

BEYOND CONCEPTS - A STUDIO PEDAGOGY FOR PREPARING TOMORROW'S DESIGNERS

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Abstract

In an increasingly complex world, university education should balance teaching students the skills and intricacies of their field while enabling them to discover their authenticity and place in the world. The questions are: "How can design education respond to this challenge?" and "Where in the curriculum?" This paper supports that the conceptual design phase can be the forum in which students explore who they are and what they aspire to be. Developed and communicated with both written and visual elaborations, concepts can spark a dialogue around the opportunities that arise when conceptual design enables students to make a difference.

Keywords:

Conceptual design; creativity; design education; socio-cultural design; pedagogy.

Introduction

University education should balance teaching students the skills and intricacies of their field while enabling them to discover their authenticity and place in the world. It is in this balancing act that a university professor can make a difference. In the design disciplines, students are trained to be the professionals of tomorrow, who will venture into fields struggling with responding to the often conflicting needs of users, clients, and the public; policies that don't work; and government agencies overburdened by limited funding. Being able to critically evaluate a situation; using inquiry and research to find solutions and direction; persuasively describing their ideas to others; knowing the limits in what can be done; and having the confidence to take a stand, tomorrow's designers can be better prepared to tackle these issues effectively (Nicol, D., & Pilling, S., 2000).

Much of their success is dependent on an education that enables them to discover who they are and what they believe in. This generation of students is growing up and is

expected to function in a complex world that faces unprecedented security, environmental, and social justice concerns. Since 9/11, principles typically taken for granted like safety, permanence, and stability came tumbling down. Moreover, American youth are now presented with seemingly conflicting choices: on the one hand, they live in a consumer society where money, power, and status count while on the other hand, they are witnesses to the transformation of people like Bill Gates (one of the world's wealthiest men), Bono (a musician), and Al Gore (a politician) into champions for social and environmental justice. Defining who they are, what it is they care about, and what difference they can make is now more difficult for a student than ever before.

Operating within this framework, if design education is to continue to be relevant to current public and political debates, it must actively re-adjust its focus to give students opportunities to learn more about both their discipline and themselves. The questions are: "How can design education respond to this challenge?" and "Where in the curriculum?" With answers to these questions and guidance into these uncharted waters, educators can help students make sense of their work as well as define their space in the world.

This paper supports that concept development can be the forum in which students explore both who they are and what they aspire to be. Design educators can in turn be the mediators in students' quest for understanding of the world around them and the role that, as designers, they can play in it. Such a teaching of concept development constitutes learning that is transformational, in that it implies a

change in consciousness that will have lasting effects on the students' self-definition (Clark, 1993). I therefore labeled this pedagogy transformative concept development. Refined over seven years of design studio teaching at the University of Minnesota, the proposed pedagogical method expands the currently limited literature and approaches to concept development and sets the stage for a dialogue around conceptual design.

The discussion begins with reference to concept development as addressed in the design literature and continues with outlining what transformative concepts entail and the actual pedagogical process followed during studio teaching. Three examples serve as illustrations of the potential behind transformative concepts and their presentation precedes the closing comments, which highlight the challenges and opportunities tied to this methodology and call for future research.

Concept Development – A Brief Background

According to the dictionary, a concept is "something conceived in the mind" and/or "an abstract or generic idea generalized from particular instances." A synonym to the word concept is the word idea (www.w-m.com). In the design fields, concepts are also defined as ideas that have both abstract and physical qualities (Hyde, 1989). Typically the backbone of projects for their entire development, concepts are implemented through various architectural elements such as size, shape, form, structure, lighting levels, color, material choices, etc (Aspelund, 2006).

Being one of the most creative parts of the design process, conceptual design is also one of the most difficult to navigate. Questions like: "How can we go about developing concepts?" and "How do we elaborate and convey them?" still confuse educators, students, and practitioners. Historically, concepts have been linked to a search for inspiration (Aspelund, 2006), with designers searching and finding inspiration in areas such as nature (Victor Horta), geometry (Charles Rennie Mackintosh), history (John Adams), the site (Frank Lloyd Wright), the project's use/mission (Norman Foster), etc. In the latter part of the 20th century, art and theory have also guided the design ideas of architects like Steven Hall and Peter Eisenman.

