Society), to advanced computer-based courses that explore the forefront, to a seminar which examines public space and the politics of power that requires students to produce socially critical “manifestoes” in video-format using animation and film-editing software (The Visual Manifesto), just to describe a few.

The complexity of a globalized world has brought about through “Others”, the awareness to issues of diversity, environment and culture. In regards to diversity, the challenges are great at a university where some students have expressed that “diversity is being rammed down our throats”. The new four-course visual communications sequence at Miami University attempts to arouse awareness of diversity through the mixing of media and the reinforcement of “both-and” thought processes and actions that only initially appear to be detached from typical issues of race, gender, economics, etc. in order to illuminate a condition that is neither black, white or even gray but rather, as Richard Rodriguez states, “brown”.

NOTES


4. Ibid. The article contains a full description of process and products.

5. Ibid.

6. In his book Brown: The Last Discovery of America (Viking Press, 2002), Richard Rodriguez reflects upon the color brown as one which conveys mixing (of many colors / races) or “impurity”. He sees it as a condition that has long existed, but is now being “discovered”.

212 NOT WHITE: Diversity in Beginning Design Education
Not White (in the Usual Way): A Learning Laboratory for Diversity in Beginning Design Education

This paper will present a set of “ability criteria” common to a diverse collection of disciplines comprising a design college and which serve as a framework for its core program of beginning design education. It will elaborate on how the criteria have been utilized to develop the experimental course “Design Studies 102X: Learning Lab.” As the key component of the newly defined curriculum, this course crosses the disciplinary boundaries of six departments to provide a global perspective of design and create a richer educational experience for incoming students. Its foundation rests on a commitment to the question of how particular identity or difference, whether disciplinary habit, cultural construct or global concern can be accepted as a universal condition.

During the 2001-02 academic year, the faculty of the College of Design at Iowa State University envisioned, debated, then approved of a change that would effect each of its six departments in a profound way: the departments of Architecture, Art and Design, Community and Regional Planning, Graphic Design, Interior Design, and Landscape Architecture would consolidate their beginning design education programs into one core unit. All incoming students, regardless of their anticipated major, would emerge from the same programs into one core unit. This would be a “universal denominator” version of either of the professional programs, or clumsy, ill-formed hybrid. No part of the course (except what was planned as the final project) would focus on specific disciplinary knowledge or skills. Instead, the course would aspire to the goals of the college’s envisioning plan, which is to say it would be centered on “making” in the broadest sense of the word. Furthermore, and perhaps avoiding what amounts to a failure of similar initiatives, the course would not be about “inter-disciplinarity,” per se, because beginning students have no discipline expertise or knowledge to offer. Nor would it consider incoming students as tabula rasa, a problem that leads to a teacher-centered paradigm. Instead, the challenge of the course would be to link incoming students to a contemporary concern in which the broad and diverse community of design was currently engaged and which they could appreciate, all the while remaining “learner-centered.” That concern was the “everyday.” In all areas of design, there has been a growing interest in the commonplace, the un-monumental themes and routines of daily life. The developers determined that all students had their own version of this category of experience and, serving as a microcosm of the larger culture, their particularity would prove to be good ground on which to make a successful transition into design education. Thus, the course would be an extra-disciplinary, project-based learning studio exploring how design intersects with everyday life. As such, it would recognize as the threshold for beginning design education the particular knowledge already recorded by the disciplines comprising a design college and which serve as a framework for its core program of beginning design education. It will elaborate on how the criteria have been utilized to develop the experimental course “Design Studies 102X: Learning Lab.” As the key component of the newly defined curriculum, this course crosses the disciplinary boundaries of six departments to provide a global perspective of design and create a richer educational experience for incoming students. Its foundation rests on a commitment to the question of how particular identity or difference, whether disciplinary habit, cultural construct or global concern can be accepted as a universal condition.

A development team was formed consisting of one assistant professor (Arch.), three lecturers (Arch., Art/Design, LA/CRP), and two undergraduate research assistants (Arch., LA). Through initial debate, the idea emerged that the course should exist as an autonomous entity in the College, not a ‘watered-down-to-the-lowest-common-denominator’ version of either of the professional programs, or clumsy, ill-formed hybrid. No part of the course (except what was planned as the final project) would focus on specific disciplinary knowledge or skills. Instead, the course would aspire to the goals of the college’s envisioning plan, which is to say it would be centered on “making” in the broadest sense of the word. Furthermore, and perhaps avoiding what amounts to a failure of similar initiatives, Learning Lab would not be composed of bits and pieces from existing courses.

Contrary to expectations in the College, the developers concluded that Learning Lab, would not be about “inter-disciplinarity,” per se, because beginning students have no discipline expertise or knowledge to offer. Nor would it consider incoming students as tabula rasa, a problem that leads to a teacher-centered paradigm. Instead, the challenge of the course would be to link incoming students to a contemporary concern in which the broad and diverse community of design was currently engaged and which they could appreciate, all the while remaining “learner-centered.” That concern was the “everyday.” In all areas of design, there has been a growing interest in the commonplace, the un-monumental themes and routines of daily life. The developers determined that all students had their own version of this category of experience and, serving as a microcosm of the larger culture, their particularity would prove to be good ground on which to make a successful transition into design education. Thus, the course would be an extra-disciplinary, project-based learning studio exploring how design intersects with everyday life. As such, it would recognize as the threshold for beginning design education the particular knowledge already recorded by the disciplines comprising a design college and which serve as a framework for its core program of beginning design education. It will elaborate on how the criteria have been utilized to develop the experimental course “Design Studies 102X: Learning Lab.” As the key component of the newly defined curriculum, this course crosses the disciplinary boundaries of six departments to provide a global perspective of design and create a richer educational experience for incoming students. Its foundation rests on a commitment to the question of how particular identity or difference, whether disciplinary habit, cultural construct or global concern can be accepted as a universal condition.

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lived experiences of incoming students. Within this framework, the important work of design education can begin straightaway while remaining learner-centered and while anticipating particularity as the norm.

*Learning Lab* draws from everyday material culture, the lived experiences of everyday people, and the information and media systems within the everyday public domain, producing work that stimulates discussion and debate, engage the imagination, and provide an overall enhancement of beginning education in the College of Design. The course is structured around a series of current design initiatives from around the world: The Netherlands, Italy, the United States of America, Great Britain and Japan. These “not white (in the usual way)” initiatives serve as precedents for the work performed. These initiatives have been selected to foster an appreciation of design’s global interest to engage if not transform everyday life. Through critical thinking and project-based methods of invention and design, students engage (1) aesthetic and pragmatic conditions that influence the design of our everyday lives, (2) current trends in design and formal invention relative to everyday material culture, and (3) methods, strategies and resources used by designers to strengthen conceptual and critical thinking. Beginning students are assigned projects to work on in teams or as individuals, through which they begin developing the set of common abilities linking the various disciplines of the College, and which will enable them to engage the broad spectrum of design in a variety of modes and contexts.

**Demonstrative Learning: Abilities are the Outcomes**

Students of the *Learning Lab*, as the course was coined, were assured they already knew the world of the everyday and that it was perhaps all too familiar: a world where they stored various items; prepared, cooked and ate food; dressed and undressed the body; inhabit designed spaces; live as people. The course would try to engage parts of this world as though they were strange, looking with eyes that were more critical. Students would make images, objects, texts and spaces, in groups and as individuals, through which they begin developing the set of common abilities relating to the formulation of connections between identity, domestic routine and material culture. This very difficult rendering of the course was attempting to understand design as the articulation of variety of particular interests. Projects would then need to tease out greater degrees of contingency within the everyday material world instead of the normal rigidity to which we’ve grown accustomed. In essence, instead of being the universal condition to which everyone must subscribe, “whiteness” becomes that on which everyone can in-scribe or de-scribe their particular identity. Stated differently, “whiteness” becomes “not white (in the usual way).”

**Introduction**

Its authors defined it an “extra-disciplinary, project-based learning environment.” What was meant by “extra-disciplinary” was that no part of the experimental course, Design Studies 102X: *Strangely Familiar by Design*, would focus on the specific disciplinary knowledge and skills that frame the existing beginning design courses of the six departments comprising the College. Instead, the course aspired to the goals of the recent Envisioning Plan, a landmark initiative within the College to rethink beginning design education, which is to say the course would center on “making” in the broadest sense of the word. Furthermore, as stated in the envisioning document, no course planned for implementation should be composed of bits and pieces from existing courses. To that end, the authors of the Learning Lab sought to align the course with what seemed to be absent in the College, that is, with current design initiatives focusing on everyday aspects of material culture. This would be their strategic way of constructing a threshold allowing beginning design students a smooth transition for into design culture.

The underlying premise used by the authors was a commitment to the question of how particular identity or difference, whether that is a disciplinary habit, cultural construct or global concern could be accepted as the universal condition for which one could design. The projects gathered were to manifest consideration of design across multiple scales and enfolding an array of concerns relating to the formulation of connections between identity, domestic routine and material culture. This very difficult rendering of the course was attempting to understand design as the articulation of variety of particular interests. Projects would then need to tease out greater degrees of contingency within the everyday material world instead of the normal rigidity to which we’ve grown accustomed. In essence, instead of being the universal condition to which everyone must subscribe, “whiteness” becomes that on which everyone can in-scribe or de-scribe their particular identity. Stated differently, “whiteness” becomes “not white (in the usual way).”

**Demonstrative Learning: Abilities are the Outcomes**

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- translating ideas or viewed subjects into two-dimensional images and/or three-dimensional constructions, purposefully employing visual and material processes and media, *(begin to master the design process on a fundamental level)*
- investigating the external world and the world of thoughts, ideas and imagination, *(begin to think and inquire critically about the world)*
- analyzing and appraising a variety of design works, references and resources, *(begin to conduct design research)*
- collaborating on design teams, *(begin to interact respectfully)*
- appreciating craftsmanship *(begin developing a basic competency in combining technique and materials effectively and beautifully)*
- communicating about design clearly, willingly and convincingly, *(begin exercising basic literacy in oral, visual and written presentations)*
- evaluating and assessing their own work against that of peers and also what has preceded it historically, *(begin striving toward innovation)*
These abilities were considered demonstrative. The work emerging from them was the only evidence of what the beginning design student had learned, come to know or was able to do. Through carefully designed projects, students would develop an understanding of the content of a course—which is how design can be understood as a creative act that adds value to our everyday lives—while achieving necessary abilities. These anticipated outcomes would prove a beginning student capable of engaging design in a variety of modes and contexts. As such, with these abilities beginning to be acquired through the first year curriculum, a broad foundation is laid allowing for achievement regardless of a student’s eventual chosen discipline.

Criticality: the Key to Diversity in Beginning Design

The “x” suffix in the course number indicates, obviously, that the course was “experimental.” However, because the second ability outcome (“investigating the external world of thoughts, ideas and the imagination”) presented what seemed to be the most difficult to achieve, pointing to a more critical engagement by the design student, the authors thought it should also stand for two additional things. First, it would stand for “extraordinary making”. The kind of making that has power to magnify if not change conditions of the everyday as well as be beautiful and useful. The course would do this by being structured around current design initiatives that seek to transform otherwise ordinary objects and spaces through a number of different tactics, some of which were:

- surprise displacement (making the familiar strange),
- scale transposition (making the small large and the large small)
- unexpected objectification (elevating the commonplace to a status typically reserved for the ceremonial and the commemorative); or
- highlighting artificiality (altering the course of “nature”).

(Blauvelt, 2003)

Second, the “x” would stand for critical design, as in “x marks the spot.” Critical design is design that asks carefully crafted questions and makes us think. Often challenging and provocative, this form of design aims to push the cultural and aesthetic potential of design to its limit. Here’s a short list of the kind of critical design objects students were asked to make or explore in the Learning Lab:

- polemical objects: objects that force us to reconsider our relationship to products and that dictate new rituals of use and expectations of performance.
- multifunctional objects: objects that change both shape and use, thereby blurring the traditionally fixed relationship between so-called “form and function”.
- value fiction objects: objects that have technologies that are realistic but the social and cultural values are often fictional. The aim of these objects is to encourage viewers to ask themselves why the values embodied in the proposal seem ‘fictional’ or ‘unreal.’ Value fiction projects asks for the development of alternative and often gently provocative artifacts which set out to encourage people through humor, insight, surprise and wonder.

(Dunne and Raby, 2001)

The Shape of the Semester

Project 1: Do Shirt [about a multi-functional object] (See Figure 2.)

The semester began with a project that utilized a critically designed product from the Netherlands, an oversized white tee shirt called a ‘do shirt’. It was 10 times too big, but claimed to be 10 times more useful. Students were given a tee and asked, as the creators had invited, to propose a use for such a strangely familiar thing. There were three distinct phases to this project. For the first phase, students were to photograph the proposed use in a straightforward way that would capture the essence of the use. The ingenuity of the proposal would demonstrate how they had embraced the product to discern critical aspects relative to their everyday lives. The second phase required that each student take an image from a different group and alter the “content” of the image through techniques of montage and collage. The third phase required that students write a 500-word essay explaining the methods, strategies and resources used by the makers of the do shirt to strengthen the critical position of an everyday object of apparel.
Recognizing the broad familiarity and the almost universal role that objects of apparel play in the construction of identity, it is not difficult to see how the entire effort behind the do shirt was an attempt to elicit societal change through a brand name. Seldom is a brand started without a product in hand. Yet the publicity firm KesselsKramer of Amsterdam decided to create one. They called it ‘do.’ They developed a ‘do’ mentality, publicized it world wide then left it to be supported by products at a much later date. In fact, ‘do’ does not have any products or services of their own, but works with anyone who has an idea that fits the philosophy. That way, ‘do’ could be an ever-changing brand that would depend on what the public would do. As part of their anti-complacency position, the brand intended to foster social responsibility, concern for the planet, ideas for change, and a willingness to take action. (http://www.dosurf.com/)

What seemed to be a lighthearted, almost laughable venture turns out to be a rather serious and radical attempt to push design toward political action: for, in this project, we had at our disposal the work of a design enterprise that examines how problems inherent in our culture can be addressed through acts of design. This was the perfect project to initiate beginning students into the culture of design as well as set the stage for the remaining work, projects that were equally critical in their formulation.

Project 2: Terra! The Grass Arm Chair [about a polemical object] (See Figure 3.)

The second project engages a product from Italy, a cardboard frame and a bag of grass seed entitled Terra! The Grass Arm Chair. This project was delivered in two phases: (1) hands-on construction of the product, and (2) the creation of a similar design that we called a ‘matrix’. Like the do shirt, this project put the student in direct contact with a current design initiative. Nucleo Design Solutions is a young design firm in Torino, Italy, consisting of three women and two men. Their body of work includes graphic design, industrial design, interiors and exhibition/installation design, all emerging from questions concerning the needs of contemporary living. In the Terra! chair, they examine the potential for creating a personalized living environment. Their critique is that increasingly impersonal buildings and spaces dominate the world, and thus to counter they propose systems that do not just furnish a particular environment but allow users to learn about the environment by creating it. (http://www.nucleo.to/)

Given this thesis, Terra! The Grass Armchair suggests that the best way to learn about an object is to construct it. Nucleo would argue that no one has a greater degree of intimacy. So we located a site (the instructor’s back yard), obtained a Terra chair and set out to see if this was true. Not only were the students asked to consider Nucleo’s thesis but to imagine its implication for the design profession. Their final task was to produce a model of their own design using cardboard. Their matrix was given the “program” to allow the body to regain contact with one’s definition of “nature” or “culture.” It would have to be suitable for outdoor or indoor application. Nucleo’s ultimate claim is that the chair can be part of any “landscape.” “If you are in a desolate suburb surrounded with cement,” they encourage, “make it out of cement, if you live in front of an American highway, make it out of asphalt, if you are in the north pole, use snow….” (http://www.nucleo.to/)

Interlude: Material Witness (about material deployment in design) (See Figure 4.)

