Sixth Annual

National UCDA Design Education Summit

Designing

Examining how we do what we do.

Conference Proceedings
Papers, Panel Discussion and Posters

Hosted by the University of Kansas
June 2-4, 2010

A Program of the University & College Designers Association

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2010 Program Chairs
Andrea Herstowski Wertzberger, University of Kansas
Jeremy Shellhorn, University of Kansas

University & College Designers Association
The University & College Designers Association supports and recognizes all you do to create every day. We know what working in education is about. Our members are designers, design educators, art directors, creative directors, managers, directors of print shops, editors, writers, directors of media services, photographers, and businesses associated with visual communication.

UCDA provides a forum for new ideas, new perspectives on the design industry, and professional development opportunities, and access to a large network of generous professionals.

Design Education
UCDA surveyed design educators from North America on their unique professional development needs.

Top issues identified:
- Creating the climate of opinion in which high standards of design may flourish.
- Improving standards and awareness of graphic design as a profession.
- Communicating on a regular basis with other design educators.

UCDA was advised by design educators:
- to actively include educators in programming by understanding that design educators must create NEW knowledge, along with participation in the professional's world.
- that an alternative is needed to fill the void left by ACD and GDEA.
- that UCDA should begin more of a dialogue with educators.

The UCDA Design Education Summit continues what we hope will be an ongoing community created specifically for graphic design educators with many opportunities for your own professional participation and development.

inspiring
design

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Design Pedagogy:
An International Approach

Paper

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"And what should they know of England who only England know?"

Rudyard Kipling
The English Flag

Abstract

Design education is at a crucial crossroads. Caught between growing out of an early 20th century service industry model and a world that has embraced technologies that drastically change how we relate to and with each other, many design education programs are at a defining moment. Additionally as design moves further into academia many institutes are faced with the challenge of growing (or establishing) and qualifying research and research degree programs in design.

Educators are left with the challenge of further developing programs that educate designers who: are as skilled at asking questions as designing artefacts; will place design within a larger holistic context; are able to critically assess their practices and environs; and, importantly, are able to see and articulate the larger role that design needs to play in the 21st century. In short how can we develop programs that enable design students to pursue what the design educator Tony Fry terms the "qualitative over the quantitative".

This paper proposes that one means of addressing these issues–and re-examining our pedagogic practices–is through the frame of the anthropological and the lens of the international. The paper documents a variety of projects that use the international as a means of production, presentation and of collaboration. Examples include more complex projects–a design travel course that examines spaces and places of different locations to a smaller project that paired students up with international collaborators on a short intense brief.

Finally I examine the benefits, and challenges, of using the International and the anthropological as a reexamining focus for our current pedagogic practice, proposing some key concepts, practices and possibilities required of today's design programs to ensure that we are educating the designers that we need tomorrow.

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Introduction

In *Teaching as a Subversive Activity*, Postman and Weingartner argue for an education system that cultivates what they term the "most 'subversive' intellectual instrument–the anthropological perspective". They regard this as education's true aim, to equip students with the ability to be part of their "own culture and, at the same time, to be out of it." This instrument enables students the opportunity to view their own activities "as would an anthropologist", facilitating the ability to step out of their own group (whether large or small, formal or casual, explicit or implied) and assess critically the group's objectives and activities free from imposed and learned ideologies and beliefs. (Postman and Weingartner 1969)

As designers we are often seen as interdisciplinary practitioners with our own areas of expertise and practice but also with the ability and need to understand other professions, communities and audiences. I propose that we have become anthropological in regards to our professional design and educational practice. We teach our design students how to question clients, how to understand a target audience(s) and how to use this information to inform their responses.