Although designers have long used conceptual design as a purposive act that exposes their beliefs through a social commentary, like Frank Gehry's attempt to promote recycling through his cardboard chairs and Philippe Starck's gun lamps that speak of war and peace, little has been written about conceptual design from this perspective. Two opposing viewpoints prevail around the idea of designing for what one stands for. On the one hand, students and practitioners are discouraged from using design to "externalize internal feelings" (Tate & Smith, 1986). On the other hand though, in *Concepts: The architecture of hope*, Sanford Kwinter (2003/2004:4) supports that "concepts were then, and remain today, the primary walking sticks with which we navigate new space and reshape ourselves." It is from this premise that this paper hopes to build on—the idea of concepts as vehicles through which students can reshape themselves, transforming themselves in the process.

Complicating the matter further is the variability in opinions on what constitutes a concept; how it can be generated; and the extent to which a design should be based on the concept (Moore, 1995; Lum, 2003/2004; Aspelund, 2006). For instance, designs that emulate conceptual art and focus on form making bring to the foreground concerns such as the disregard of crucial architectural properties like complying with construction techniques and meeting the social and cultural needs of clients/users (Fernando, 2006). Concept development is thereby subject to disciplinary definition and an area where the design fields are differentiated from the arts, where artists are free to make a statement about issues and can actively participate in current debates.

Amidst all this questioning, it becomes difficult for faculty to find and adopt pedagogies on how to teach concept and to coordinate with other faculty so as to teach concept in a coherent manner. With few resources to draw from about the teaching of conceptual design, they are left without much direction on how to teach concept or how to inspire students. Tackling this difficult stage of the design process alone implies pedagogical efforts that are mostly individualized and uncoordinated with each faculty typically teaching concept in their own way. Similarly, curricula are rarely developed from the standpoint of conceptual development and the differences between how to teach concept to lower level versus upper level students for example, have yet to be thoroughly explored (Hyde, 1989). Part of the difficulty is that communicating, describing, and analyzing a creative process such as concept development can be cumbersome and hard to define.

Expanding those pedagogies that cater to conceptual exploration becomes even more adamant at a time when the student body is so diverse, including students of varying abilities, backgrounds, and learning styles. Often one of the hardest hurdles to overcome, concepts are areas where students are more tempted to plagiarize and 'borrow' ideas from other artists or designers to base their work on. The uncontrolled access to information, through sources like the internet, and time pressures, accentuate the problem. Too much information and too little time to reflect on what is important, puts at stake students' ability to clearly define their own positions and takes on the issues they encounter.

Further constraints relate to the increased complexity of the built environment. The parameters that have to be taken into account in both practice and education are often overwhelming, ranging from site requirements to programmatic needs, structural considerations, and code regulations. As a result, design schools cannot devote much time to concept development while in practice projects are often carried out with teams of designers or consultants, enhancing the likelihood that the concept and its translation can fall through the cracks.

Exacerbating the difficulties involved in teaching concept development is a mistrust in concepts that is tied to the notion that often concepts are simple extensions of a designers' ego or so theoretical that they have little relevance to the project or the issues they are about. In *Design Juries on Trial*, Kathryn Anthony laments on how detrimental it can be during a design jury when a student justifies his/her design with the response

"That's the way I like it." Anthony proposes that students use research, like the study of precedents as well as environment-behavior studies, to base their solutions, particularly on the programmatic level. Noting the importance of both generating and communicating one's ideas, she calls for presentation styles that clearly reflect what one is aiming to do in verbal, written, and visual manners. As we will see later, this paper's proposed methodology accounts for Anthony's concerns and recommendations.