An interlude was constructed between the first two projects and the last two as a way of capitalizing on the material flexibility proposed by the Terra! chair. It was an opportunity to increase learning outcomes in the areas of collaboration, employing material processes, and analyzing and appraising design works. This “interlude” consisted of various teams examining the material, tectonic, spatial, or scale potential of the matrix. Three of these teams engaged in full-scale construction of their matrix. A second and more extensive writing assignment was also incorporated into the “interlude.”

Unlike the Interlude, the last two projects of the semester would present a drastic shift from physical making of this sort, putting students in contact with a newly defined “theory” of design and a form of urban design “research.”

Project 3: Placebo Project [about a value-fiction object] (See Figure 5.)

In Design Noir: the Secret Life of Electronic Objects, London-based designers Anthony Dunne and Fiona Raby explore the way we interact with electronic objects. They have proposed a new design genre, “Design Noir,” in which designers develop ideas for products that fulfill the more hidden desires of our everyday lives. Students were asked to create “placebo objects” constructed according to certain “value-fictions.” These objects would provide for a human need left un-addressed by design and would, of necessity, be somewhat disturbing, subversive, funny or poetic. By requesting them combine and/or manipulate ‘off-the-shelf’ products, this project hopes for a critical form of making, “product misuse.”

Project 4: Pet Architecture [about a surprising object] (See Figure 6.)

The final project, Pet Architecture, relies on a “guidebook” authored by Yoshiharu Tsukamoto of the Tokyo Institute of
Technology and Japanese design group Atelier Bow-Wow. This guidebook is a catalogue of 81 small buildings sited in unexpected places that are by-products of urban development. The studio project began with students participating in a “scavenger hunt” for similar architecture in the local community. It then moved on to programming, site selection and the execution of their final design project of pet architecture.

Assessment Check
For a total 29 studio days, 5 projects, 2 papers, 1 quiz, and 1 project statement constituted the workload. But what in fact was learned? How does anyone know for sure what students gain from having done an assignment? The authors of the Learning Lab were not content with attributing gains where they were not certain they had actually occurred. Therefore, with a few weeks remaining in the semester, a summative questionnaire was created to determine the students’ intellectual impression of what they had learned and to compare their responses to the stated learning outcomes. The questionnaire asked students to list five to seven things they had learned or considered important to have experienced in the course. Only a sampling of their responses are included, sufficient to show both the genuine nature of their reflection and the degree to which the authors were successful or unsuccessful in creating a smooth transition into design education by the use of the ‘everyday’ as the substantive framework for the course.

Student #1
1. The importance of little things.
2. Your ideas mean nothing if not on paper.
3. Things don’t have to be normal to be useful.

Student #2
1. How to recognize design in everything.
2. Also, the proper use of certain media.

Student #3
1. Everything can be considered design.
2. Criticism is good.
3. Things can have more than one use, and it may be something completely out of the ordinary

Student #4
1. The risks and benefits of open-ended team projects.
2. Project ideas take on lives of their own as they leave our direct control.
3. The benefit of remaining flexible.

Student #5
1. If you don’t get it right the first time, try, try, again.
Student #6
1. I have experienced [that] everyone’s different

Student #7
1. Not everything has to be totally original because chances are that someone else has done the same thing or something very similar.
2. Talk and share ideas.

Student #8
1. Form doesn’t necessarily follow function.
2. Criticism is okay and you need to learn from it.

Student #9
1. Things don’t always go your way.
2. Time is an issue.

Student #10
1. We have had to learn to put our thoughts into action by doing.

Student #11
1. Learn from other people’s work.
2. Listen to everyone’s input in a group.

Student #12
1. Being precise makes a difference when building a real thing.
2. Working with Student #6: being partners exchanging ideas and helping each other.
3. Learn more!! ALWAYS.

The complete set of 120 responses was then aligned with the seven learning outcomes by tallying the number of times they mentioned or implied the substance of those outcomes. All did not fit neatly into the predetermined categories but began to define new areas that were of equal importance. The alignment is as follows:

- translating ideas…[begin to master the design process on a fundamental level]
  - 24
- investigating the external world…[begin to think and inquire critically about the world]
  - 18
- analyzing and appraising references and resources…[begin to conduct design research]
  - 19
- collaborating on design teams…[begin to interact respectfully]
  - 10
- appreciating craftsmanship…[begin combining technique and materials effectively]
  - 14
- communicating about design…[begin exercising basic literacy in presentation]
  - 01
- assessing and evaluating your work…[begin valuing criticism and striving toward innovation]
  - 10

Other areas:
- time management
  - 07
- becoming a design student
  - 16
- about the professor
  - 01

Conclusion
The most demanding part of the course was to maintain a spirit of experimentation, inquiry and research in the design student. The best design studios are those where theories, techniques, and methods of design are constantly challenged, put into new configurations, or excavated for deeper meaning and a more positive effect. The devoted design students must see themselves, then, unafraid to take risks or to walk in the dark. During the “Interlude,” the work was frustrating, challenging, intimidating and nerve racking. Yet, it was also rewarding. It was all these things because no one knew, not even the studio instructor, what the end product ought be. This is not an admission of pedagogical irresponsibility, but reflects a way—the best way—to learn: that is, by discovery. We began this experimental course with a simple question: could we create a course for the new curriculum, whereby beginning design students could begin acquiring an initial set of abilities without being structured around discipline specificity and without having to disregard the knowledge and particular interests they bring with them? We did.

REFERENCES
http://www.dosurf.com/
http://www.nucleo.to/

218 NOT WHITE: Diversity in Beginning Design Education
The notion of difference and ‘the other’ is essential to the contemporary study and practice of design. ‘The other’ extends us beyond ourselves into that which we do not know. It is a person-based idea of change. Attempting to understand ‘the other’ (including ‘the other’ within ourselves) is an inherent part of being human—and it is one of our primary asymptotic activities. This drive to know ‘the other’—to see or understand our differences is a subject in many disciplines, particularly in philosophy and psychology. Heidegger proposed that the very idea of communication itself—the exchange of words and signs—presupposes a desire to hear or understand ‘the other’, and that this notion is a fundamental aspect of Being. The encyclopedist Denis Diderot, in his “Letter on the Blind for the Use of Those Who See” introduced us to the idea of ‘the other’ by taking us on an unusual journey of the visual from the rare perspective of the tactile. The psychoanalyst, Jacques Lacan introduced the idea of ‘the other’ through his mirror-stage; he argued that the basic structure and nature of difference emerges in that moment when we recognize and identify with our reflection in a mirror for the first time.

Certainly, in our contemporary media, there are many examples of the desire to seek difference and to know ‘the other’—it is one of the basic themes of many books, films, and television series—Star Trek, CatDog, Beauty and the Beast, Edward Scissorhands, Silence of the Lambs, Elephant Man, Tootsie, Twin Falls – Idaho, Babette’s Feast, West Side Story, To Kill a Mockingbird—the list goes on and on.

Despite its popularity in mainstream media, taking on the tasks of seeking difference and knowing ‘the other’ typically is not part of coursework in design education. Most instructors agree that to produce relevant design work, particularly as we move into a more globalized environment, students should have knowledge and understanding about cultures and populations other than our own.

This paper will address the topic of difference in design education and in general university level courses. Specifically, it will examine a course entitled ‘Design and Diversity) that has been offered as a general education course to the students at the University at Buffalo – State University of New York for the past two years. The course focuses on the changing nature of society and examines various types of diversity and their attendant design issues. Specifically, the course concentrates on the ways in which our physical and media environments affect various and, in turn, the ways these populations have affected our visuals, products, and environments. It introduces students to eight areas of cultural difference: race, ethnicity, gender, class, age, physical ability/disability, mental ability/disability, and religious sectarianism. Writings, films, products, graphics, electronic media, buildings and environments that address the issue of difference are examined.

Considering difference can move students (and faculty) out of typical processes in which they often focus on consequences that fit into their own agendas, and into thinking about other outcomes. Part of a critical design education is the examination of the possible consequences of design agendas and the conditions they foster: how do they impact the ‘other’ and who is included in our definition of ‘the other’? This paper suggests that studying difference fosters design solutions that recognize the ‘other’. As Paul Ricoeur states in “Oneself as Another,” “...If we can imagine the wide array of possible values, we can uncover an equally wide array of possible [design solutions] that might manifest and support other ways of thinking and being.”
“What sets worlds in motion is the interplay of differences, their attractions and repulsions; life is plurality, death is uniformity.” -Octavio Paz

A few weeks ago, I was in a student lounge at the University at Buffalo and noticed a group of undergrads doubled up with laughter over a television program. They were watching a Seinfeld rerun. Upon closer inspection, I was able to identify it as an episode in which Jerry, George et al visit a young fan who has a medical condition that confines him to a plastic bubble. This boy has an attitude. He is mean, ornery, and verbally abusive to his parents. George ends up in a fight with him over a game of Trivial Pursuit. Afterwards, one of the students lamented, “I wish there was something still on as good as Seinfeld—there’s nothing like that out there anymore.” “What made it so damn funny?” one of the women asked.

The ensuing conversation was fascinating. Essentially the students concluded that Seinfeld made them laugh because it really was ‘about nothing’, a refreshing approach in this age of agenda-laden media. In addition, Seinfeld relentlessly pushed buttons beyond the socially acceptable. “Take the Bubble Boy,” one student remarked, “We’re supposed to treat someone like that with kid gloves; we’re supposed to be nice to people in bubbles and they’re supposed to be nice, too—maybe even grateful for any human interaction they can get. But this guy was a jerk, and George, jerk that he is, wasn’t going to put up with it, bubble or not.” Then the students proceeded with a litany of examples to make their point—the time that George pretended to have a disability to get a private bathroom at work; that an acquaintance lied about having cancer so that Jerry would be nice to him; that Kramer accidentally became a poster boy for the “Able Mentally Challenged Adults” organization; that Jerry stole a marble rye from an elderly woman; and so on. “The writers took the ‘suppose tos’ away,” remarked another student, “and that took away the distance between ‘us’ and ‘them’—whoever that might be.”

Then, almost on cue, the subject quickly moved to each of the students talking about what it would be like to know what their pets are thinking. Once again, as each person impersonated their own version of this, the group was hysterical with laughter.

Overhearing these conversations reinforced the notion that we are intensely interested in those who are different from us, perhaps even to the point that we desire to engage in the asymptotic activity of getting closer or more familiar. The notion of difference and the ‘other’ is essential to the contemporary study and practice of design. ‘The other’ extends us beyond ourselves into a new space of greater understanding.2

Heidegger proposed that the very idea of communication itself—the exchange of words and signs—presupposes a desire to hear or understand the Other, and that this notion is a fundamental aspect of being human.1

The encyclopedist Denis Diderot, in his “Letter on the Blind for the Use of Those Who See” introduces us to the idea of the ‘other’ by taking us on an unusual journey of the visual from the rare perspective of the tactile. Sight, Diderot’s blind man concludes, “is a kind of touch which extends to distant objects and is not applied to our face. Touch gives...an idea only of relief. Therefore, a mirror is an instrument that represents us in relief at a distance from ourselves, when properly placed with regard to [ourselves].” Within this relief environment, the blind man experiences sight (the unknown ‘other’) as a kind of figure/ground relationship; it is bound in the notion of difference—if the points of a figure are the same height or texture as the ground, they are lost and the figure disappears. This way of presenting ‘the other’ is a set of comparisons and/or metaphors that attempts to move both parties (the blind man and the sighted man) beyond themselves into a new space of greater understanding.2

The psychoanalyst, Jacques Lacan introduced the idea of ‘the other’ through his mirror-stage; he argued that the basic nature of difference emerges in that moment when we recognize our reflection in a mirror for the first time. We recognize ourselves outside our bodies, outside and other to ourselves, the same as others, and yet other to others as well as to ourselves. This experience typically occurs between the ages of 6 and 18 months, a period of time in which the child is coming to grips with an array of motor skills that are as of yet uncoordinated and a source for some trepidation. As a sign of the overcoming of the fragmented body and the promise of a unified body yet to be realized, therefore, the experience of the ‘other’ in the mirror is attended by an anticipation of unity.3

Certainly, in our contemporary media, there are many examples of the desire to seek difference and to know ‘the other’—it is one of the basic themes of many books, films, and television series—Star Trek, Being John Malkovich, CatDog, Beauty and the Beast, Edward Scissorhands, Silence of the Lambs, Elephant Man, Tootsie, Twin Falls – Idaho, Babette’s Feast, West Side Story, To Kill a Mockingbird—the list goes on and on.

Despite its popularity in mainstream media, taking on the tasks of seeking difference and knowing ‘the other’ typically is not part of coursework in design education. Most instructors agree that to produce relevant design work, particularly as we move into a more globalized environment, students should have knowledge and understanding about cultures and populations other than our own.

I am fortunate to work in a university that clearly recognizes the need for education in diversity. As such, it requires that students take a course in pluralism as part of its general education curriculum. The University at Buffalo adopts the claim of Carol Geary Schneider, President of the Association of American College and Universities: “Diversity requirements signal the academy’s conviction that citizens now need to acquire significant knowledge both of cultures other than their own and of disparate cultures’ struggles for recognition and equity, in order to be adequately prepared for the world around them.”4
A course entitled “Diversity and Design” offered by the Department of Architecture is one of these general education courses, and has been available for the past two years. Over 200 students from a wide variety of majors—the bulk are from art, psych./soc., management, computing, engineering, theatre, modern languages, architecture and planning take the course. This course addresses what I think is one of the most important aspects of both design and general education; namely the consideration of difference and ‘the other’ as essential to anyone involved in the making of our worlds. (In this case, ‘design’ is used in the most general of terms—anyone who generates something that affects our environment and/or ways of being is thought of as a designer. Biologists, writers, psychologists, politicians, and others are then included in the mix.)

The course focuses on the changing nature of society and examines various types of diversity and their attendant design issues. Specifically, the course concentrates on the ways in which our physical and media environments affect various and, in turn, the ways these populations have affected our visuals, products, and environments. It introduces students to eight areas of cultural difference: race, ethnicity, gender, class, age, physical ability/disability, mental ability/disability, and religious sectarianism. Writings, films, products, graphics, electronic media, buildings and environments that address the issue of difference are examined.

The Diversity and Design course has several objectives:
- to raise awareness of the impact of design decisions on diverse populations
- to raise awareness of the specific desires and needs of various populations
- to build a vocabulary that demonstrates an understanding of diversity in relation to various design methods
- to critically examine the operations and processes of current design education and practice
- to analyze specific aspects of physical and visual environments keeping in mind the needs of diverse groups
- to develop design processes and proposals for inclusive physical and visual environments

The course has several activities and assignments that help students to extend their understanding of the relationship between design and diversity. For example:

Students analyze consumer media in relation to specific diversity issues and present position papers revealing their findings.

Students compare two products: one that is designed for a continually broadening population and one that is designed for a rigid niche of the population. They team up with someone younger than six or older than seventy in the evaluation process.

Students review the entries in an architecture competition from the point of view of an underrepresented group. They act as jurors.

They go to an ethnic restaurant and order something they’ve never had. Subsequently, they write a restaurant review in which they focus on ethnic and gendered space.

And, finally, in an effort to become arbiters of change, they design a book page that gives instructions on how to how a specific design discipline can affect a specific diversity group OR how a specific diversity group can affect a specific design discipline.

Students who are or were in the course and other individuals from various underrepresented groups have taken part in the design and refinement of the course. They’ve addressed questions that they thought were relevant to the meaningfulness of the course such as:

- Are there things that you are prevented from doing because of social or material constraints in your environment?
- What changes might be made to your environment and the products in them that would improve your life?
- What are your prejudices?
- What changes has technology had on your life?
- How do you think others see you? What do you want them to know and/or understand about you?