What is broadly lacking though is our ability to educate design practitioners to view their own practice, surroundings, culture –their groups–anthropologically. There is a need to further develop the skills and experience so that design students are able to step out of their own culture and see both the strengths and the weaknesses that are evidenced, and then to have these observations inform their design practice. (Dunne & Raby, 2001)

This paper proposes that one means of facilitating this internal anthropological insight is through using the lens of the international. By forcing students to look outside of their own cultural understanding and experiences we create learning environments and instill skills that allow them to be critical and to design from an anthropological point of view. As Kelley notes in *The Ten Faces of Innovation*, assuming the methods of the Anthropologist allows designers the ability to put aside their "experience and preconceived notions" and enables opportunities for innovation and design. (Kelley & Littman 2005)

Once these processes are established we can move the focus from the external to the internal and apply this same criticality to the student's own groups. In short by examining, analyzing and designing for the other we can grow to better understand our own environs.

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To explore and build a case for the use of the international to support an anthropological design focus I begin by identifying key educational concepts from my own international experience–as a student, designer and lecturer. The paper then takes the lessons from these observations and applies them to my current educational practice presenting a variety of projects that use the international as a means of integrating anthropological practices in design education.

These projects take a variety of form–identity systems that focus on external international clients to a course that takes design students to other countries to work with local designers and design students.

Finally the text examines the benefits, and challenges, of using the international as a focus to reexamine our current pedagogic practice, proposing some key concepts and practices useful for consideration by design programmes.

Personal Design Education Context

In this paper I will present a variety of experiences in relation to international education. These experiences are the result of my own design education history: going to design school (undergraduate in Canada and graduate degrees in England); working as a designer (on a variety of projects all over the world); and working as a design educator (primarily in Canada and England with visits, collaborations and presentations in many countries). These experiences and this paper are then concerned with my current situation–working as a designer and design educator in a large research-intensive university in Canada.

This paper should be viewed in light of these specific experiences, I am positive that many programmes already incorporate many of these ideas (explicitly or tacitly) into their practices, and it is hoped that the collection of experiences and insights contained in this paper help to raise some of these issues to the fore and provide opportunity for debate, discussion and dissemination.

The first section deals with my experiences working within the international.

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International Design Experiences

Moving to England from Canada to study, live and work was both a comfortable and a drastic change. On the comfortable side both countries (broadly) shared a language, and similar social, economic and political structures. On the drastic side I moved from a place looking forward to celebrating 150 years as a country to one that dates its history in millenniums rather than in centuries. Another major difference concerned the size and location of the two countries. Well-developed transportation systems and geographic location enabled travel–both in and out of the country–that was at a level unconceivable to my North American self.

These conditions have helped to create a country, England, with London in particular that is truly international with a global mix of staff, students, and opportunities.

A defining attribute of my time teaching in England concerned the externalization of design pedagogy, embracing opportunities of the international to move beyond England's borders. This externalization was found throughout the design education system, from briefs that explored and investigated other cultures, to collaborative projects where students would work with design students in other countries to international trips that placed students in other cultures.

By far the most effective of these methods was taking students from England to another country and teaching there– this placed students in foreign situations and challenged many of their beliefs. When choosing countries to visit locations were selected that were markedly different from England ensuring students would need to navigate issues of language, communication and culture. As Kelley notes good anthropologists–and designers working like anthropologists– "look beyond the obvious, and seek inspiration in unusual places". Moving educational practice to foreign locales forces students to encounter the unknown and deal with the new. (Kelley & Littman 2005)

In addition to choosing countries that met our requirements we also made certain that these trips were valid educational experiences that challenged students' preconceptions. We devised briefs that required interactions with locals–sometimes pairing students up and sending them on design scavenger hunts in different areas of the city. Or we would partner up with a local designer and focus on a brief that dealt with issues specific to that locale.

Typically these trips would be for a week and allow opportunities for structured educational interactions (as noted above) in addition to unplanned occurrences–having a drink, eating dinner, shopping–that furthered students' understanding of these cultures. Once back in England we would explore, contrast and compare the differences and similarities between where we had visited and England.

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These externalization opportunities enabled an embracing of culture and more importantly a chance for students to remove themselves into a new space and place where they were distanced–mentally, culturally and physically–from their culture. In short this allowed the conditions of the anthropologic to be facilitated. Importantly students gained an ability to examine their own cultures from a new perspective, one that afforded opportunities of critical judgment. As noted previously this ability–to examine one's own culture–is a crucial skill needed for designers.