Overall, there is an overarching agreement among design educators that conceptual design can push designs further as well as help establish a discipline as a creative and artistic one (Moore, 1995). Adding to these dialogues the opportunities afforded during this stage of the design process for students to explore who they are, what they want to become, and the type of world they want to live in can only strengthen the outcomes and better prepare future designers for fulfilling lives and professional careers. Drawing from other educators whose efforts have focused on uncovering and positioning design pedagogy as a process, where both the end product and the process itself are valuable teaching components (Salama, 2005), the following analysis delves into defining a process by which concept development can be taken to the next level, a transformative level.

Reframing Conceptual Design

Transformative concept development is a pedagogical method that I have been refining for over seven years—while teaching in the Department of Architecture and now the Interior Design program of the University

of Minnesota. This pedagogy differs from prior approaches based on two standings: First, that the concept is non-architectural. Instead, transformative concepts tell a story that relates to something beyond the built environment and speak to concerns relevant to today's world, making for example a social commentary. And second, in between the concept and its architectural translation comes a visual, a visual that synthesizes the conceptual idea into a non-architectural form. Following is an elaboration on these differences and the pedagogy's propositions.

This approach perceives the concept as an idea derived after a thorough research of issues surrounding the project on hand. As an idea, the concept is larger than the actual design manifestation for that particular project. That is, it can be used to guide any form of artistic inquiry, such as by a painter, a filmmaker, or a sculptor to make a statement that speaks to the same idea through his/her artistic venue. The concept is therefore the outcome of a complete understanding and the means by which a designer takes a stand and gives his/her interpretation of the project's role in society.

Given the complexity of present-day buildings and the societies in which they belong, strong concepts must also be complex. The more complex a concept is, the greater the potential for the student to experience a transformative experience and for an exciting, creative, and holistic design solution that expands into directions that would otherwise remain unexplored. Strong and complex concepts have two primary characteristics: 1) they account for variability, that is, they are inclusive of variable answers, responses, and viewpoints,

and 2) they are dynamic, that is, they refer to change and evolution instead of being static. Concept evaluation is largely dependent on the successful embodiment of these two characteristics.

Three descriptors are used to develop and communicate complex concepts: a title, a statement, and a visual. With multiple ways to tell the story behind the concept, it becomes easier to convey the idea to others and to illustrate its relevance to the project and the proposed solution.

a) The title: The title captures the essence of the concept in a few words, preferably fewer than three words. This helps narrow the students' explorations and eases the task of conveying the idea to others. Verbs that call for 'action' are best, as they can dictate a possible to the underlying concerns raised in the concept, although other descriptors, like adjectives and nouns have also proven to be effective.

b) A statement: The concept statement elaborates on the idea behind the concept, building on what the title alluded to. In a brief paragraph, the concept statement becomes a written testimonial of what the concept is about and what the student stands for.

c) A visual: The visual can be a sketch, a diagram, a model, or any other visual manifestation a student chooses—it can also be a series of many visuals, a clear way to show process or change. The visual helps students organize and synthesize their thoughts and research findings in something with fewer prerequisites than a building—the sketch for example, does not have to meet codes or programmatic guidelines. The visual thereby acts as a stepping stone between

the concept and the architectural translation that follows (see figure 1).

Having translated their concept in a visual reveals to students the many possibilities embedded in the concept, inspiring them to fully explore their creative potential in the building scheme, where the number of parameters that must be met can be overwhelming. Illustrating the conceptual idea in a visual form is also very practical in a visual field like design and with access to a visual representation both students and others can better understand what the concept is about.

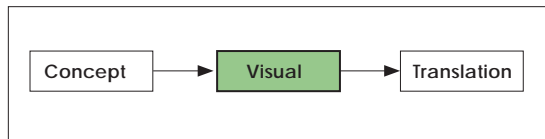


Figure 1: Visual's Role in the Design Process (Source:Author).

Process and Teaching Techniques

A typical semester has two phases: The Pre-Design phase involves the research that will generate the knowledge needed for the development of the concept as well as the project's programmatic guidelines while the Design Phase encompasses schematic design all the way to construction documents. Concept development marks the beginning of the schematic phase and takes about two to three weeks. Below is a more detailed reference to those steps in the process and the teaching techniques used that relate to concept development and conceptual design.