The following are excerpts from their feedback:

**A student who is a devout Muslim:**
I think that others see me as a terrorist because of the way we are portrayed in the media. That is so far away from the way that I am.

I think that designers should look at the ways that Islam blends into the environment and adapts to any setting. It allows us to practice anywhere without causing major disruptions to others.

**Two young children, a three year old and a seven-year-old girl:**
Kids don’t need much room. Houses should be smaller and things should be shorter so that we can reach them.

**Several women students:**
We should read everything bell hooks has ever written and then we should go to the east side of Buffalo and look around.

**A thirty-eight year old male who uses a wheelchair:**
It’s not the environment per se that I have a problem with; it’s the fact that the laws that make public places accessible to me are not enforced. If they were, I would be just fine. But when the delivery truck is on the access ramp at Burger King, I cannot get lunch. When sidewalks aren’t shoveled, I have to go into the street to get to the subway station so that I can get home from work. I think...
as a class we should all go from here to the grocery store and note the obstructions.

**A fifty-five year old Native American man:**

Many of us live feeling that our way of life has been stolen—even our spirituality is being stolen. These thefts are violations of Native sovereignty - the inherent right of indigenous nations to govern themselves, and keep the lands, cultures, and economies that belong to them. There is much to learn from cultures of different Native American nations. But there is a difference between learning *about* a tradition, and stealing the tradition.

**An eighty-eight year old man in good health:**

You could ask your students to redesign pill bottles. I’m surprised companies haven’t been sued for this already.

Actually, they should look at the overmedication of seniors in this country. It’s a huge problem and it’s going to get worse.

What should you know about being my age? That you worry about smelling bad—if you can’t smell like you used to, how would you know? That I can’t do what I used to and I wish I could. Sometimes that’s hard to take.

**CONCLUSION**

Each person involved in the design of the course, in his or her own way, critiqued conditions and made suggestions for change that suggested certain possibilities for the course and for design in general. These desired conditions might be considered as extensions of ourselves. As designers, considering these extensions often moves us out of our typical processes in which we focus on the consequences that fit into our agenda. They might assist us in thinking about other outcomes that might emerge—some of which might have significant impact.

One of the dangers of a course like this is the possibility that the persons responsible might assume the role of expert or authority figure. It is essential to work within a kind of questioning and moving framework so that those with peripheral points of view, those on the margins, and those with contradictory viewpoints can participate in the discussion and practice of design. These voices are a necessary part of the process and play a major part in its critical practice. Certainly, as critical makers of the built environment, we need to examine the possible consequences of our design agendas and the conditions they foster—how do they impact the ‘other’ and who is included in our definition of ‘the other’? Although we might not always consider it, our actions as socially conscious designers pose many questions and offer many possibilities. Already they challenge our conventional concepts of space and open choices for some that change choices for others. They confront current notions of ‘citizen’ and ‘community’ by setting up situations in which more diverse populations can participate in decision-making processes. They recondition ‘criticism’ by influencing questions about how institutional values are questioned or maintained. They ask what is found and what is lost, who wins and who loses as modes increase, and open inquiry into notions about habits and changes in our senses, perceptions, and states of being. Most importantly, examining the consequences of design provokes questions about how to teach and learn in ever-changing multi-conditions—conditions that ultimately move toward a utopia of conditions of diversity in design. Hopefully, this general education course has started that process, and will help us to open ourselves to the possibilities suggested in the following adapted statement by Paul Ricoeur in his text *Oneself as Another:* “…there are other kinds of [architecture], other ways of being or looking like [architecture], other ways in which the physical world could shape our minds, our bodies, and our spirits. Other sets of values would produce ‘other’ [architectures] that recognize the ‘other’, even the ‘other’ that is ourself.” If we imagine the wide array of possible values, we can uncover an equally wide array of possible design approaches and solutions that might manifest and support other ways of thinking and being.

**NOTES**

4 Carol Geary Schneider, http://www.diversityweb.org/Digest/W01/civic.html
Re-Beginning: Revisiting Foundation Lessons in Later Years

While beginning design lessons serve as a foundation for subsequent studios should these lessons – and these teaching methods – be left behind after the second year? Beginning studios typically include several projects intended to isolate particular lessons, methods, or techniques whereas subsequent studios may only include one or two projects, each concluding as a concrete building design. Do the methods of design foundation become obsolete after the first two years of design education? If not, then where may these methods continue to be useful throughout the design curriculum?

The student body of our school includes a large number of transfer students entering in the third, fourth, and fifth years of the five-year Bachelor of Architecture sequence. Where a typical student is already familiar with a school’s standards and expectations by the time they reach the third year, students in our program arrive with extremely divergent backgrounds – not only in how they have been taught to design, but also in their standards of quality and craft. From 1996 to 1999 the junior studios were being taught according to a traditional upper division studio program – students completed a medium to large public building design set in an urban context. Evaluating the progress of these students it became apparent that their varying foundation backgrounds did not provide them with a clear understanding of either the level of craft or the level of analysis typically expected of an advanced design student.

While this was not a problem for the most motivated students, this disparity of background exhibited symptoms most disturbing amongst the more average student – those who show appropriate motivation, but have weaker skills or a weaker educational background. Because there was no clear precedent in their own experience for an appropriate level of craft (or complexity) these marginal students were judging their own progress against the weakest design work without a clear understanding of the work’s true value.

Beginning in the Fall of 2000 we began to re-build the junior level design curriculum – using first year studios as a model – with the intention of both re-enforcing lessons of drawing and analysis (in particular) as well as re-establishing a clearer set of benchmarks as per how drawings should be crafted, design ideas developed, and precedents applied. This re-working has evolved over several years to the current sequence of three (or more) projects in each of the junior level studios. The positive impact of this sequence has been noted by faculty in all levels of the design studios leading to several other experiments in the re-application of foundation methodology. This paper will discuss both the evolution of this revised design sequence, the most current evolution of the lessons, and the apparent (and evolving) impact throughout the program.
Introduction

The Architecture School at Florida Atlantic University has an unusual demographic. This is due partly to a location that attracts both immigrants and international students from Haiti, Jamaica, Brazil, Israel, Puerto Rico, Cuba, and Colombia (as well as students native to Florida and the United States), and partly to the University’s many efforts to support non-traditional students.

While many FAU students begin college right out of high school, others come to the university after working for several years, after beginning course work in the community colleges, after completing a period of military service, or as part of pursuing a second degree. The student population of the Architecture School is a reasonable cross section of this demographic: a recent survey of students in the school shows their median age to be 25 years.

This dynamic mix is further complicated by the School’s origin: the program was first established to supplement several well-attended Associate of Architecture programs in the local community colleges. Students completing these degrees [theoretically] have the equivalent experience to the first two years of a Bachelor of Architecture degree. Most students enter our program in their third year coming from one of these feeder programs: almost halfway through their Bachelor’s degree.

The benefit of this diverse mix is that students bring a broad range of educational and life experiences to the classroom. At the same time, this unconventional diversity of educational background poses certain challenges. The resulting composite of fundamental skills and practices of design [while not entirely unique] has caused us to re-examine how foundational lessons of design, craft, and research should be applied within the curriculum.

An Extended Relationship with Design Foundation

Despite that fact that most of the coursework being discussed in this paper takes place in the junior year of a five year B.Arch. sequence, the assignments and curriculum changes came from a desire to reiterate and reinforce lessons typically associated with foundation coursework that many of our incoming junior students appear to be missing. This is not meant as a criticism of any particular lower division program, but rather this work is intended to reassert the value of foundation learning methods wherever they may be applied.

In 2000, shortly after the School’s initial accreditation we looked critically at the student work and studio methods discovering several typical shortcomings with regard to drawing and analytical method. We do not offer freshman and sophomore design courses and therefore could not solve these problems by revisiting the foundation curriculum so we asked the question, “How can we re-teach and reinforce lessons of design fundamentals in the third year without losing sight of the complexity required in the upper division of the curriculum. What has come of this still evolving re-development are several projects that may serve as a model for a more continuous process of reinforcing lessons that are more often limited to the first two years of study.

Pace, Rigor, Craft

The Design 5 project sequence has been redeveloped, through several variations, to include at least three projects per term. This semester has unofficially become ‘boot camp’ for our incoming students. The projects progress from being most prescriptive to most self directed in the first term and through the end of the first year (junior phase). Most fundamentally, the objectives of this term are to establish the expected pace within the studios, to teach a more rigorous method of analysis as applied to design, and to establish an expected level of craft.

We have been developing the project sequence over several years. The projects have taken several forms, but typically progress through three stages: seeing and drawing, drawing and discerning, and discerning and designing.

Seeing + Drawing

The first project Seeing + Drawing has been most similar from semester to semester. We select a noteworthy building near school and the students do measured drawings of a particular space or portion. The project media, materials, and scale are prescribed. We use the several drawings required in this project sequence particularly to reinforce lessons of
composition, line-weight, and craft. When possible, drawing assignments include locations with stairs since the students seem notoriously ill-informed about these conventions.

Following from an experience teaching first year studios with Gerard Damiani at Carnegie Mellon, we often teach students a method of watercolor wash. They apply this to elevation and section drawings. This technique uses a very thin wash that is applied in several layers. The paper must be pre-moistened and stretched before painting. Applied correctly, the layer of paint must remain wet until a zone of the drawing has been completed. The paper must be allowed to dry before applying subsequent layers of paint. The method is not necessarily slow, but it does require patience and systematic order for applying the layers of pigment.

Students have reacted very positively to this exercise, although it has been difficult to find buildings in South Florida with the sectional complexity necessary to produce dynamic tonal ranges. Figure 1 shows drawings of the Broward Main Library, one of Marcel Breuer’s last works. The south façade with its very deep-set windows and the building’s complex central atrium are well suited to this project. (See Figure 1.)

Seeing + Discerning

The second project has been the most volatile of the three stages. The root of the project was an interest in teaching (or re-teaching) methods of design analysis. We have tried several exercises wherein students were asked to research landmark buildings leading to a series of analytical models and drawings. This project is less prescriptive with regard to material and medium, but still makes particular requirements with regard to the drawing types and scale.

Using Unwin’s *Analyzing Architecture*¹ as a source for this work, students decomposed complex buildings into drawings and three-dimensional diagrams isolating conditions of order, geometry, circulation, context, and structure. From these individual parts students were be asked to form more complex analytical drawings or models combining these conditions.

This has been the least successful and therefore the most variable part of the sequence. The most persistent problem has been teaching the students a method of abstraction that does not translate a richly complex building into an oversimplified representation. Many of the students do not discern between abstraction as an expression of what is essential and abstraction as a capsulated summary. These symptoms are similarly indicated in their written work wherein analysis is treated as a summary of outside sources rather than a discovery inspired by a collection of alternative views.

The most recent evolution of this phase was a significant departure from our original approach using a design-build project as the catalyst for discovery and reconsideration. The project does not provide the exposure to precedent of the earlier attempts, but was very successful as a means of progressing from a more abstract state to one of increased complexity via first-hand testing and deductive reasoning.

Discerning + Designing

The last phase of the fall semester is usually five or six weeks in duration and is most like other typical studio design project. The studio project is intended to build upon the previous exercises, but is also used to help develop a student’s understanding of structural systems as they relate to spatial order and hierarchy.

Despite the prevalent use of concrete and concrete block in local construction, students are asked to develop a medium-sized building using wood or steel. Using these

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building types allows for a clear delineation of primary, secondary, and tertiary spans. It also provides an opportunity to discuss a more porous approach to skinning a building. While the contemporary ‘vernacular’ tends to seal off buildings from the elements and relies heavily on air conditioning the real vernacular traditions encourage air flow and allow for cross ventilation. With a frame system of building we can negotiate a broader range of open, semi-open, semi-enclosed and enclosed skin conditions.

One of the most successful evolutions of this project was an environmental research center for the Everglades (see Figure 2). Unbeknownst to many, the ‘River of Grass’ has virtually no mosquitoes. This live work shelter had to accommodate observation at several different elevations, allow for passive cooling, tread lightly on the landscape, collect water, and be handicap accessible.

The program for this project was designed to encourage a clear delineation between public spaces (used by small class groups) and private spaces (used by the scientists in residence). The requirement of accessibility combined with the observation levels created complexity in plan. The program intentionally contained a small number of rooms (or zones) but required particular attention to how various levels of privacy or community were reinforced.

We plan to revisit this project in future semesters: it was a very effective way of addressing issues of context and sustainability. Other projects have included a music conservatory and most recently a community art center. While illustrated above through models, the students are required to present this project through a composition of hand drawings built on the techniques of the prior assignments.

**A Recent Evolution – A Succession of Closely Related Parts**

This past year the faculty decided to switch places - many faculty members moved around to teach in a less familiar studio level. The hope in this switch was that we might all develop a better understanding of student’s needs at each year level: we are ultimately hoping to promote a more coherent progression between studios.

As a product of this mix (and the addition of several new adjunct faculty) we were able to consider the Design 5 sequence through several fresh pairs of eyes. In revisiting the sequence the main objective was to create more opportunities for crossover between the projects. The greatest shortfall in past semesters was all the downtime that occurred moving from one project to another because they were phrased as very discreet parts. The most recent evolution made significant strides toward unifying the parts into one progression tying the parts together through an examination of materials, textures and connections.

The first project in the recent sequence was to document a warehouse. The building is much smaller and spatially less complex than previous documentation projects. Initially, this permitted an examination of the whole as well as an examination of the materials – steel, wood, and concrete block – and the connections between these systems (see Figure 3). Edward
Robbins wrote, “Drawing today, is the root of architecture...looking at drawing allows us to join the making of architecture with the architecture of its making.” The scale of this building allowed a better opportunity to draw the building at several scales. In addition to drawing comprehensive views – elevations and sections- students also completed drawings of connections and surfaces.

One of the more unusual variations was an assignment to draw a square foot of the building at full scale. Where a detail drawing typically asks a student to find a critical juncture in a building construction this project asked each student to simply pick a part of the building and look at it closely. The expectation was that whether through surface, edge, or shadow a close examination would lead to discovery.

The second project was the most remarkable change within the sequence, and was also a remarkable success with the students. Where this second stage of the semester was previously treated as an analysis of precedent buildings, in this evolution we asked students to make a first-hand study of several standard building materials. The objective was to examine how material – its form and structural characteristics – might influence the composition of space and construction.

The project began as a charette, to develop a design propagator – a private space for a student and professor to meet for critique. The structure had to fit within the space of a seven-foot cube, provide room for two people when seated, include an integrated light and desk, and an opportunity for voyeurism. In addition to all of these criteria, this designed place was to promote critical and creative thinking.

At the start of the project each student had to design three one inch equals one foot scale models of their design: one each based upon a palette of two-by-twos, of two-by-fours, and of one-by-sixes (see Figure 4). Other materials like plywood and Plexiglas could be used in addition to these principal materials, but structural components had to be exclusive to the primary building system.

After the first week of design students brought these models to class and were asked to debate and select one student’s design for further development and execution. In the design development phase students priced materials, sought out sources, developed working drawings, acquired the materials, and tested details. This was quickly followed by construction: each studio worked together to complete one full-sized propagator (see Figure 5). From start to finish the project lasted only four weeks.

For the final project of the term students returned to the warehouse of the original documentation project but were now asked to look at this place anew, as the starting point for a community art center. Adaptive re-use is not very common in South Florida where buildings are too often razed once they no longer serve their original function. Revisiting this...
location, a nearly historic structure in this very young city, students were asked to consider both the material qualities of the existing building and the material discoveries of their recently completed *Propagators*. Students were asked to design the new art center based upon this recently tested palette of material.