After working in Europe and Asia for seven years I returned to North America to work in a design programme in a large research-intensive university. I began to explore how I could take the lessons learned from my international experience and weave it into my pedagogic practice in Canada.

Integrating The International

In this section I will present a variety of projects that use the international as a means of production, presentation and collaboration. The projects presented make use of the themes of externalizing and internalizing the international to enable an anthropological approach in design education. These projects took place over the last two years in the Visual Communication Design programme at the University of Alberta in Edmonton, Canada.

While programs that I worked with and for in Europe and Asia made extensive use of the international as a means of promoting cultural interrogation, in North America the idea of the international was less present–at least in an active pedagogical form. As in abroad students still focused on the international as part of their studies–particularly in design history classes, and the student population itself was internationally diverse but otherwise the international was not particularly present in the programme.

Using the approaches identified above I began to explore means of integrating the international into the programme. The first project documented employed bringing the international into the design programme.

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Internalizing The International

In Fall 2009 our design students began undertaking a project with a social change group in Uganda called Breakdance Project Uganda (BPU). BPU uses breakdance as a means of promoting positive social change with youth in Uganda, a country rich in history and tradition but poor in resources and established support systems. As the BPU grew from a small core of people to a larger and more successful organization with increasing coverage of their activities they realized that they needed a more coherent and effective identity.
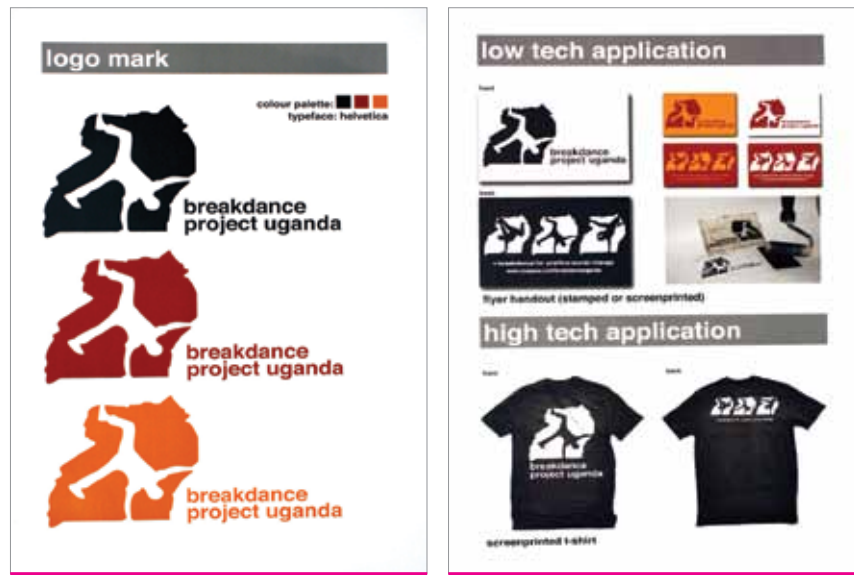
BPU Example Identities
University of Alberta BDes Students