Pre-Design Phase

Instrumental to the success of this pedagogy

is the grounding of concept development in thorough research that expands "the boundaries of knowledge beyond the basic solution of local problems" (Roberts, 2007:17)—transformative concepts cannot simply be an extension of a student's ego. Therefore, studios begin with the first three to four weeks being devoted to researching the social, cultural, religious, political, environmental, technological, and economic parameters that impact the project's potential to support the needs of the community it belongs. Readings in academic journals, books, and lay articles build students' knowledge and guide their quest for a conceptual idea that brings to the foreground the story behind these complex issues and the many forms this story can take. Comprehending and defining the various angles from which a problem can be approached to be solved, students are challenged to see the bigger picture and to consider the broader impact of their work on the world at large. With a grasp of the research findings, students can then concentrate on how to eloquently describe them.

Design Phase

The Design Phase involves several steps. It should be noted that some students move through the process in a linear manner, taking each step in the order presented here. There are students though, who must retrace the steps and move through the process in a circular manner. In such instances, students in the class might be at different stages of the process—some can be at the translation stage while others are still defining their concepts. Flexibility on the part of the instructor is key to the success of this methodology.

Concept Charette: With the research findings on hand, students zoom in on determining what

they care about and what their design should say. Decoding the findings down to this level is probably the most difficult and overwhelming step in the process as the research brings to light a multitude of issues that are all worthwhile. As a way to overcome this hurdle and speed up the process, we hold a 'concept charette' day. Because of the level of difficulty in synthesizing the research findings and generating a conceptual idea, this part of the process is best attempted in pairs. With a classmate to bounce off ideas to, students' awareness and level of understanding sharpens, enabling them to delve deeper into the issues as they progress. On charette day then, students form teams and brainstorm answers to questions that relate to the project they are dealing with. In the culturally sensitive housing example described later, these questions included: "What does it mean to be Ojibwe?" and "What does it mean to be a member of a marginalized group?" More general questions, like "What about the research findings did you find intriguing and was touched by?" can also help students' brainstorming. Together with their partner, students select words and sketch drawings that capture the feelings and ideas they wish to bring to the foreground. At the end of the class session, we share these preliminary concepts with each other and discuss their effectiveness in conveying what the students intended as well as whether they are variable and dynamic. Before we leave for the day, I present previous examples of strong and complex concepts as well as their translations.

Desk Crits: For the following couple of class sessions, in weeks five and six, I engage in desk crits of concept proposals. My objective is to give feedback on all three descriptors: the title,

the statement, and the visual. The challenge here is helping narrow the students' quest to one idea while ensuring that the particular idea is developed broadly and deeply enough to account for variability and be dynamic. With typical 3-hour studios having anywhere from 16 to 20 students, pairing students to work on the concept provides the additional advantage of enough critique time to delve deeper into exploring diverse concept proposals and their manifestations.

Class Sharing: Then, at the end of week six, students are asked to come to class with as many alternatives as they wish, each presented with a concept title, statement, and visual all on one page. They post their proposals on a wall and are asked to review everyone else's work and give each other feedback—along with the students, I also provide written feedback. This way, students receive feedback from a variety of sources, which has been linked to gains in critical and independent thinking (Bose, Pennypacker, & Yahner, 2006). Each of us answers two questions for each concept we review: "What did you learn?" and "What would you have done differently and how?" I then distribute all the written feedback for students to consider in revising their concept proposals. Areas of criticism often revolve around issues such as whether the ideas behind the concept are understood, whether the words and the visual increase comprehension, and whether the concept can be strengthened by increasing its complexity. Class sharing is a very effective way to mobilize and inspire students—the energy levels in the class are high on this day and students take classmates' insights very seriously.

Concept Evaluation: After students had a

chance to respond to their classmates' and my written feedback, concept proposals are turned in for an evaluation. Criteria used include: Is the concept complex? Does it account for variability and change? How creative is the proposed concept and its visual manifestation? Is the concept clearly communicated in all levels, written and visual?