The most typical disadvantage of this last project is the short five or six-week timeline. Locating this third project in the warehouse, a known site, we hoped students would move more quickly into the development of their building designs. Unfortunately it appears that time gained by using a familiar location was undermined by the demands of adaptive re-use: students struggled with the intersection of new and old construction. Ironically, the most articulate art center designs were often least respectful of the original building.

**Conditions – A Study of Precedent in Studio 6**

For several semesters we have been doing a very successful analysis project at the beginning of Studio Six. The project, called *Conditions*, assigns a particular architectonic condition to each student in a studio. The assignment was developed in response the way students were using precedent. Too often they were not able to separate out a building’s lessons from its form, or style, or program. This project asks students to look at a very particular aspect of a building condition and to establish a varied library of solutions. Typical topics are:

- A window opening as finished on the exterior wall
- A shift in the exterior envelope to accommodate an entrance
- The overhang of a roof meeting an exterior wall
- A space frame connecting into a column or bearing wall
- The open string of a staircase
- A lattice or screen wall
- A handrail and pickets with their connection to a wall, floor or column

Each student must find twenty strong and varied examples of each condition. These examples must come from twenty different buildings, illustrate the condition clearly, and show a broad range of variation. There are several objectives to this exercise: it forces them to research a variety of buildings in a short amount of time, it shows the students several precedents for a particular situation and helps them discover precedents as a way of looking at details and assemblies as well as whole buildings.

The project is brief, usually two weeks long, but permits enough time to show students how to scan and crop images effectively and allows enough time to review the selected conditions in class before the students compose the final poster.

Students use a template for this assignment, so there is consistency in how the posters read collectively. The poster images are required to be quite large, five inches by four inches at three hundred dots per inch. They must find examples in printed materials; images taken from the internet are not sharp enough. This is not meant to dismiss the Internet as a resource; in fact students are encouraged to begin their research using the web, but rather to make sure that they also discover the resources available in the library.

The work is graded for variety, image clarity, and completeness: each example must include the architect’s name, the building name, location, and year built. The finished poster is 24”x31” and reduces proportionally to a letter-size handout. We use the handout version as an opportunity to teach scholarly citation methods – the source for each image is cited on the back. The posters are hung in the studio (see Figure 7) for the duration of the term to act as a library of resources and the letter size handouts are copied and distributed so each student has a copy of the whole set (approximately 300 images).
Percolating Up – Is it really still a ‘foundation’ exercise applied at this level?

Since beginning the new Studio Five sequence there has been noticeable improvement in the graphic communication and craft of student work. The success of this re-beginning model has encouraged other ‘foundation derived’ projects in subsequent studios. In each case these projects were founded upon a desire to isolate particular concepts or skill sets preceding a more complex and integrated building design project to follow.

By abstracting an exercise to focus on a particular skill set, the student begins to take on the task for its own ends, apparently free of any constraints or preconceptions about a larger program. In the context of the design process, the ability to abstract carries with it a dependency on content rather representation. An effective outcome is directly related to the student’s ability to abstract, evaluate, and then synthesize findings in the context of the design studio assignments.

Recent assignments in both the Vertical Studio and the Studio Ten courses intended to:

a. Apply analytical and evaluative skills in researching project conditions.
b. Identify, clarify, and specify program as a graphic composition in order to promote the visual aspects of program and context.
c. Utilize the language of design, i.e. spatial relations in both two and three-dimensional media as a way to evaluate and imaginatively respond to observed phenomena.

Vertical Studio – A Series of One-Week Steps

A vertical studio is offered every summer for students in studio levels six through eight. This past summer the vertical studio was developed as a cumulative series of one and two-week lessons beginning with a very abstract composition exercise and progressing through issues of ordering systems, transparency, analysis, and rhythm that culminated in a complex building project for a waterfront site.

While students expressed some initial hesitation due to the atypical format, ultimately the students seem to have responded similarly regardless of their level. More advanced students were appreciative of the fact that the formalized approach validated their design habits. Less skilled students felt less “pressured” to perform, and were more at ease discussing the need to develop their weaker skills. The reviews took on more of the aspect of a coaching session, and students were more communicative with each other and with the instructor about content. This is significant, as the more subjective, emotional characterization of design responses were simply not addressed.

Studio Ten – A More Complex Consideration of Program

A recent project in the thesis studio asked students to reconsider their approach to programming their building. Rather than starting with a list of rooms, square footage, or functions, each student was asked to develop a graphic depiction of program (see Figure 8).

The assignment emphasized graphic composition, spatial relationships, and the combination of image and text to effectively communicate information. The intent was to maintain an emphasis on the primarily visual nature of architectural design communication. Through critique students were asked to determine what constitutes a “good” presentation, i.e. graphic communication that is clear, descriptive and meaningful.

Figure 7 - Conditions precedent study posters by Aron Temkin’s studio (2003).

Figure 8 - Graphic representations of a building program by (left to right) Jaime Calabrese, Carlos Cordero, Robert Draper, Morr Yeashoua, Javier Baena, Matt Bechtel, and Anette Bahamonde (2004).
In addition to the regular studio work, each Thursday the first half hour of studio was dedicated to a sketching problem, usually a black and white image of rural American buildings, or banal suburban landscapes. The purpose of the exercise is to continue to develop observation, composition and drawing skills. Students are shown techniques for abstracting and recording the organizational structure of a visual composition (reveal the hidden lines, superimpose lines to uncover relationships between forms, determine the primary and secondary readings of form in light, shadow, and finally record detail and texture). This exercise is required, but it is emphasized that the students are doing this “for themselves” and they will not be graded. In this way, they learn that they are the ultimate arbiter of what is required to produce something that satisfies them. By establishing a standard for their own work they can better determine which areas or skills need more attention.

Conclusion

Skill and practice is achieved through repetition. In the context of educating a professional designer, “foundation” occurs throughout the process of education, and should not be considered complete by the end of the second year or the end of the fourth year.

The Re-Beginning sequence in Studio Five was founded on a desire to bring students from varied educational backgrounds “up to speed” with the expectations and pace of the architecture school. The curriculum was intended to re-iterate several of the most fundamental lessons of design method and craft. The challenge continues to be the assimilation of these beginning lessons with the curriculum requirements of a third year studio.

While the overall success of this intention is apparent in the studio work, now that we are looking at the curriculum from this perspective there is an apparent need for this method to continue forward through other studios since it is also apparent that these lessons are best retained with additional practice. The success of other foundation inspired exercises indicates a positive evolution in this direction.

In certain situations, such as preliminary abstract form and composition studies, students may not anticipate a relationship with subsequent assignments. By demonstrating how these initial studies can inform their investigations into program, site, context, and ultimately spatial responses, they begin to understand the importance of the research and its semiotic value in the design process.

REFERENCES

The street is the most diverse of human places, but also the most common of places, where human activity takes on many forms. There are places for human events, human interactions, human experiences, and places for the human psyche. Street is a context in which the diverse is the norm, and relating to the street is a commonality. This paper discusses a beginning semester final project that begins and ends with the street. The project is the design and construction of full scale environments that are sited to form into a street. Although a succession of projects leading to the final project has been at the scale of the hand, design experiences have progressed from the concreteness of full scale material objects toward the abstractness of being inside. While the street is not literally an experience of insideness, buildings that form it enable experience of the street from an adjacent interior space. This experience alters perception of both the streetscape and the perception of oneself in relation to it. A boundary of space and self is intertwined. In his book, The Aesthetic Townscape, Yoshinobu Ashihara believes that a “key explanation for the great diversity in basic perceptions of space lies in the nature of the boundary that distinguishes internal from external space and in the treatment of territorial space.” The premise of this design project is that if this boundary condition can be experienced first hand, as a test of design intentions, a fundamental lesson linking architectural design and human experience will be generated and take hold.

Initially, individual students were sent to experience actual urban streets in search of primary human experiences. These were discovered, named, and examined for characteristics common to many peoples. A representative list emerged with names such as a place of meeting; a place of prospect; a place of contemplation; a place for waiting; a place for the sky; etc. These names were assigned to 38 different teams of four students, with the project “to design and build an incident of human occupancy.” Materials were limited to wood lattice strips, a binding material, and sheer fabric. Each group was assigned a six foot square site along two rows of sites in the main plaza of the campus that will be built into a “street.” Teams were formed of students from different sections to build community in the studio. They must find common ground as they conceptualize, experiment, strategize, and build architectural support for forms of occupancy abstracted from experience. Full scale construction means making design decisions about actual materials, selection, joinery, and actual experience. Experiencing other design efforts by walking in and out of the actual projects, students discovered the fundamental nature of their own bodies in space, as a measure of design intentions and concepts, and as a relation to the connecting boundary between individual architectures and the shared place of the street. Perception of self changes in response to variations in architectural extensions between inside and outside. As an analogy to street as a place of diversity, common relationships become evident.
The street is a place of great human diversity. There are places for varieties of human events, human interactions, human experiences, and places for the human psyche and the human body. Yet as diverse as the street can be, relating to the street as a place is a commonality. This paper discusses a beginning semester final project that begins and ends with the street. The project is the design and construction of full scale environments that are sited to form into a street. As the culmination of a succession of projects that have been designed and made full-scale of real materials, students are transformed by this experience. Full scale construction means making design decisions not only about actual materials but also actual experience. Experiencing full scale designs by walking in and out of actual projects, students discover the fundamental nature of their own bodies in space as measured against the connecting boundary between individual architectures and the street as an edgeless boundary occupants hold in common. Student self perception changes in response to variations in architectural extensions between inside and outside. These evident relationships are held in common by all occupants of the street.

The street project is founded in a pedagogy in which students, through their own design efforts, discover an interactive agency between making and thinking, between direct experience and conceptual constructs. Throughout their first semester, design students have been working at the scale of the hand, ostensibly to discover, by manipulating actual materials, decision-making processes that are not only internally and externally generated but inextricably bound. Building on the experiential learning approach of David Kolb, the studio pedagogy exploits direct experience as a basis for learning and reflective thought as a basis for transformation, both of the design project and of the student him/her self. By occupying their structures, the learning process is as evident in the actual experience of the final project as it is in the full scale design and building of the project.

Experiential Learning As a Structure of Making and Thinking

Many educators consider “thinking” as the first step in any learning experience and appeal to thought as the primary means of acquisition of knowledge. Thinking is primarily a form of abstracting and many first year design projects are structured as abstract learning experiences that limit or obscure direct experience in the world. Exercises such as diagraming, conceptual thinking, visual thinking, analysis, precedent research, and representational drawing are fragmented from, as George Lakoff characterizes it, “the world as we feel it by living in it,” frequently causing students to become uncomfortable with their own learning. Lessons of abstraction are only part of a much larger and encompassing structure of learning design but are misconstrued by beginning students as methodologically “correct” paradigms of design. The relationship between thinking and making is analogous to other basic human relationships like the mind and the hand, materials and intentions, and the Cartesian separation of mind and body. At the core, these are fundamentally relationships between the concrete and the abstract. Given that designers of the built environment conceptualize and develop what is in the end concrete and tangible, it seems causally reasonable that first year pedagogy should introduce and cultivate the complex interactions between the abstract and the concrete as a step toward identifying and actualizing essential and enduring aspects of processes that are universal to architectural foundation education.

By modeling first year pedagogy to cultivate relationships between concrete and abstract processes of learning, it is possible to establish basic connections between them in an effort to develop in students a fundamental awareness of processes that underlie these connections. Synthesizing concrete with abstract content can be accomplished through a structural approach that holistically defines transaction between these factors without reliance on forces outside the model. Additionally, integrating concrete (making) and abstract (thinking) learning experiences recognizes a transformational interdependence between them that forms a sound basis for the continued development of design process.

Initial learning experiences are especially paradigmatic for university freshmen. Educator, Robert Leamnson defines learning as “stabilizing, though repeated use, certain and desirable synapses in the brain” Establishing these neural connections in the thinking part of the brain, according to Leamnson, requires “experience and sensory interaction with the environment that promotes and stabilizes neural connections.” Neural formation that accompanies learning takes time to form and will degenerate if not used repeatedly. This happens primarily by incorporating direct experience. Learning can be characterized,
according to Leamnson, as repeated testing of mental representations against the reality of experiences until one’s thinking, or brain pathways, have been altered due to this experience. Learning in this way forms fundamental queries, the kind of learning that is personally transforming, and can form the body of inquiry for one’s education and career. Desirable foundational design studio learning experiences are those that grab hold and challenge beyond one’s behavior patterns or internal experience while also connecting to a student’s mental life, their thoughts, ideas, dreams, and consciousness, while also realizing external consequence within a larger, tangible world.

A sequence of first semester design exercises will be shown that follow this approach, although the principle intent of this paper is to present the project that culminates this introductory semester. At the basis of this sequence of design exercises is a fundamental premise of education psychologist Jean Piaget - that individuals actively seek to make sense of the world and actively create their own structure for knowledge. Education psychology identifies concrete learning and abstract learning as two opposing yet complimentary and primary modes of acquiring and acting on knowledge. Following the basic tenets of the developmental leaning structure of Piaget, David Kolb has modeled an approach to experiential learning that elaborates the basic bi-polar structure of concrete and abstract learning. (See Figure 1.)

Kolb’s process of learning cycles is typically interpreted as telling of one’s “learning style” and has been construed to mean many things for the application of education theory. The purposes of this direction for architectural education are not the subject of this inquiry. Rather, it is the structure of Kolb’s learning cycle diagram that is significant. Concrete learning methods are facilitated by immediate experiential contact in which there is direct engagement through cycles of heuristic manipulation and discovery, followed by reflective observation and judgment that is transformative of concrete experience. Abstract learning is a utilization of mental mechanisms and cognitive comprehension using indirect representational mechanisms and referentially symbolic structures in acts of conceptualization and synthesis. Circumferential cycling through concrete and abstract modes of learning and transformation sets up each mode as mutually and systematically modifying the other. This cycling forms a basis for the staging of first year pedagogy as the initial steps to individual development of integrated design processes.

Recharacterizing Kolb’s learning cycle in terms of typical design studio experiences yields striking similarities to activities that already and routinely take place. Engaging in concrete learning experiences takes form in making things and engagement in first-hand material explorations and other direct experiences. It could be said that concrete experience is in large part the actual content of design, in that buildings are the environmental surroundings and circumstances of an occupant’s everyday life and ordinary state of consciousness of the things around them. The successful practice of architecture is itself grounded in the development and elucidation of abstract content that is experientially based in concrete material physicality. The design process of architect Steven Holl, for example, develops architectural experience as a perceptual synthesis of heightened sensory phenomena and ideational encounters.

Design is also a reflective activity, with formal and informal design critique at the center of studio efforts. Reflective activity in design process typically takes form as a search for sound measures of design, basic issues, principles, and fundamental processes that can be built upon. Abstract conceptualization in design occurs within the development of meaningful ideational structure for a design project and typically occurs in the form of discursive thought, conceptual development, and visualization. Representational structures, such as diagrams, drawings, verbal descriptions, material models, and virtual models are instruments that seek to connect the abstraction of concepts and ideas to the realities of human sensorial experience and physical materiality. Active experimentation defines design activity as concepts and ideas take form as the raw materials of architecture (i.e., configurations of walls, floors, openings, spaces, forms, materials, structure, and construction).

As a pedagogical process, making and thinking, concrete and abstract processes, respectively, are dialectically paired and it is as paired actions that they become operational for design activity. Key to actualizing this structure in the design studio is that students develop his/her own operational conditions - some conceptualize and are informed by making; others experiment with making and discover/develop conceptualized thought; still others “receive”
conceptualizations primarily through reflective activity (such as critique). Designing always occurs with respect to a varied set of conditions that necessitate varied modes of learning activity. In light of these distinctions, a supportive and integrative pedagogy will allow, fertilize, and propagate this in the context of design studio projects, especially those in which the design and construction of full scale objects necessarily causes the completion of the entire structure of experiential learning.