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BPU Example Identities
University of Alberta BDes Students
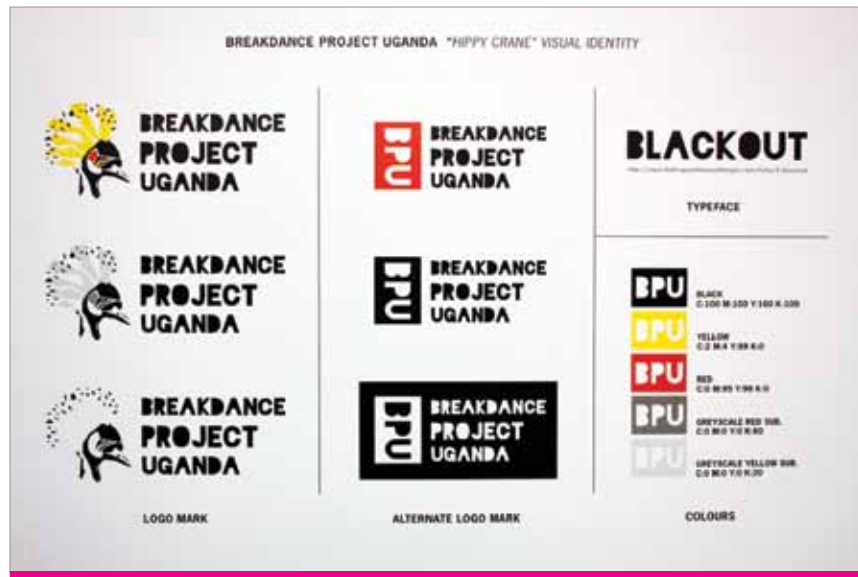
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Working with the BPU was our third year design students, broken into two classes there were 30 students working on the project. As with any design project, the students needed to undertake initial research to try and understand the client, the audience and the work needed. Initially these students had very little knowledge of Uganda and only a slightly somewhat better grasp of breakdancing as a cultural force.

While at its heart a standard design project–the creation of an identity system for a cultural group, the addition of the international component provided specific benefits, these included:

- Undertake research, both primary and secondary, for cultural groups that are removed (physically, culturally, socially and economically) from the students themselves. Students had very little specific knowledge of Uganda, and what knowledge they had was at best stereotypical. They had to explore new means of trying to understand the needs of the groups involved with this project. This involved students devising innovative and different methods of research–students visited local Ugandan community groups, emailed members of the BPU, listened to Ugandan folk music–to try and understand both the client and the audience involved in the project.
  "The BPU brief forced me to really research and dig as deep as I can." VCD Student

- As the client was geographically separated from us the students needed to devise new means of communicating with our client. Students explored email and conference calling as possibilities (with limited success due to the expense of internet connections and time difference); finally a blog was set up as a means of collecting, storing and communicating the work undertaken. This was especially effective as the blog served a variety of functions– from displaying all the students' work to collecting feedback from the client and instructors to providing a visual repository of all the work that was accessible to all the parties involved.

- Expanded views about the possibilities afforded by design. Design is often presented as merely the facilitator of capitalist activity, focused on quantity over quality (Fry 2008). This project allowed students the opportunity to truly see the role that design can play in facilitating social change. In short design was a contributor to the better- ment of the human condition. **"The BPU project definitely offered a new perspective and also changed my ideas about what design could be." VCD Student**

- This project and the methods employed by students throughout ensured that they gained genuine knowledge of other cultures and communities. **"One benefit was that we were forced to really investigate a different culture that most of us did not know much about." VCD Student**

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Through all steps of this project students needed to compare and contrast their research into Ugandan culture with their North American lifestyle and community. Explicitly and tacitly students began to ask critical questions of their own groups and culture, and perhaps most importantly the role that design can play in facilitating these questions.

"Benefits of BPU–pulling us out of our comfort zone–forcing us to really think about what we were doing and why. Realisation of the global use of design." VCD Student

In addition to integrating international perspectives into the progamme through internalization we have also pushed the programme out internationally.

Externalizing The International

In 2009 we planned our first international credit course – *Photo/Type Explorations: The Spaces of Paris and London*. In this course we were interested in exploring how location would affect students' learning and how an international component could facilitate a better grasp of other cultures, leading to a better understanding of one's own culture.

Offered in Spring Session this course ran for six weeks, the first two weeks were in Edmonton, week three in Paris, week four in London and the final two weeks back in Edmonton. As this was a Spring Session course we had a mix of students registered: students came from all four years of the Bachelor of Design programme in addition to students from Bachelor of Arts and the Bachelor of Education programmes.

Projects in the course focused on investigating space and place, how we document our experiences in locations and exploring the changing role of design afforded in different cultures. Students were introduced to photographic practices in addition to workshops on typography, documentation, narrative building and bookbinding. Readings and lectures also looked at key practices and theories concerned with location and culture–from Baudelaire's flâneur to Situationist's practice. Final outputs from students were diverse and included movies, books, installations, portfolios of photography and interactive objects that recorded and played location sounds.