Conceptual Translation: Upon finalizing their concepts, students move to the conceptual translation stage where they think abstractly about how to translate their concept architecturally. Although a detailed reference to this aspect of the process is beyond the scope of this paper, it should be noted that for a successful architectural translation, the space/design itself should speak of the concept. That is, the architectural translation should not only depend on activities carried in the space for the concept to come through. At the same time, the translation should not be done in separate/isolated elements – instead, a holistic approach must be taken, that is, all elements together speaking of the concept. The translation should be in both dimensions: 2-D (like plans and elevations) and 3-D (like sections, perspectives, axonometrics, models) and for as many parts of the design as possible, i.e. from the whole plan down to details, like ceiling and lighting design, and material choices, like colors and finishes. Conceptual translation should take a variety of forms and different parts of the design should be telling different aspects of the concept's story.

Conceptual Translation's Evaluation: Lastly and close to the end of the semester, the conceptual translation into a building is evaluated using criteria similar to those used for the concept's evaluation: How creative is the design solution?

Does creativity extend to all elements of the project, from 2-D to 3-D? Is each part addressed thoroughly and in enough depth to foster understanding? Does the overall presentation speak to the concept and the project's mission or is it generic? How well does the design balance creativity and meeting programmatic needs? This last criterion is crucial as the overall aim is to achieve designs where creativity and functionality work hand-in-hand. The overall quality of the proposal is also evaluated with respect to where the overall proposal stands in terms of expectations.

Three Examples

Transformative concept development can be applied in all types of projects, from residential environments to cultural institutions. Following are three examples from interior design studio classes that illustrate the possibilities.

Culturally Sensitive Housing

Culturally sensitive housing is housing that supports various ways of living. In my residential design studios, students use the literature as well as my research findings from in-home interviews with members of new immigrant and minority groups to propose environments that integrate that group's cultural needs with those of the mainstream (Hadjiyanni, 2006 & 2007).

On the conceptual level, students are asked to respond to questions like: 'What does it mean to be an Ojibwe?' and 'What does it mean to be a member of a marginalized culture?' They can also choose to base their concept on celebrating difference and the opportunities that are tied to cross-cultural encounters, through questions like: 'What about the Ojibwe

inspires you and you want your design to speak about?’

In this example from Fall 2006, Amanda Zanski and Allison Landers wanted to shed light on the possibilities that arise when two cultures learn from each other. Amanda grew up close to an Indian Reservation in Northern Wisconsin and attended a high school where half of the students were Native Americans. This experience sensitized her to the obstacles that must be overcome to bridge cultural differences. Allison on the other hand, came to the same realization after the class visited the Mille Lacs Reservation and after familiarizing herself with my research with Ojibwe families that revealed the struggles of many Ojibwe to reclaim their past and reestablish their cultural identity definition.

While at the Mille Lacs Indian Museum, both students, who have strong artistic backgrounds, were intrigued by videos featuring Indian dancing and drums playing as signs of cultural expression. They therefore, chose to use drums and music making as a way to express the idea of ‘difference’ and they relied on a heart as a universal symbol that conveys the willingness it takes for two cultures to learn to ‘listen to each other’s song’ and come closer together (Figure 2).

In their words:

“We chose to symbolize the mainstream American and the Ojibwe cultures with their typical drums. Conceptually speaking, these drums speak their individual beats that make their own cultural identities. Even though these identities are unique, they have one commonality between them: a beat. We have then translated this commonality into a human

heart beat where, we believe, it is by listening to the beat of another culture that we can learn. However, we understand the process of listening to another culture is harsh, chaotic, and sometimes lost altogether. Because of this, we like to speak not of understanding or unifying, but rather of recognizing. If people can start to hear just a few beats of another culture maybe they will be able to still retain their identity, but have a few new ‘songs’ to take with them.”



Figure 2: Speak, Listen, and Recognize. (Source: Author).