Introductory Encounter: From the Hand To the Street

A primary pedagogical concern of the initial design studio semester is to gain an awareness of the interactive balance of concrete and abstract experience at the level of individual engagement in which everyday human experience is based. Making is an important “first step” in balancing the effects of the visual culture of abstraction in which our first year students have most often been immersed. Making things is especially relevant in building material and construction sensitivities in design students, who will be, as architects and designers, charged with constructing our sensorial and our conceptual environment.

Concrete and abstract processes are both facilitated and transformed by production (experimentation) and discourse (reflective observation, criticism). These relationships, primarily through engagement in the concrete experiences of making things, are followed in turn by measured engagement in reflective critique of things made. Projects foster immersion in concrete experience through direct contact with materials for discovery and manipulation of a material’s workable properties in relation to design intentions. Engagement in making things has its premise in the notion that making decisions about materials is making decisions about design. Full scale construction means making design decisions about actual materials, selection, joinery, and most importantly, actual experience. Projects necessitate that students employ heuristic investigations and discoveries that are brought to light through on-going reflective observation and comparative critique. Modes of conceptualization and experimentation are implicit in the efforts of working with materials to complete the projects.7

Projects are sequenced to develop concrete experience through reflective critique by engagement in making things in a staged transformational progression from two-dimensional to three-dimensional and direct material encounters that are directly occupied. Workmanship is a constant measure of intentions and is brought into awareness as a fundamental category of design and material qualities.8 The street project culminates the initial architectural design studio course project sequence because it is the first design project realized where students can physically experience their own design concepts from the interior. It is an enlightening moment when projects are assembled into a street and design students realize making a creative mark on the physical and social landscape.9

The Street Project

The street project is specifically structured to link making and thinking in the context of the pedagogy described in Kolb’s experiential learning model. The project is the design and construction of full scale environments that are sited to form into a street. Jane Jacobs, in her seminal, The Death and Life of Great American Cities, wondered, what comes to mind when we think of a city? Her answer was its streets. She believed that if a city’s streets look interesting, the city looks interesting. And if a city’s streets looked dull, the city seemed dull.10 Direct experience initiated the project. Students were first sent into an urban street that looked interesting to them, charged with experiencing relationships basic to human occupancy of the street. Basic human activities were discovered, identified, and named, resulting in a list with names such as “a place of meeting; a place of prospect; a place of contemplation; a place for waiting; a place for the sky; etc. These names of common street activities were then assigned to 38 different teams of four students, with the project statement to design and build an incident of human occupancy. Materials were limited to wood lattice strips, a string or rope, and sheer fabric. Each group was assigned a 6’ x 6’ site along two parallel rows of sites that formed a “street” in the main plaza of the campus. Teams were formed of students from different sections to build community in the studio. The first exercise explored the potential of the given materials as students designed and constructed a panel containing the fabric. This gave rise to detail. Each group was then challenged to find common ground as they conceptualized, experimented, strategize, and built architectural support for the form of occupancy abstracted from the experience of the street. (See Figures 2 and 3.)
Because the street is a place of great human diversity but also contains a commonality of human activities, it is an ideal culmination of the progression of full-scale projects. The street is not only a place for the human body it also sustains places for both the individual and the collective human psyche. Students are transformed by experiencing this project, both in its design and the experience of its final assembly. Through the semester students have been working at the scale of the hand. Design experiences have progressed from the concreteness of material objects toward the abstractness of being inside. (See Figure 4.)

While the street is not literally an experience of insideness, (the wooden structures are semi-transparent, as if a wire-frame drawing) the buildings that form it enable the experience of the street from an adjacent interior space, metaphorically, within a building adjacent to other buildings on a linear path. The experience of being within these buildings alters perception of both the streetscape and the perception of oneself in relation to it. In his book, *The Aesthetic Townscape*, Yoshinobu Ashihara believes that a “key explanation for the great diversity in basic perceptions of space lies in the nature of the boundary that distinguishes internal from external space and in the treatment of territorial space.”11 The premise of this design project is that if this boundary condition can be experienced first hand, as a test of design intentions, a fundamental lesson linking architectural design and human experience will be generated and take hold. (See Figure 5 and 6.)

By experiencing full scale designs by walking in and out of actual projects, students discover the fundamental nature of their own bodies in space, both as a measure of design intentions and concepts and as a relation to the connecting boundary between individual architectures and the street as edgeless, imagined boundaries between people. Student self-perception changes in response to variations in architectural extensions between inside and outside. As an analogy to street as a place of diversity, common relationships between people and architecture, at the level of individual experience, become evident. Also evident is that individual experience can be shared, and the mechanism of that communication is architecture. Architecture is dialog and it happens at the level of the body, which in turn informs the mind.12

**Conclusion**

> “Learning can be externally encouraged, but only internally initiated.”13

As a structure of learning, intentionally interrelated and cycled processes of making and thinking offer first year design pedagogy the many conditions for learning that address the learning situation of the design studio and offer to reconstitute student consciousness that has been bound into an abstract visual culture. It is not the objective of this structural approach to apply Kolb’s learning cycle as an exercise of applied science. To the contrary, the modes of learning analogous to Kolb’s experiential learning model are already embedded in design studio structure. Specifically structuring design activities as an intentional cycle gives the beginning design student a foundation of learning on which they can individually manifest design experiences as dynamically inter-relational. Engagement in concrete experience gives ground to the complex context of learning in which students act, manipulate, observe, challenge, and reflect in a dynamic process of thinking and making in which the holistic human experience of buildings is primary.

The street project addresses fundamental issues of architectural design as a culminating project that grounds architectural design education in actual human experience. The street project has been based on a thesis that it is is possible to identify and actualize essential and enduring aspects of learning/doing/experiencing processes that serve both universal and specific functions of architectural foundation education. Because foundation pedagogy seeks the establishment of fundamental relationships on which a rigorous architectural educational can be constructed, a pedagogy of experiential learning modeled on synthesizing concrete and abstract processes of learning realizes a transformational interdependence between making and thinking as a primary relationship. Initial design education learning experiences, when they are framed as deep fundamental queries of the experiencing embodied being, are especially paradigmatic for beginning design students because they are personally transforming. The street project, as a culminating project, intends to challenge beyond established behavior patterns or internal experience by connecting to a student’s mental life - their thoughts, ideas,
dreams, and consciousness. Most importantly, the street project realizes individual intentions in the real world, first at the level of the individual’s own hand, and then extends to the external consequence of design within a larger, tangible world of the intentions and experiences of others. This is accomplished through embodied experience so, while the lessons of these projects are ultimately “studied collectively, they are nonetheless learned privately.”

NOTES
9. Following the first semester immersion in making and reflecting, the second encounter is engagement in abstract conceptual mechanisms to elucidate and develop a context of thought against which concrete investigations may be balanced. Abstraction may include such issues as diagraming, analysis, visual thinking, drawing conventions, modeling, simulation, scale, context, as well as the use of narrative and metaphor, and the nature of ideation. Engagement in abstract conceptual thought also has its premise in the notion that learning to abstract is learning to design. Especially in the second semester, lessons of abstraction continue to be built upon lessons of concrete experience.
12. Lakoff and Johnson. Use of the word inform is intended to refer to a double meaning - derived from Plato but reversed in that bodily experience and mind are reciprocal.
15. Ibid., p. 19.
Investigative Space

“As you can see, the world is a never-finished sketch. Always brazenly and wonderfully fresh.”

Loris Malaguzzi

As one of the founders of the Reggio Emilia schools, Loris Malaguzzi expressed the view of the educators there: that each child has a distinct, wondrous perspective to offer us. The early childhood programs of Reggio Emilia, Italy have been the object of much focus over the last 15 or so years; actually, the tradition of “high-quality early care and education are defined as socio-educational services and a right of all Italian children and their families”¹. When I first began investigating why these particular schools were generating such interest, I learned that the schools and care centers for children under five years old are based around an atelier; a space for art. Beyond that, the schools allow the students to move about freely during the day, delving into whatever project interested them. The schools’ spaces are concerned conceptually with many architectural ‘basics’ - light, color, texture, form - but use them in innovative ways. They reflect “the role of the environment-as-teacher.”²

Working from the ideals of Reggio Emilia and appreciating other successes around the United States and the globe, an architect designing an Early Education (EE) or daycare space must take into consideration the physiologic impact the space they create will have on children, beyond the typical concerns of the requisite square footage per child. In today’s family framework, children will typically spend more of their waking hours in these spaces rather than their own home; they must be part of the strength of the program and hopefully, be part of the strength of the child. These spaces must contribute to the well being, creativity, and sense of play of the children. They must promote connection to the outside world, irrespective of what the immediate surroundings are. From Piaget through Gardner, it is understood that children react in a visceral, immediate way with their surroundings; concurrently, the environment is important for quality early childhood experiences for children, as they develop both on their own and in their community. In writing about the Reggio Emilia schools, Tiziana Fillipini points out that the educators think of space as a container which favors social interaction, exploration and learning, but also that they see the space as having educational ‘content’. Relative to architecture, it is seen as the ‘third educator’ behind a set of 2 teachers.

The way children interact with architecture is important to their development, relative to their sense of well-being and their intellect. If they have experienced well-designed, evocative space, it could be labeled ‘investigative’, as it supports the children as they learn about their world. Carla Rinaldi of Reggio Emilia has noted, “Children are asking ‘why?’ before they can say ‘why?’ “³

“My is it that children in the early grades of schools are curious, creative, risk-taking problem solvers and why is it that those qualities diminish as they proceed upward through the grades?”⁴ Once our students arrive at the age of 17 or 18, quite often we have to ask them to relearn these capabilities they had as children. There are many aspects of the Reggio Emilia use of emergent curriculum which apply and can be used to great effect in the first years of design studio. These include: “the role of the environment-as-teacher, children’s multiple symbolic languages, documentation as assessment and advocacy, long-term projects or progettazione, the teacher as researcher”⁴. From the educator’s side, there is a desire for creative thought and analysis, from the student’s side, a desire for recognition of autonomy and

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abstract

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competency. In some ways, the traditional view of the young architect who “knows nothing” is the same flawed view of society’s value of the intellect of children. We ask our young architects to think differently, to truly ‘see’ or observe, to use all of their modes of expression, and to recognize the truth in the statement by Carlina Rinaldi of Reggio Emilia: “Observation is not what you see, it is choosing what you see.”

As Rinaldi noted when asked about the reaction of the schools to the September 11th tragedy, “it is not neutral; the schools parallel humanity.” Our schools are the same, our students look to one another for peer evaluation of their experience or current world events. “Children listen to the meaning of life in all its colors; they listen to each other using peer groups as constructors of knowledge - rather than adults alone...they understand that differences have power...(and) that uncertainty is not insecurity.” Together the cohort group of each year support one another’s growth and learning about their differences through open investigation and dialogue – they form their community in their public space. The class’s diversity, racial, economic, geographic, allows these citizens of the world to begin to also work with one another, to ‘read’ one another as they will ‘read’ clients in the future.

Being cognizant of Gardner’s theory of multiple intelligences, this paper will stem from the idea that education about architecture starts with the first spaces one experiences, and will explore the parallels between Reggio Emilia pedagogy and the objectives of the first two years of design education.

NOTES
2 Ibid.
3 President of the National Academy of the Sciences, Alberts, 1997.

INTRODUCTION / ENVIRONMENT:

“As you can see, the world is a never-finished sketch. Always brazenly and wonderfully fresh.” -Loris Malaguzzi

As one of the founders of the Reggio Emilia schools, Loris Malaguzzi expressed the view of the educators there: that each child has a distinct, wondrous perspective to offer us, through expression via their “100 languages”. The early childhood programs of Reggio Emilia, Italy have been the object of much focus over the last 20 years; where the tradition of “high-quality early care and education are defined as socio-educational services and a right of all Italian children and their families”. 1 “Over more than 30 years, this system has evolved its own distinctive and innovative set of philosophical and pedagogical assumptions, methods of school organization, and principles of environmental design that, taken as a unified whole, we are calling the Reggio Emilia approach. This approach fosters children’s intellectual development through a systematic focus on symbolic representation. Young children are encouraged to explore their environment and express themselves through all of their available ‘expressive, communicative and cognitive languages’, whether they be words, movement, drawing, painting, building, sculpture, shadow play, collage, dramatic play, or music, to name a few.” 2

In today’s family framework, most children will typically spend more of their waking hours in a care or education program rather than their own home; these spaces must be part of the strength of the program and hopefully, be part of the strength of the child.
The spaces must contribute to the well-being, creativity, and sense of play of the children. They must promote connection to the outside world, irrespective of what the immediate surroundings are. From Piaget through Gardner, it is understood that children react in a visceral, immediate way with their surroundings; concurrently, the environment is important for quality early childhood experiences for children, as they develop both on their own and in their community. As well, it is the earliest form of learning about space and architecture. If they have experienced well-designed, evocative space, or as I label it, ‘investigative’ space, it supports them as they learn about their world. When I first began researching why the Reggio Emilia (RE) schools were generating such interest, I learned that the schools and care centers for children under five years old are based around an atelier; a space for art. Beyond that, the schools allow the students to move about freely during the day, delving into whatever project interested them. The schools’ spaces are concerned conceptually with many architectural ‘basics’ - light, color, texture, form - but use them in innovative ways. In writing about the RE schools, pedagogista Tiziana Fillipini points out that the educators think of space as a container which favors social interaction, exploration and learning, but also that they see the space as having educational ‘content’.

Carolina Rinaldi of Reggio Emilia has noted, “Children are asking ‘why?’ before they can say ‘why?’” 3 The idea of the children having potential is reflected in an RE building – it is the place of potential, for learning, encounters, expression, sharing of experiences of life. The clarity of the pedagogical stance is translated into architectural space – with a high level of transparency allowing for an awareness of the learning happening in the school. Quite often the teachers and children are informed by other’s work and this is allowed to transform their investigations. As Isaacs notes: “...Piaget’s whole psychology rests on the principle of continuous interaction between the child and the world around him; it is this that which furnishes all the material, as well as the motive force, for his intellectual advance.” 4

The transparency allows for the outside green space to be understood by the children, but also for them to be connected to the city, and the city to them. Their buildings are considered public, civic buildings, in that the children are the future richness of the city. Also, quite often the atelier is used for community programs, art workshops, etc. The public is also involved through the clear reflection of the value awarded the children and their space – in Emilia Romagna, new facilities have to be designed by a group made up of local officials, an architect and pedagogic experts, understood to be bringing differing competencies to the design. The space allotments allocated for these spaces are much higher than elsewhere in the European Union: 7.5m2 per child for 3-6 year olds and 10m2 per child for under 3s versus 2m2 per child in Denmark and 2.3m2 per child in Britain.5 The value of the teacher’s work with the children is also spatially recognized with meeting and work spaces, as well as adequate storage. Unlike the American tendency towards a high level of control via regulation, the idea of safety – physical and interpersonal – is important, but not primary; it is considered more important to be careful with glass beads and be able to use a beautiful material, more important to have a rich project than avoid conflict over ideas.