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*International Visits by
University of Alberta Design Students*

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The varied mix of students on the course, the length of time away and the opportunity to contrast three cities and the credit requirement of the course created a unique learning experience. Specific benefits included:

- The focus on space and place as an overall theme for the course enabled students the opportunity to actively compare and contrast the spaces that they were in – rather than being just locations where things were produced students had to consciously interrogate the role that space plays in the production of design. They had to document and then present how each of the three locations was an inspiration for and location to receive design. Additionally in each location we undertook briefs that forced the students to observe and interact in the spaces – from dérives to disposable camera treasure hunts, and this switch from the passive tourist to the intentional flâneur allowed the students to become active agents in these locations.

- Increased camaraderie and bonding amongst the students, this is especially useful as the cohorts for these trips come from all years of the design programme, helping to create new frameworks for students working and learning from each other. "More! More! More!" VCD Student

- In addition to teaching in these international locations we also organized visits to design studios and design schools – often undertaking short briefs with these students or getting a local designer to lead a one-day brief. Visits to the studios allow students to meet a variety of different types of designers and create models for how they could proceed from school to industry. Tours of different design schools allow students to compare our design programme against other programmes. "The studio visits were great and living in another culture – even if for a short period – allowed me to understand global and local design better." VCD Student

- Outside of formal scheduled teaching time students got to experience these locations on their own time. Eating, shopping, visiting museums and just walking in some of the most important design cities in the world are experiences that are impossible to recreate in any other form.

"This course really allowed me to imagine myself in design, meeting other graduates and learning how they worked in design has given me confidence." VCD Student

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Benefits And Challenges

With each of the projects documented above I have listed specific benefits in relation to how using the international can serve as a means of facilitating an anthropological approach in design education.

In addition to each project's specific benefits there are larger more holistic ones that occur at programme, department and institute level. As well as the benefits of being introduced to new cultures, staff also benefit from discovering other design pedagogy practices. Just as it is insightful for students to be able to step out of their culture and to critically look at their own groups, it is just as valuable, and vital, for design educators to critically question their own teaching practice, to ask why they teach they way they do. Exposure to other systems, practices and programmes present key opportunities to reflect and learn for design educators.

An obvious other benefit that accompanies these international activities is exposure and promotional opportunities. Programmes, departments and institutes gain international exposure at a variety of levels and opportunities for further collaboration and partnerships are possible.

In addition to the listed project's particular benefits there are detriments. And while each project presents their own set of circumstances and challenges by far the overriding issue has to do with resources–both material and personal. Each of the projects discussed required significant amounts of time to plan and deliver in addition to the challenge of also securing funding for projects.

Overall though the benefits of integrating this international practice into design pedagogy far outweigh the detriments.

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Conclusion

There is a need for design education to move from being concerned solely with forms and outputs, to go beyond styling and finishing and to shift focus from quantity to quality. (Fry 2008) I propose one means of enabling this critical shift in design is through using the lens of the international to enable an anthropologic approach.

In this paper I have argued for the value of employing the anthropological as a tool for design education and using the international as a means of facilitating this anthropological method. By examining and documenting exemplar practices from key international partners I then use them as models and applied to a North American design institute; two projects are presented and discussed–from a straight forward identity project for an international organization to a design course set in three countries. Each of the projects uses the international as a means of investigating and interrogating what design can be, broadening design from purely a problem-solving exercise to one also of problem identification (Kelley & Littman 2005).

This interweaving of the international into design pedagogy helps to create richer and more effective educational environments for students, enabling them to step outside of their own culture, critically assess it, and design for it. In short we are ensuring that as Brown notes learning becomes intertwined with "judgment and exploration" (1999) and that we are educating designers that are both thoughtful contributors to society and able to articulate the larger and vital role that design needs to play in this century.