This process of speaking, listening, and recognizing was translated architecturally in their

design solution of a duplex. The two different cultures are represented with units made up with different materials and geometries whereas the gap between them takes the form of a glass void between the two units. The change that comes with recognizing is illustrated through the various levels of the home. Both the plan and exterior elevation show the first floor as the place where each culture is separate, playing its own distinct

song—warm versus cool materials, geometric versus organic forms, etc. Once moving into the 'heart,' the staircase connecting the two floors, materials and forms begin to relate to one another in a 'give and take' manner that results in a new, enriched, and unconventional composition (Figures 3, 4 & 5).

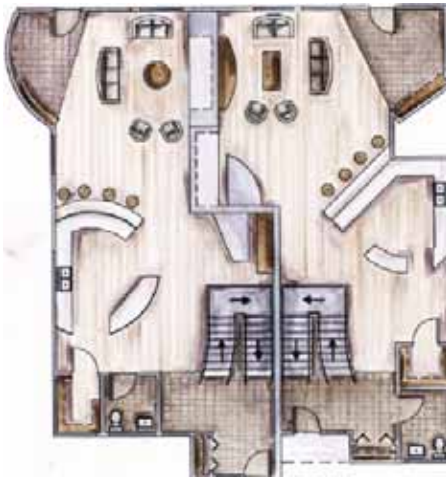


Figure 3: Cultural Uniqueness as Shown on the First Floor. (Source: Author).

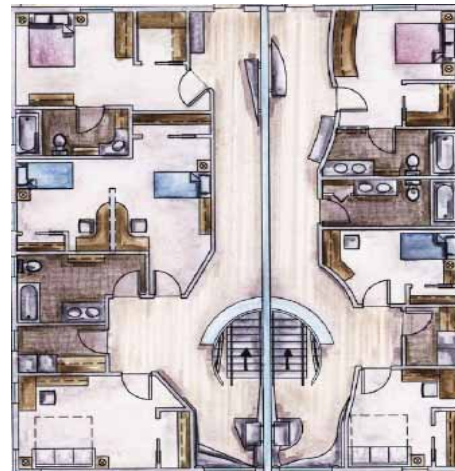


Figure 4: Cultural Interaction Enriches the Design of the Second Floor. (Source: Author).



Figure 5: The Front Elevation Shows the 'Give-and-Take' between Cultures. (Source: Author).

Universal Design

Third year students implement universal design criteria to the design of a residential kitchen. In the Fall 2005, the aftermath of hurricane Katrina was very recent. Disturbed by newscasts that spoke of people in wheelchairs not being evacuated due to lack of adequate transportation and inspired by stories of disabled people who strive for a life of normalcy, Sarah Morissette wanted to explore the relationship between 'ability' and 'disability.' Her concept "Empathy builds support" speaks of the connections and the gap between the two states of being:

"Any person can become disabled or be born disabled. Society tends to marginalize those with disabilities, yet a disabled person can perceive him/herself as functioning normally or wholly, contributing to society. One way to build more support for the disabled is for non-disabled people to empathize and understand disabilities better."

Her conceptual drawing represents a non-disabled person as 'fully' connected and a disabled person as 'disconnected' due to the lack of control of certain bodily functions. Both share the same platform which is held together with a bracing support. Arrows illustrate the interchangeable perceptions as well as the possibility that one's status can be altered at any time (Figure 6).

In the translation, on the programmatic level, students were required to design for 'all', that is for people of varying abilities and not necessarily for people with a disability or wheelchair users. Solutions include counters of varying heights, easy to reach and grasp handles on cabinets, and spaces to store heavy appliances. Conceptually, the kitchen's interior

highlights the variable support disabled people can gain from society—the large column that seemingly holds the ceiling speaks of policies and major institutions that cater to those with special needs whereas the small column under the island speaks to the small things that brighten life, like a smile or lending a helping hand. The 'disconnects' become various gaps, like the opening behind the sink, the stained-glass window designs on the back wall, the island, and the ceiling design. Some of these gaps can easily be bridged, like the opening that connects two rooms or the windows that blend the inside and the outside, while others are harder to mitigate (Figure 7).