The Reggio schools are not formally excessive; indeed, they are straightforward, rational forms, and wondrous spaces to be in. The clarity of vision is typically expressed via clear spatial organization using predominantly masonry construction which allows for openness and transparency. There is a copious amount of daylight and the generous spaces tend to be thoughtfully organized, which allows for a feeling of order. Lella Gandini of Reggio Emilia stated, “these spaces tend to be pleasant and welcoming, telling a great deal about the projects and activities, the daily routines, and the people large and small who make the complex interaction that takes place there significant and joyful.” 6 My first impressions of the schools were that there were no boundaries of expression, imagination, or creativity. Also striking was the thoughtful, careful organization of the materials visible. Pencils were separated by in order to communicate the importance of the choice of one color over another and collage and construct materials were separated by type in take-out clamshell boxes collected at the children’s homes. Documentation panels describing prior investigations were graphically beautiful. While touring one of the Reggio schools, an American teacher said she could never replicate the same potency in her classroom, but when I asked her to look past the materials and provocative layouts of differing materials, she saw that it was a basic, high-ceilinged rectangular room with grey metal shelving of the sort found in many garages in this country. This potency of this visual clarity is achievable anywhere. The buildings...
which have been designed for the program are seen as precious, essential, important, not simply a cover; they are minimalist but rich in detail to serve as a foil for the people and experiences to fill them.

Through critical analysis of their spaces, the teachers, allen(istas and pedagogistas of Reggio Children developed a ‘metaproject’, an investigation to document the richness of the environments of RE as a framework and a way of sharing ideas with others. Clarifying the new ideas of their pedagogy with current architectural thought, the “keywords” they used to describe their objectives were: “overall softness, relation, osmosis, multisensory, epigenesis, community, constructiveness, narration, rich normality”. Secondary to this, the “design tools” are listed as: “relational forms, color, materials, smell, sound and microclimate”. Fundamentally, all of my observations and experiences at RE expressed the utmost respect given to the primary focus of all that occurred there: the children’s work, their thoughts, and their efforts.

COMPETENCIES
“Why is it that children in the early grades of schools are curious, creative, risk-taking problem solvers and why is it that those qualities diminish as they proceed upward through the grades?” Once our students arrive at the age of 17 or 18, quite often we have to ask them to relearn these capabilities they had as children. From the design educator’s side, there is a desire for creative thought and analysis, from the student’s side, a desire for recognition of autonomy and competency. In some ways, the traditional view of the young architect who “knows nothing” is the same flawed view of society’s value of the intellect of children. We ask our young architects to think differently, to truly ‘see’ or observe, to use all of their modes of expression, and to recognize the truth in the statement by Carlina Rinaldi of RE: “Observation is not what you see, it is choosing what you see.”

There is a small but strong groundswell to integrate design education in the K-12 realm; Connecticut’s ARC Program is an example of the integration of a design process as a platform for an integrated curriculum which is quite parallel to the beginning curriculum of most architecture schools; the math, science and humanities are covered, while allowing the students to generate and understand connections between these disciplines. The American Architectural Foundation is looking to these program for “Citizens for a New Century”: ‘To prepare children for their adult years – to prepare them to participate as citizens in designing their own communities, shaping their own environments – educators must help them now to develop qualities of strong character and essential thinking skills.’

There are many aspects of the RE pedagogy which apply and can be used to great effect in the first years of design studio. These include: “the role of the environment-as-teacher, children’s multiple symbolic languages, documentation as assessment and advocacy, long-term projects or progettazione, the teacher as researcher.” I will review these relative to the first architectural education at the ages of 0-5, and then relative to the first two years of design studio.

ENVIRONMENT AS TEACHER
The focus on the educational quality of the architectural envelope may seem obvious to architects but it is inspiring to hear education commissioners in Italy speak of it this way. It is expressed to the children in RE that composition is important, from a wonderful shadowbox to the proportion of a shelf above a sink. Visual clarity allows them to notice what is considered important by the teachers and to develop a subconscious critical framework. The import of this cannot be overstated; the modern sensibility of the space and the surrounding classical structures of the city impart their lessons to the children. “But on (Piaget’s) own premises one would expect that favourable or unfavourable outward conditions would bear strongly on the success and extent of development. The former might go far to promote it; the latter to arrest or warp it.” As well, children want to impact and change their space, as they begin to form their spatial awareness – large, small, open, lower, many types of experience should be available to them. Moveable elements, large blocks and fabric allow them the capacity to reformulate the given architecture, and the transparency into other spaces gives them multiple readings of the same spaces. In terms of exterior space, in RE the landscape is considered the playground and interventions on it are open-ended or driven by the children.

Learning from studio - who has not used the studio space as a datum in their discussions in studio? Perhaps to discuss scalar issues, perhaps as an example of what not to design, but a clear awareness of it develops over time. The Reggio schools used their spaces in the same way early in their growth, and through this investigation, realized aspects of their use of the buildings which became fundamental to the future growth of the program, and the design of their future schools. Unfortunately, less than half my current 1st year class claim to have experienced a space they were excited or inspired by, and our studio is hardly inspiring, so relative to an architectural framework, we focus our energies on analysing the positive and negative qualities of the spaces we experience together. I have used common exercises in workshops with preschoolers, architecture camp with elementary aged children and with 1st year design students including rubbings and sketches of building materials, ‘hide and seek’ architecture quizzes, etc, with equal success at each level.

In the first year studio, I have asked the students to focus themselves on their immediate surroundings as a means of looking at them anew, as a means of tangibly putting themselves in the space, testing what they know about the topic and perhaps creating a greater understanding. I do this by using the RE Keywords developed for the ‘metaproject’ on their spaces: relational forms / light / color / materials / smell / sound / microclimate. Relative to scale, we break into groups of 3 and measure each other’s height, arm span, reaching height etc, and then measure an area in studio and their dorm rooms in order to place themselves in a part of their universe and as a way of understanding our bodies as relational forms in space. Their understanding of these concepts relates to Piaget’s ideas and investigations into “movement and space”. Daylighting is introduced via mapping the light in their dorm rooms.
at various times. Then students are asked to change the light in the studio in some way; some choose to work with the artificial lighting, some with the daylight at the windows. Color and materials are introduced in a general way and then the students are asked to change the studio in some way using color. Quite often, these two exercises merge. We do not have partitions between desks in the studio; this allows for the RE ideas of transparency to become part of the environment, such that work and knowledge is shared. Smell, sound and microclimate are more amorphous but approached in the same open-ended way. Perhaps depressingly, the students tend to bring in artificial copies of natural smells (pine soap instead of pine needles, etc). These three RE keywords also tend to merge as students create small different microclimates using smell and sound and some sort of encapsulating device. Later in the semester, a construct is developed to investigate a commonly agreed upon current interest, an emergent curriculum, which allows them to form an occupiable space with these new awarenesses, reflecting a statement by Lella Gandini: “It must undergo frequent modification by the children and the teachers in order to remain up to date and responsive to their needs to be protagonists in constructing their knowledge.” 14

CHILDREN’S MULTIPLE SYMBOLIC LANGUAGES
A very early and basic premise of the RE approach was to recognize and encourage the children in their use of their ‘one hundred languages’ to support their investigations. Children have amazing insights daily; at RE these are recognized and allowed to inform the process of their learning. Because of the inclusive nature of the pedagogy and mode of inquiry, the children feel confident to express whatever they may. Typically, once an idea for exploring is settled on, the children first discuss verbally what their current expectations are, then they quite often are provoked by the teachers via different media. The first stage of investigation usually is focused on line drawings of one color, moving to clay investigations or painting or constructs. This common beginning focuses them on the subject matter; the other media evoke differed readings -like moving from parti to plan to section to model. Of course, just because children are building in 3 dimensions does not mean they understand them; this can be true in our studios as well, in 1st year studio especially. “The inquiry continues: I make to think, as I think to make.” 15  Quite often, the use of visual media to investigate allows pre-verbal communication. “According to Vygotsky, both receptive and expressive language have their origins in the social and cultural experiences of children. He also believed that in infancy and up to about age 2, language was not essential to thinking. This is in line with Piaget’s belief that, in the beginning, thought precedes language.” 16

Very parallel to the concept of “hundred languages” is Howard Gardner’s theory of “multiple intelligences”, recognizing eight differing areas of intellect. 17  In his work with Harvard's Project Zero Gardner has collaborated with Reggio Children to develop a new study, “making learning visible” focused on documenting the learning of children as individual and group learners. 18

Architecture is a study that fully supports growth in all aspects of multiple intelligences, through the use of the student’s “100 languages”. The capacity for our students to uncover talents they did not realize they had, and for us to guide the strengthening of these is where I feel the relationship to RE pedagogy is closest. The focus in the upper years of design education on the final design, the final review, need not be the case in the first two; the objective should be to develop a design methodology that works for each student. The fluid nature of the progettizione of RE is expressive of this. A recognition of the worth of the investigation itself is primary. It has been my observation that our students compartmentalize, that is, I need to point out to them that what they are learning in drawing class could be furthered with their work in studio, and vice versa. At the high school level, unless they were in a school that favored an integrated curriculum, this compartmentalization was the norm. As noted in the Boyer Report, “innovation (in the American classroom) does not exist because education is still primarily about learning what’s been done, simple accumulating information. Students are not taught to become dexterous at transforming, changing and handling information.” 19

In our varied situations, we need to develop a place of acceptance, in order to support our students in the same way to cultivate these same insights. It is a difficult task we are setting for them – to drop all pretext of social correctness and the need to be ‘right’ all the time in order to make the forward movement towards a truly open-minded, creative
way of thinking. A true and thoughtful respect for their situation is important; we are asking them to relearn how they see, speak and think in most cases. A suspension of disbelief is important, as well as a capacity to question their existing mental framework. Almost every year, the 1st years are surprised at the creation of as many different projects as there are students, who in high school predominantly were expected to work toward the same ‘correct’ outcome as their peers.

**DOCUMENTATION AS ASSESSMENT AND ADVOCACY**

The documentation of an RE project is a reflection of the process of the learning. It is compiled onto documentation panels; the teachers assemble their copious notes and images, which include notations of who said what while looking at whom and formalize the overall event and the learning that took place and transcribe the salient to the boards. The documentation of a RE project is visually composed such that the focus is evident, without losing playful details. The mounting of the panels in the building is a conscious, public declaration of the worth of the work, and serves to inform all. They are posted for some time, and the students proudly remember their leaps of understanding as well as use the panels as research material for their future investigations.

In our studios, the primacy of the work is apparent as well – it is everywhere! Asking the students to compose their conscious, public declaration of the worth of the work, and serves to inform all. They are posted for some time, and the students visually composed such that the focus is evident, without losing playful details. The mounting of the panels in the building is a

**LONG TERM PROJECTS/PROGETTAZIONE**

“Activities stem from the interests and the ideas of the children. They have an active role in the planning of the curriculum, and their personal input is shown in their creative art experiences. The result is that children express themselves artistically in a much more mature way than most children their age (Katz, 1990).”

RE teachers use the term progettazione, which means to plan, design, project, (rather than the norm programazione, to program) focusing on learning versus teaching – the first an active, conflictive, rich process, the second, a discrete dissemination of a known quantity. This leads to projects abandoned, investigated to varying degrees, etc., and in this way the open-ended progettazione can be different from the typical studio project, in that we are meeting NAAB requirements and usually need to give our students some concepts of deadlines. However, the process and the richness can be the same, and as has been noted in RE, one deeply studies project can be better than three shorter ones. I have used a communal project in studio to investigate the idea of emergent curriculum; commonly establishing a topic or idea to investigate, and working on it as a group through different media while the overarching studio project is worked on individually by the students continues. Because it is not the primary focus of the studio, the projects tend to wax and wane, but the students have noted that they saw value in working together on a separate topic.

RE classes are together for 3 years with the same teachers and the same cohort group, which allows for deep, intense relationships. As in studio, there are usually small groups which form but are very fluid, in investigations – they might be in parallel or not, but they inspire one another and prompt new thoughts. In studio, I feel due to the time and closeness to the topic we all feel that this same intensity can be achieved, although it may not be desired. In an RE class, rules are discussed and agreed upon – learning to be respectful, together. This can and must happen in studio as well; the students and faculty have a vested interest in their space and their relations. As with most architecture schools, the children of RE have a high level of respect for each other’s work; I have seen exuberant 4 year olds slow down to walk carefully around a construct one of them was building in the piazza space with bits of plastic and glass.

The strength of each of the settings is the passing around of knowledge by the group, each having a different reaction to it. This social constructivism or “mental activity bound to social context” is fundamentally orchestrated by the teachers, but the students complete it. In both cases, the strength of long term projects/progettazione come through allowing the students to learn, through exploration, creation and appreciation.

As Rinaldi noted when asked about the reaction of the schools to the September 11th tragedy, “it is not neutral; the schools
parallel humanity.” Our schools are the same, our students look to one another for peer
evaluation of their experience or current world events. “Children listen to the meaning of
life in all its colors; they listen to each other using peer groups as constructors of knowledge -
rather than adults alone...they understand that differences have power...and that uncertainty
is not insecurity.” Together the cohort group of each year support one another’s growth
and learning about their differences through open investigation and dialogue – they form their
community in their public space. The class’s diversity, racial, economic, geographic, allows
these citizens of the world to begin to also work with one another, to ‘read’ one another as they
will ‘read’ clients in the future and to share the richness of their experiences and outlooks.

THE TEACHER AS RESEARCHER

In the RE schools, the primary objective is learning together, rather than simply teaching; this
image of the teacher as co-researcher accommodates their role as provocateur, complicating
already complex thought. The teachers work out which inspirations they could bring to the
children that might have greater potential – drawing a soccer player rather than drawing a
random body, wrapping a room with paper and leaving the crawling children some markers.
Like a scientist, the RE teacher is setting up an experiment and reporting on the results;
however, the subject matter of the experiment has been determined through the children’s
discussion and decisions. “Meanings for children are constructed in context, and this can be
assisted through many planned experiences. When teachers talk with children about their
ideas and encourage them to talk with each other, children are better able to construct and
reconstruct concepts. Children’s thinking becomes more explicit because they are using verbal
symbols as well as thoughts. Likewise, children’s thinking becomes more explicit as they express
their thoughts through artistic symbols.” This constructivist view of knowledge being constructed by the learner rather than being transmitted to the learner is obvious; however, in conflict with Piaget, the teacher’s role is fundamental to the RE process. The
cycle of inquiry is open and constantly being reevaluated by the teachers; noting insights,
reframing questions and bring these back to the students.

In studio, we typically bring a formed project idea along for the studio to work on,
rather than a free form search for an objective, but the results are as rich. In terms of the
pedagogical model - is it acceptable for us to allow our students to know that we are learning
from them and their insights? I believe so; the tangible, (NAAB criteria) should of course
be directly expressed to support their explorations, but how often have you wanted to step in
and ‘take over’ a student’s project due to it having some wonderful quality that you wanted
to investigate further? This enthusiasm and interest usually directly translates to the student.
As Loris Malaguzzi noted in ‘A Charter of Rights for Children’: “...And this is so much truer
when children are reassured by an effective alliance between the adults in their lives, adults
who are always ready to help, who place higher value on the search for constructive strategies
of thought and action than on the direct transmission of knowledge and skills.”

NOTES

1 Rebecca New, “Reggio Emilia: Catalyst for Change and Conversation”, ERIC/EECE Digests (December 2000).
3 Carlina Rinaldi, notes from presentation, Reggio Emilia Study Tour: May 2002.
6 Lella Gandini notes from presentation, Reggio Emilia Study Tour: May 2002.
8 President of the National Academy of the Sciences, Alberts, 1997.
9 Carlina Rinaldi, notes from presentation, Reggio Emilia Study Tour: May 2002.
11 New, Rebecca. “Reggio Emilia: Catalyst for Change and Conversation” in ERIC/EECE
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13 Ibid.
14 Lella Gandini, notes from presentation, Reggio Emilia Study Tour: May 2002.
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25 ALTHOUSE p 4

REFERENCES
To remark on diversity, one has to look beneath the surface of a subject; to dig to the source. In order to envision anything, one must have the capacity to move inward, to imagine and to invent.

In the interdisciplinary beginning design studios at Iowa State University, both of these inward and outward reaching processes are taking place simultaneously to define a new studio.

A contemporary reading of ‘studio’ refers to an almost clinical space. A ‘studio apartment’ is lofty, a bare-boned dwelling. There are ‘production studios’ for movie, television, film, and radio. These studios are reliant on an audience, a detached and distant group of non-peers on whom they depend, and for whom they perform.

‘Laboratory,’ on the other hand, is a term that refers to a place for practice, for observation, and experimentation. Laboratories are method-based, places built for the purpose of making mistakes. The participant in a laboratory is the audience. The scientist, the designer, participates and observes. Interdisciplinary study folds the two into one, bringing design education back to the drawing board, and away from the white walls of the exhibition space.

The surprise in new ideas, the a-ha and what-if return when analysis couples with invention, discovery with creation.

In the last year of my five-year undergraduate architectural education at Iowa State University, I was part of a small team, the Interdisciplinary Design Lab (IDL) that voiced a movement in the College of Design to engender diversity in the first-year studios by expanding a discipline-specific beginning design studio (Architecture 102) to embrace the other disciplines that allow the Department of Architecture to thrive: fine art, cultural studies, landscape architecture, community and regional planning, interior design, graphic design, product design and digital media.

The name of the search for a new design studio was Envisioning. Envisioning, of course, is never a linear process, but an evolution that begins with a sketch. The sketch for this process is Design 102X, Learning Lab (‘the Design Lab’). The Design Lab was promoted as a “learning conducive environment exploring a full spectrum of architectural ideas,” meant to articulate a common language (understanding language as a series of linguistic acts, another form of building/doing/making) crossing disciplines, and culminating in good design.

Design 102X piloted the Envisioning program in the fall session of this year. The results of this class would determine the continuation of such integrative efforts among first-year education in the College of Design at Iowa State University.

And, it worked. A studio that was open to all first year Bachelor’s of Architecture degree candidates, Design 102X looked to modern precedents. Texts cited and referenced in the class were contemporary architecture/culture books. Work coming out of the Design Lab, which I was fortunate to observe as a teaching assistant, was truly innovative, interdisciplinary design work, guided, rather than strictly instructed, by Mitchell Squire.

The term laboratory reminds us that the longer we study something, the less familiar it becomes. The Learning Lab is an opportunity to integrate and assess students’ learning in a variety of modes and contexts, blurring the boundaries of specific disciplines. The instructor sits as part of this group, not dominating it, but lending and tending to the discussion and learning process. This relationship between analysis and invention fuels discovery and fights stagnation and redundancy in the classroom.

In the Design Lab, conceptual and material possibilities came together, mistakes happened, and, I believe, as someone that engaged in this process as an observer, real discoveries were made.
Studio is a verb. In Italian, studio is an act; it means ‘I study.’ In American design education, studio is a noun, a location. It is a space with white walls and high ceilings. It is a place, not of development and study, but of production. A contemporary reading of ‘studio’ refers to an almost clinical space. A ‘studio apartment’ is lofty, a bare-boned dwelling. There are ‘production studios’ for movie, television, film and radio. These studios are reliant on an audience, a detached and distant group for whom they perform. The antonym to this definition, and a word embraced by Iowa State University’s developing beginning design initiative, is ‘laboratory,’ a term that refers to a place for practice, for observation and experimentation. Laboratories are method-based, places built for the purpose of making mistakes. The participant in a laboratory is the audience. The scientist, the designer, participates and observes. This movement at Iowa State University seeks to bring design education back to the drawing board, away from the white walls of the exhibition space.

The surprise in new ideas, the a-ha and what-if return when analysis couples with invention, discovery with creation. In the first semester of my graduate, master’s of Architecture degree candidacy, I was fortunate to be a teaching assistant to two studios at once: Mitchell Squire’s Learning Lab 102x, and a studio that I myself had experienced as an undergraduate, Charles Masterson’s Architecture 102 class. Based on Cooper Union’s model of architectural education in the 1990’s, it worked to make architectural projects a conscious and rigorous process for first-year students. I recall that at the time, as an entering pre-architecture student, the discipline seemed to vacillate between comprehensible and incomprehensible. What made sense one day, the next day would be spun into something almost too abstract and too removed from any real experience.

Pre-architecture students at Iowa State are required to take a pre-professional studio, the outcome of which will determine their eligibility for admission to the professional program. This studio is open to all disciplines, but focuses on architecture. Meeting twice a week for three hours each time, in groups of fifteen to twenty students, projects begin on independent terms and develop into teamwork. It is a project-based studio, and introduces potential architectural students to the culture of the studio. The first assignment/project is known simply as the Pattern Project, a study and “making strange” of a common household tool. On the first day, typically, the instructor offers a brief menu from which the students may choose a hammer, a ladle, or a clothes iron.

Five phases, and critical aspects of architectural activity were applied to these objects: descriptive writing, documentary drawing, volumetric construction, analytical writing, and the synthetic registration of process.1

Unpacking these five concise phases reveals what they seek to inscribe in the students. By analyzing the tool through writing, studiously analyzing the object, the student consciously re-languages and learns anew the object’s form, its materiality, and its relationship to the body and the domestic environment. This re-languaging continues into the activity of drawing the object. A pattern drawing of the tool represents the way this tool might be translated into a two-dimensional plane. The tool is unidentifiable within the abstract shapes of its pattern. Precision and detailed accuracy of the tool’s form are valued outcomes. The strange drawing is meant as a visual presentation of the preceding essay.

The language of the tool ultimately takes on three-dimensional concerns. Pattern pieces derived in the drawing of the object become the building blocks for an abstract sculpture, a ‘space container.’ The space container echoes the interests of the preceding phases.

This writing, drawing, and making process recycles with a fourth phase, another piece of analytical writing reflecting on the design and the construction process of the abstracted space container. In the fifth and final phase of the Pattern Project, students create a drawing that describes the design principles and conceptual framework of the space container. 2

The phases do span writing, drawing, and construction. The student does learn to build relations between methods of representation that will occur repeatedly throughout their education. Rigorous reminding of the importance in design intent, and an unwavering commitment to the concepts behind the making are what make this process, and this studio strong. What it lacks, however, is the connection to our world. When students make leaps into analyzing the conceptual aspects of a hypothetical pattern drawing of a soup ladle for two weeks, they lose their connection to the design of the everyday. They get caught up in a spin-cycle of language that is less about the communication of a usable design and more about the communication of an ephemeral idea.
The most valuable aspect of the first year studio projects, I believe, is the employment of the “making strange” technique. Distanced from the object, brought into the realm of analysis, a sort of architectural laboratory, we are eventually brought even closer. It is what one first year studio instructor, Karen Bermann, describes as *dismantling-to-look-more-deeply.* She cites it as “a way to lean about relations in creative work: relations between writing and designing, drawing and building, impulse and study, analysis and invention, laughing and thinking.”

The Architecture 102 project immediately following the *Pattern Project* is known as the *Precedent Study Project.* It introduces students to the intricacies of actual architectural design as they analyze, through a precedent building, the making of inhabitable space. Students learn to represent this thinking through drawing and model-making, all the while being reminded of the importance of documenting the process of design.

In the case of the studio that I acted as teaching assistant for, the *Pattern Project* was replaced with a design-based ‘show and tell,’ in which students chose to re-present what they believed to be good architectural design. For two weeks, the students worked to get a handle on the appropriate way to represent their favored design, and their final presentations ran the gamut from digitally manipulated photography to water-colors. Following this brief studio culture introduction was the *Precedent Project.* The *Precedent Project* focused on residential architecture, seeking to challenge the students’ pre-conceptions of the nature of the house and the process of its architectural design. Students formed their own teams based upon their selection of the precedent they wished to study. Researching their selected precedent project by determining its publication history through library collections, architectural and art indexes, and the internet, students compiled a bibliography of sources as they sought to define a set of issues specific to each precedent.

The *production* involved in the *Precedent Project* puts an emphasis on re-drawing as a way to understand the employment and meaning of construction lines. Students learn the role of construction drawings as a means of spatially relating the two-dimensional images of plan, section and elevation into three-dimensional representation that mimics the act of construction.

Their first three-dimensional construction in this project is a study model developed out of waste material, cardboard boxes and such, as a way to provide a guiding image of the precedent’s site, mass, and spatial relationships. A final set of drawings conveying all relevant information is augmented by site (and other contextual information), light and inhabitants. Based on this rough, preliminary model, students make a final model that is designed to be taken apart and viewed section-ally.

The final project in Architecture 102 is a design project grounded in a student’s critical interpretation of the precedent. It seeks to demonstrate their learning from experience, keeping in mind that real learning is only evident in the work that demonstrates it. It introduces beginning-level consideration of the issues of culture, site, and program, focusing on the critical design of the architectural process and documentation of its products through drawing and model-making. The program is the temporary inhabitation of one person, a retreat and escape from campus life. Restrictions determine that the footprint of the structure is not to exceed 100 square feet, that there should be no electricity, no plumbing, and that it must be possible to carry all construction materials onto the site by hand. The decided site is a wooded area behind the College of Design building.

The studio projects I described are similar to the studio projects beginning architecture students had encountered for years. The pre-architecture studio produced students that were proficient for first-year architectural study, but had little design exposure outside the typical figure drawing or sculpting classes offered. During the 2001-02 academic year, an envisioning committee formed to address this concern. After proposing, debating, and approving the motion, it was decided that the Architecture, Art & Design, Community & Regional Planning, Graphic Design, Interior Design, and Landscape Architecture departments would merge their beginning design education programs into one core unit.

What they had envisioned was a College of Design centered on *making.* This interdepartmental approach was envisioned as a *common languaging.* If in the first year of design studio students are speaking the same language, one can imagine that as they progress in their education, they will build a language that, while it is specific to their discipline, is based on the design language they acquired in the first year studios. Students in the various...
disciplines will be able to better communicate with each other, and themselves, the intent of their design. Design will enter the everyday, be conscious, it will engage outside of itself, overcoming the boundaries of disciplinary specialization. The goal, ultimately, was the creation of an academic environment in which all degrees are equally meaningful and rigorous, and all offering are rooted in the land-grant principles of Iowa State’s larger university (including its bias toward science with practice).

Traditional design education is based on teaching knowledge and skills. This isn’t helpful to the design student whose undergraduate education will span four or five years. What is imperative is the outcome of this education. Can the student design? Real learning is only evident in the work that demonstrates it. Everything designers have learned, or have not learned, know, or do not know, are able to do, or are not able to do, is evident in the making.

When speaking of the concept of being interdisciplinary in the beginning design education program, one is speaking about the relationships between various faculties. The students have no discipline to speak of. What they have to draw on are their shared and their individual lived experiences.

The program, it was thought, should evolve in a fluid manner, course by course, proposed by teams of faculty members. It would not be a cut and paste of existing classes, and it would not be specified in advance of implementation.

An initial development team, consisting of one assistant professor (Arch.), three lecturers (Arch., Art/Design, LA/CRP) and two undergraduate research assistants (Arch., LA) researched the possibilities and precedents in other undergraduate design schools. They came to the conclusion that this proposed course should be autonomous of all design disciplines. It would, in fact, be centered on “making.”

The assistant professor in this team, Mitchell Squire, proposed his concept of a beginning design studio as a “learning conducive environment exploring a full spectrum of architectural ideas.” The course was envisioned as a way to articulate a common language crossing disciplines, culminating in good design. Design 102X, Learning Lab, piloted the Envisioning program in the Fall session of 2003. The results of this class would determine the continuation of such integrative efforts among first-year education in the College of Design at Iowa State University.

**Design Lab: A space of analysis and invention.**

The Design Lab: A learning conducive environment, exploring a full spectrum of architectural ideas, articulating a common language. To the developers of the Design Lab, language is another form of building; doing; making. Language, an everyday construct, becomes a design tool, and a key for future growth. Good design isn’t discipline-specific. The term laboratory reminds us that the longer we study something, the less familiar it becomes. The Learning Lab was developed as an opportunity to integrate and assess students’ learning in a variety of modes and contexts, blurring the boundaries of specific disciplines. The instructor, Mitchell Squire, sits as part of this group, not dominating it, but lending and tending to the discussion and learning process. This relationship between analysis and invention fuels discovery and fights stagnation and redundancy in the classroom. Conceptual and material possibilities come together, mistakes happen, and real discoveries are made.

A belief in a series of design commonalities between the disciplines, and the existence of a common language inspired the development of Design 102x. The structure for this pilot course was a set of what Squire describes as “ability-based criteria” common to the six design disciplines housed in Iowa State’s College of Design: Architecture, Art & Design, Community & Regional Planning, Graphic Design, Interior Design, and Landscape Architecture.

Design 102x was to be an autonomous entity in the College. Rather than harvesting past programs and existing courses, it was entirely its own. It was not considered ‘interdisciplinary,’ as beginning students have no discipline, expertise, or knowledge. Instead, the course’s curriculum focuses on contemporary concerns addressed by multiple design disciplines. Their precedents and exposures are interdisciplinary, not their curriculum. “Its foundation rests on a commitment to the question of how particular identity or difference, whether disciplinary habit, cultural construct, or global concern, can be accepted as a universal condition.”

Squire’s chosen contemporary concern for the Learning Lab was the “commonplace,
everyday.” He began by having the students think about the conditions that influence the design encountered in everyday life; the current trends in everyday material culture; the strategies and resources employed by designers to strengthen conceptual and creative/critical thinking. This method allows the students to begin developing a set of common abilities that familiarizes them with the various disciplines of the College, engaging design in a variety of modes and contexts. Re-designing beginning design education is, in a sense, re-designing the design student. After enrollment in Design 102X, design students will be eligible to apply to any of the six disciplines in the College of Design.

The process of envisioning this new beginning design program began non-linearly, as a simple sketch that promised to evolve into a full-fleshed design. Envisioning involves research, learning, innovation, experimentation, implementation, and evaluation. What was envisioned was a college that didn’t give exams. No computer-coded answer sheets, no blue books, no standardized assignments. A college of design that could embrace ability-based learning outcome education. It would recognize that the knowledge every student brings with them to college would be enough to start them out conceptualizing and realizing projects that were more than last year’s recycled design studio assignments. The beginning design education that was envisioned would encourage students to integrate and assess their learning in a variety of modes, and a variety of contexts.

In completing their Beginning Design Education under the Envisioning program, College of Design students will have demonstrated the abilities to (1) investigate through the processes of design the external world and the world of thoughts, ideas & imagination, (2) translate subjects observed and imagined into two-dimensional images and three-dimensional constructions, (3) research, analyze, and appraise a variety of references and resources, particularly the work of artists, designers, and craft workers, (4) develop a body of knowledge, skills, and understanding in the use of a variety of visual and material design processes, (5) appraise and evaluate their own design work and the work of their peers, (6) effectively collaborate in design teams, (7) demonstrate design literacy in verbal, visual, and written presentations, and (8) demonstrate craftsmanship in multiple media.

The new Design Studio (the still developing concept that led to the Squire’s piloted Learning Lab 102X) would take into account conditions that had slipped by the wayside of first-year architectural education, but that are inherent in all design disciplines. Assignments would engage (1) design literacy, materiality and human inhabitation and interaction within the context of design, (2) media and its relationship to the design process, (3) basic research methods that strengthen conceptual and critical thinking, (4) design within the context of site, region, and society, (5) the influence of human diversity upon design, (6) interdisciplinary design processes within professional practice, (7) assignments that explore physical materials and methods of fabrication, and demand attention to craftsmanship, (8) verbal, visual, and written presentation methods that demonstrate design literacy, (9) methods of cooperative and collaborative learning that extend students’ moral, ethical, creative, and intellectual growth outside the studio environment, and (8) formal design principles to enhance students’ abilities to recognize, understand and interpret the organization of two and three-dimensional space.6

Studio is a verb.