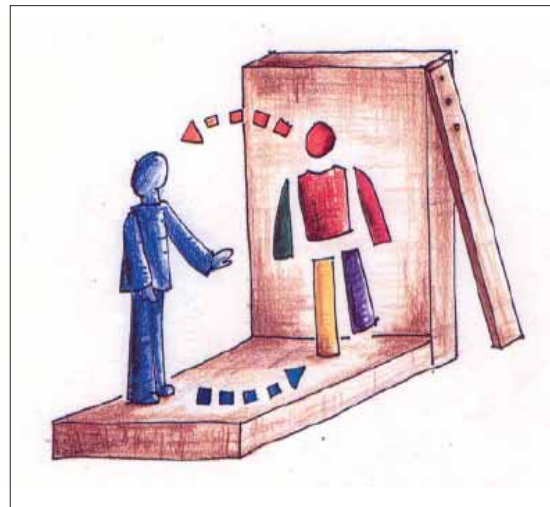


Figure 6: Empathy Builds Support. (Source: Author).



Figure 7: The Kitchen Design Highlights the Varying Levels of Support. (Source: Author).

Goldstein Museum of Design

In the Spring of 2006, fourth year interior design students at the University of Minnesota were asked to re-design an existing natural history museum into the new home of the Goldstein Museum of Design. Founded by the Goldstein sisters, the Goldstein museum is a University Museum that promotes the appreciation and interpretation of design within its social, cultural, aesthetic and

historic contexts through exhibitions, research, preservation, and education.

Emily Brown was touched by Goldstein's objective to celebrate the region's cultural diversity. As her research revealed the limited connections newcomers to the area felt, she recognized that "the challenge we face in designing a building that houses such a wealth

of diversity is simultaneously fostering a sense of identity, connection, and community for every visitor who walks through the door." With the goal that everyone feels included, she elaborated on why:

"We are a family, and like all families we are full of unique individuals, tied together by a common bond, the bond of humanity. We need to celebrate our differences while we cultivate our human connection. We must walk in community, offering continued support and connection as we each, in turn weave among the many others in our lives."

Emily chose to represent the similarities and differences among members of a community

with the thumbprint:

"The thumbprint is an intriguing entity – a mark that simultaneously unites us as human beings and distinguishes us as individuals. Culture can be viewed in much the same way. The Goldstein Museum fosters this tie, this human bond, by encouraging its visitors to stop passively observing other cultures, and begin actively connecting with them." (Figure 8)

Her translation juxtaposed the thumbprint's dynamic curves within a grid to allude to the connections among different individuals and community groups (Figure 9).



Figure 8: Connecting. (Source: Author).

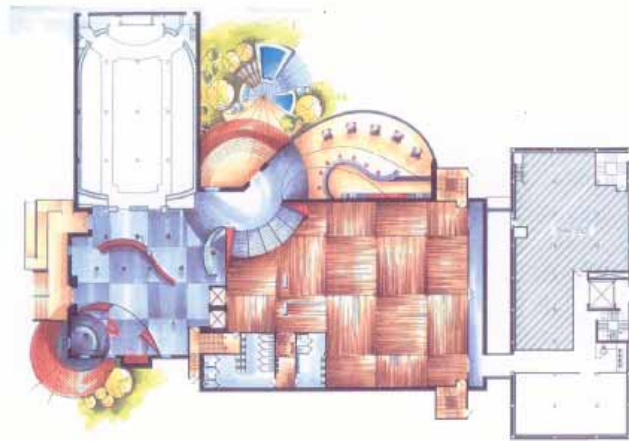


Figure 9: Intersecting and Juxtaposed Geometries Speak to the Opportunities Tied to Community Connections in the Museum's Lobby and Gallery. (Source: Author).

Closing Comments - Challenges and Opportunities

Transformative concept development conceives of concepts as identity mediums, as means through which students can learn both the intricacies of their field and more about themselves. There are many challenges in teaching this pedagogical method. Among these is the challenge of allowing enough time in the curriculum for transformative concepts to take effect, at least when students are first introduced to this methodology. Time needs to be allotted for research; synthesis of that research's findings; and reflection and digestion of the information. Once students become familiar with the process, I found that moving through the steps is much faster, almost like learning to ride a bike.

Another time-related challenge is the immense time commitment required by the instructor who in addition to teaching the course requirements now guides students' quest for understanding the world around them and taking a stand. As the process of self-discovery is rarely a linear one, students can be all over the place when struggling to define what they want to talk about, what is it that interests them, or what is it they believe in and want to focus their design on. Because of that, the instructor must be able and willing to connect with the student on a level beyond that of teaching the material, to that of a mentor, and help channel the students' ideas into a creative concept proposal. Timing then can be an issue especially as adequate time for desk crits might be hard to come by in 3-hr class sessions with 20 students.

Faculty must also be cautious of the fact that in addition to being a long and lengthy process, transformative concepts can sometimes be

painful as well. Like in any self-reflection, there is always the possibility that issues might come up that are a painful aspect of a student's past or present. For example, in designing for people with special needs, it was not uncommon for students to share personal experiences such as struggling with depression, anxiety, and eating disorders. Is handling such circumstances too much to ask of faculty? What role can/should educators play in this process? And, is it ethical for someone without special training to handle such instances? Although the studio environment can be a healing place for these students, it is best for instructors to direct students to the appropriate university channels if they feel it is necessary.

Lastly, another challenge is pushing the concepts all the way into the translation. After devoting so much energy and effort in developing strong and complex concepts, expectations for a strong conceptual translation rise. When architectural translations become too literal and the proposed building looks just like the concept's visual, problems can appear like: poor space planning, dysfunctional rooms, disregard for programmatic requirements, and inadequate care for codes and clearances. Similarly, when the concept is not fully taken into account for the architectural translation, the proposed solution can lack creativity and originality. Faculty must balance pushing the concept's translation without losing the project's architectural integrity and concern for human needs.

Aside from the challenges though, after teaching transformative concept development for seven years, I am fully committed to the opportunities that it presents. Witnessing students take a stand for what they believe in as well as finding direction in pushing their designs

to the next level are benefits that outweigh the challenges. There is an excitement and a level of engagement in the air during this time of the design process that is hard to describe. Apart from helping students develop as individuals and as designers, this pedagogy pushes students' critical thinking skills; gives them the confidence they need to take a stand; and sharpens their communication skills, be those verbal, written, and visual—it always amazes me to see the number of dictionaries that show up in studio during the search for words for the title and the writing of conceptual statements.

My next step would be to explore how early in the curriculum this teaching pedagogy can be taught—having only applied this technique in upper level studios (3rd and 4th year), I am not certain of how it would work for lower level students. One possibility is to build-up on the level of complexity as a student moves through a program. This implies a curriculum that accounts for transformative concept development. The question that surfaces then is whether transformative concept development can be taught in one course or whether a cumulative effect is more powerful. Developing a curriculum around this educational aspect would require coordinated efforts among design faculty that concentrate on how concept is taught throughout a students' education. Time then should be allotted by administrators to develop curricula that teach concept coherently and in a synchronized manner.

As conceptual design is a severely under-researched area, I would like to close by calling on design educators to devote more efforts into understanding this exciting aspect of the design process. Can the same pedagogies

work as effectively for male as well as female students? What about students from diverse cultural backgrounds? How can differing learning styles be accommodated? And the list goes on and on.....One thing is certain though: that conceptual design is about ideas. Transformative concept development makes a social commentary of those ideas, opening up avenues and presenting opportunities for students to make sense of their work as well as help define their space in the world.

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Hmong, Somali, Mexicans, African-Americans, and American-Indians. Integrating her research into her teaching and outreach agendas, she exposes students to cultural aspects of space, developing new pedagogies by which to teach culture to students of design as well as create culturally sensitive housing proposals that instigate change at the policy level. Because of their interdisciplinary nature, her research and teaching have been presented at conferences like the Environmental Design Research Association, Interior Design Educator's Council, and the American Anthropological Association and published in a variety of journals. She can be reached by email at thadjiya@umn.edu

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