Design-ability is measured through learning outcomes: what do the students make? When this is the primary criteria for course evaluation, it becomes clear enough that the more diverse the works produced in a studio, the more the students have engaged themselves, and responded through their projects. The undergraduate education at Iowa State University continues striving to offer opportunities for students to develop not only the knowledge and skills, but also the discernment and intellectual curiosity needed for life-long learning and productivity. The surprise in new ideas, the a-ha and what-if return when analysis couples with invention, and the studio becomes a laboratory for design experimentation and the study of the (strangely) familiar.

REFERENCES
3 Charles Masterson. “Architecture 102, A Course Description,” (Fall 2003). Iowa State University, College of Design, Architecture Department.


Figures 1-3: imagine, innovative design education booklet by IDL.
Individual Identity in a Group Assignment

In the Florida A&M University beginning design studios, first year studio assignments are traditionally done by individual students. Group activities and assignments are typically incorporated later in the curriculum. This format creates serious misconceptions and problems as it (1) fosters the belief that individual students are competing against other students, and (2) perpetuates the myth of the builder working in isolation in his/her individual exploration. The existing process constrains possibilities, experiences, and ideas that could potentially create a multitude of outcomes.

An effective and efficient way to promote the communication of a diverse range of architectural ideas is through the structuring of group assignments that encourage individual identity. As Graduate Teaching Assistants in the first year design studio, we served as project facilitators for the first 12 weeks. For the final project, we designed an assignment that utilizes individuality to facilitate the exchange of ideas and expertise.

Diversity (through the form of group assignments) can mitigate critical issues of studio culture, specifically, individual awareness, and the exchange of ideas. The project was designed to engage these issues of studio culture, with a specific focus on abstraction, media, and connection. The student project was developed in two phases.

The first phase of the project was an exploration of space-making through materiality. Seventeen students were broken into five material groups that reflected their media: molding, wood, metal, glass, and paper. Each student within a material group was responsible for creating one space making object and its appropriate drawings (plan and perspective). However, the collective work of each material group was intended to function as a library of pieces that would demonstrate the range of possibilities intrinsic to that material group.

The second phase was an exploration of composition and context. Students were divided into three teams of five to six people. Every team received at least one representative from each material group to create a diverse team of material experts. As a team they used their individual pieces as a kit of parts to create one cohesive object. Keeping in mind connections and joints the team designed the method for integrating the pieces into a single object based upon the properties of the materials. The team created this new field by researching context, surrealism, color media and architectural rendering. The final result was a spatial model composed of individual object explorations, placed within an appropriate imaginary context through detailed drawings (section and color sketch).

abstract

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In December 2002, The AIAS created a taskforce to evaluate the condition of studio culture in architecture schools across the nation. Amongst their findings, was a concern expressed for the insufficient presence of programs that respected and promoted diversity. However, what exactly is diversity? Diversity, as outlined by the call for papers for the 2004 National Conference on the Beginning Design Student entitled, Not White: Diversity In Beginning Design Education, referred to two aspects of diversity: (1) “a wide range of people” or cultural diversity, and (2) “a wide range of architectural ideas” or intellectual diversity. The goal of this paper was to address intellectual and cultural diversity through the content and structuring of two first-year studio projects. Project 1 Space-makers, a fall semester project, looked at collaboration and individual identity as proponents for intellectual diversity. Project 2, Exploration of Generational Icons, a spring semester project used movies as a subject matter to integrate current culture into the design studio. The results of these projects led to the formulation of three major key points relating to intellectual and cultural diversity in the beginning design studio:

1) Group projects are effective vehicles for introducing a diversity of architectural ideas into studio culture.
2) Self-Awareness is paramount to maintaining an atmosphere of diversity. A group project context can reinforce individual identity.
3) First year design projects should promote the critical analysis of current culture and architectural precedents through synthesis.

I. PROJECT 1: Space-Makers: An Investigation into Collaboration

In the Florida A&M University beginning design studios, first year studio assignments are traditionally done by individual students. Group activities and assignments are typically incorporated later in the curriculum. Even then, this concurs with the AIAS Task Force statement that “group projects are most often limited to pre-design activities of research, analysis, and site documentation. The synthetic processes of design, in which negotiation and collaborative skills are most critical and difficult, are limited to individual effort”. This format creates serious misconceptions and problems as it fosters the belief that individual students are competing against other students, and perpetuates the myth of the builder working in isolation in his/her individual exploration. The existing process constrains the scope of possibilities, experiences, and ideas that could potentially create a multitude of outcomes. An effective and efficient way to promote the communication of a diverse range of architectural ideas is through the structuring of group assignments that encourage individual identity. This project was designed to engage students in the collaborative process, with a specific focus on materiality, and expertise. The student project was developed in two phases.

The first phase of the project was an exploration of space-making through materiality. After compiling a thorough list of typical model making materials, the list was broken down into five major categories based on material properties. Seventeen students were distributed within these groups. The final categories of groupings were: wood, molding, paper, metal and glass. Each group considered a wide range of materials and manipulation within that category. The materials within the categories were as follows:

Wood group- all types of wood
Molding group- plaster, clay, soap, mold, and wax
Paper group- museum, chip, foam board, vellum, Mylar, regular paper, corrugated board
Metal group- copper roll, aluminum roll, mesh, metal, wire, metal rods, heavy metal
Glass group- plexiglass, acetate, plastic, craft plastic.

Each student within a material group was responsible for creating one space making object and its appropriate drawings (plan and perspective). The collective work of each material group was intended to function as a library of pieces that would demonstrate the range of possibilities intrinsic to that material group.

The second phase was an exploration of composition and context. Students were then divided
into three teams of five to six people. Every team received at least one representative from each material group to create a diverse team of material experts. As a team they used their individual pieces, made from varying materials, as a kit of parts to create one cohesive object. Keeping in mind connections and joints the teams designed their method for integrating the pieces into a single object based upon the properties of the materials. The final result were, spatial models composed of individual object explorations. These spatial models were placed within an appropriate imaginary context expressed through detailed drawings (sections and color sketches).

Overall, this first year end of the semester group project served as an efficient way to, (1) introduce a range of architectural ideas, and (2) promote self-awareness through identity within a group context.

1. A Range of Architectural Ideas: Materiality

In the beginning design studio, it is important to expose students to a range of fundamentals skills and techniques. The structuring of this project integrated a diversity of student types with a diversity of concepts such as abstraction and interdisciplinary information. However, the chief objective was to establish an awareness and understanding of materiality in the participants.

Prior to this project, model building materials was an area that had been a challenge to instruct because material inclusion into a project usually applies to final presentation when students are working outside of the studio. It was in the instructors’ experience that as a result, students typically learned to use different materials through persuasion, informal experimentation, or out of class observation. It seemed they rarely experimented with materials from fear of questionable results. Thus their work lacked variation. Not only was there monotony in material choice, concepts like structure and form were learned in isolation from materiality.

Student collaboration allowed for a comprehensive investigation of materiality as a multifaceted concept. Overall, materials became the means to explore, enclosure, texture, skin, layers and connection. The group format of this project served as an efficient method for introducing an extensive amount of materials and their properties to every student in just one project. It also provided a venue to explore the relationship of these numerous materials to one another. Although in the first phase, each student was not able to use each material within a category, they could witness in close proximity the application of the other materials. In phase two, students were required to communicate amongst one another about the properties and behavior of materials in other categories, thus acquiring ideas for future reference. Their goal was not simply to create objects for aesthetic satisfactions, but to demonstrate material capabilities by creating objects that would communicate rather than just please. In this manner, the process of discovery became as important as the product.

2. Individual Identity and Self-Awareness through Collaboration

Often beginning design studios do not introduce projects that encourage students to cultivate character by investigating their own identity. This forfeits valuable opportunities for self-reflection and growth. However, in their 2002 report, the AIAS Studio Culture Task Force outlined the importance of identity. They pledged that “individual learning, personal development, and mastery are crucial requisites of studio education”. Unfortunately for many design environments, the creative process has remained a polarized issue where individual identity and collaboration are mutually exclusive. The myth prevails, that collaboration with other students, means giving up the best ideas (AIAS Taskforce). The AIAS Taskforce attributes some of the difficulties in merging individual skills with collaborative skills to a lack of purpose. “Student designers are nascent and insecure in their capabilities. They often bring similar rather than complementary, skills and knowledge to a team project.” One goal of this project became to create a collaborative environment that programmed individual identity and expertise into its structure.

After twelve weeks of projects, observations, and evaluations, the facilitators designed
the groups and teams for the last project based on observed technical ability, and social temperment. Students exhibiting a keen understanding of materials, abstraction and form were divided amongst the teams to work with materials which required more patience or exploration in effort to form complimentary relationships.

The phases of the project had different layers of comfort associated with group work and individuality. In phase I within the material groups, most people were novices handling the material for the first time. This discomfort was balanced by the availability of advice from other group members. Students in a material group were to sit together and brainstorm about the possibilities of manipulating their material. Each student decided which form of the material would work best with their skills and interest. This freedom allowed room for demonstration of individuality through preference. In this phase, the students did not have to share a design task. Groups were formed for the sole intention of students beginning to learn to communicate their design ideas effectively, and gain confidence in viewing classmates as intellectual resources. Their identity was defined by the aspect of the material that they chose to explore. Since each student chose a different aspect their identity could be clearly expressed without competition. As the students experimented, they became comfortable with their personal techniques and abilities without the added pressure of a shared design task.

Within the final teams in phase II, each student then functioned as an expert of a certain material. By pre-establishing their identities in phase I, students exhibited confidence in having advanced specific knowledge about the properties of that material. Their role was clear. He/she was responsible for making his/her piece an intricate part of the final group object. However to maintain democracy, individuals were forced to re-evaluate their own form with objectivity in terms of strength, compatibility, size, and craft. The entire group had to collaborate as a unit in deciding upon the most appropriate way to arrange and join their pieces to make one cohesive object.

In this project, individual identity was cultivated by explicitly establishing expertise amongst students. Each participant had a clear role and brought different resources to the group. This project mimicked the architecture profession by defining the design process as a collaborative process between peers of equal yet differing intellectual backgrounds and expertise.

II. PROJECT 2: Exploration of Generational Icons

Cultural diversity plays a vital role in design. Social experience based on age, race, gender, and heritage can serve as a tremendous source of inspiration and information. Therefore, it is critical that studio projects are programmed to allow students the space to express their cultural identity as well as their own conscious reflections on current collective culture, even at a beginning design studio level.

Project 2, Exploration of Generational Icons was designed to encourage students to make a connection between the academic architectural world, and their own previous personal and cultural experience. It was introduced in three phases. In the first phase students delved into the visual language of two iconic films of their choice. In these investigations they identified colors, patterns, materials, and forms that were representative of the visual character of the movies. From these explorations they composed one sample board per movie. Each board contained a five color study, four material samples, two pattern samples, and two form samples. The results were two distinct visual libraries based on film.

In the second phase, students chose their most informative movie board to act as a reference palette to aid them in the selection of an appropriate architect or architectural style. This decision was based on observations about similar form, materiality, and pattern found between their movie palette, and architectural works of the past, and present. Students then created an 11x17 digital composition of images and various related text on their chosen architectural precedent. At this point their visual library contained the following: 5 colors, 4 material samples, 2 pattern samples, 2 form samples, and 1 architectural precedent (digital composition).
In the third and final phase of the project, students used their visual libraries to design a habitable space using concepts and construction materials from their palette. There were no specific programmatic requirements for the space concerning function, or scale. Instead, students were instructed to use their design to address closure and enclosure, mass and void, entrance and openings, scale and proportions, structure and organization, and light. The students used their movie palette, which became a site analysis of sorts, and architectural precedent, to help mitigate these issues.

The overall focus of this project is addressed by key point (3) design projects should engage students in the critical analysis of current culture and architectural precedents.

3. A Synthesis of Current Culture and Architectural Precedents

The AIAS Studio Culture Task Force outlines the importance of students exploring the relationship between the built environment and the larger cultural context. However, beginning design studios rarely contain subject matter that is reflective of current culture. Students are taught applications in visual technique concerning color, figure-ground, massing, extrusion, etc. without much reference to its application to real life. As a result, students learn visual technique in isolation from their everyday world. Project 2, Exploration of Generational Icons allowed students to actively and assertively dissect their visual world, while enhancing their visual thinking through traditional structuring of critical analysis.

A primary goal of this project was to build the students’ ability and skills needed in visual thinking about the world around them. Students explored form, materiality, patterns, and color. However, permitting students to choose movies for study, along with the familiar content of the movies, allowed them to manipulate the information with more authority. Instead of assigning the students the task of analyzing unfamiliar architectural works born from unfamiliar cultures, they critically dissected information which proved to be less intimidating, and more manageable because they could relate to it. A flexible project structure further empowered the students by giving them the opportunity to make choices about what was appropriate and worthy subject matter for study. The films chosen embodied aspects of the values and ideals of their generation and culture, as well as appealed to their own personal identity. This allowed students at beginning design level, to begin to understand the relationship between visual expression, emotional content, and culture. After review of their “site analysis” for one of their movies, students then chose an appropriate architectural precedent to add to their visual library. The confidence gained in the first phase continued on into this second task. Instead of blindly selecting an architectural precedent, students sifted through styles and typologies in search of something that would fit their needs. This forced them to take a more critical approach in looking at architecture of the past based on concepts and ideas from today. Their final design of a space became the ultimate manifestation of their synthesis of thought.

In Project 2, Exploration of Generational Icons, movies acted as a link between the entertainment culture of the students’ current world, and the subject matter taught in architectural studio. Students learned strategies and methods of visual thinking that they could immediately apply in thought to their current social environment. Proving, that both the components of everyday life, and the visual techniques learned in academia, belong to the same visual world.

III. POST-PROJECT REFLECTIONS

This paper offered methods for addressing intellectual and cultural diversity in the beginning design studio based on three key points: 1) Group projects are effective vehicles for introducing a diversity of architectural ideas into studio culture, 2) A group project context can reinforce individual identity, and 3) First year design projects should promote the critical analysis of current culture and architectural precedents through synthesis. These strategic concepts were explored in two first year design studio projects. An evaluation of the experience was completed by the students and instructors.
Project 1, focused on materiality, and expertise by engaging students in the collaborative process. Working in a group setting gave students an opportunity to make conscious connections with their peers regarding architectural ideas and material methodology, while maintaining a sense of self-identity. Students expressed that they were able to communicate their ideas better because they felt more comfortable with their own talents after developing expertise. In addition to this increased self-awareness, many commented that they received a keener understanding of their own habits after working closely with peers. Groups that experienced an uneven distribution of work load gained an appreciation for time management, accountability, and resourcefulness. Moreover, materials used and concepts learned during the project became a new source of expertise for future explorations.

Project 2, explored fundamental design concepts by focusing on an aspect of current culture’s social environment: film entertainment. In this project, students formulated a visual library of information through gradual steps. This information was synthesized and connected to architectural precedence, before being utilized for the design of a habitable space. The familiar content of film served as a device for students to connect learning and architecture to their personal experience and previous knowledge. Students gained the understanding of important visual techniques by critically analyzing informal subject matter with interest and confidence. In post-project review students revealed they have begun to apply a deeper level of visual thinking to life beyond the classroom. Many commented that they now look at movies from a different perspective. Since the project completion, they experienced instances when they found themselves watching movies while simultaneously recording the color palettes and architectural details captured in the films. Overall, this project embodied a referential process for synthesizing everyday life with architectural education.

In conclusion, the issues by the AIAS task force served as a useful foundation in identifying and correcting misconceptions concerning studio culture. The format and outcome of the two projects presented proved to be a valuable learning experience for both instructors and students. Insights to studio culture and diversity were gained through the presence of collaboration, self-awareness, and current culture in the structuring and content of design projects. As a result, both students and instructors yielded a rich and diverse studio experience.