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The Visual Synthesis of Design Education: Revaluating Project Proposals

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Abstract
In the past decade, academic conferences have continually addressed the critical climate of educational design programs. With the ubiquity of the personal computer, the increasing presence of the self-taught graphic designer has challenged the credibility and advanced training of the degree-seeking student.

What traits and qualifications differentiate the BFA graduate from the unschooled designer? Is it the college degree that constitutes advanced talent? Who establishes the criteria for competence, acquired knowledge and creativity? Is it the professor? Is it the letter grade? What are the means, the visual gauge, that measures conceptual development, critical thinking, theory and application?

It is safe to say that the majority of educators would agree there are commonalities between the schooled and unschooled designer, such as the knowledge of software applications. However, many would also argue there are definite differences between the two types of designers.

Several academic design programs reference the portfolio as the primary gauge that determines and demonstrates the student's design ability, competency and level of creativity. However, the challenge faced by many schooled designers lies in the type of projects chosen for display. Generally, an undergraduate's portfolio contains typical assignments such as brochures, posters, stationery packages, web pages and logo designs. In rare cases, a recent graduate's portfolio will reflect exceptional talent—the visual synthesis of design education.

This paper discusses one pedagogic example for reframing a design course assignment. The project proposal, titled "Re-positioning Waste," synthesizes critical theory, research and application—producing a suggested solution with design substance, merit and with realistic fabrication while at the same time providing a public educational function.

Designing Designing: examining a problem based design curriculum

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Abstract

Visual communications students are given prompts to create artifacts to random solutions: a brochure, a logo, a website, in hopes that one of these visual artifacts/solutions will be the answer to a client's needs. Design educators need to shift from solution to problem based methods of educating where visual artifacts are arrived at through researching assigned problems, not assigned solutions.

When we assign/teach the solutions we ignore the critical step of determining if these artifacts are the appropriate solution to the problem. Creating a website and mailer for a daycare center needing increased enrollment seems a logical solution. However, the actual need isn't a website or a mailer, but increased enrollment. This is why we need to assign the problem to students, increased enrollment, not theoretical solutions. What if the problem of the daycare wasn't awareness, but the uninviting environment inside the waiting area limiting enrollment? The proper visual solution in this instance would be creating engaging graphics in the waiting area friendly to both parents and children. A website or mailer would have failed the client.

By assigning open ended problems such as increasing enrollment, elderly engagement, access to information, students will discover the accurate visual solutions through research and system mapping methods. This problem based approach has already begun to reveal thoughtful solutions. When prompted to improve the quality of their community, a student's first response was to create a website promoting recycling. However, during the research phase, it was discovered that recycling programs were slowly being rolled out citywide but this information was buried in a city goverment website. The student then solved the problem by running an awareness campaign on the city's mass transit system announcing this roll-out to 2 million viewers daily.

By teaching students how to research and understand the problem, not close ended solutions, they are better prepared to create the best visual solutions to solve the clients needs.

Teaching Design in a Multicultural Ambiance

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Abstract

The world asks for more acceptance among difference. Cultural diversity is quite the upmost issue in almost every kind of enquiry on sociological basis. Global society, if one can take it as a real possibility, must preserve all kind of cultural differences in order to maintain a democratic order, with no essential or universal notion as paradigm. Cultural aspects such as habits or aesthetical issues are usually the carriers of built group individualities. That is why democracy, which seems to be suffering one of its worst attacks, have to stand up for its principles along all educational period in one´s life.

For a long time, design education has sustained absolute values. The very notion of *good design* has not yield to a new kind of its own evaluation. Criteria about what is or is not good design have not achieved a wide reconnaissance in such a way to reflect objectively upon educational activities.

In Brazil, the idea of design was rooted in class differentiation and became a practice of an elite, while social fabrics did not include a vast amount of the whole country population. Right now, a huge amount of people is coming into the market. A new middle class is looking for its place as consumers and as producers. This is a new reality when old aesthetic and functional notions have to be reevaluated in order to define new educational approaches.

New policies in Brazil based on racial and social aspects changed the public who is actually attending design classes, posing new questions to design education.

This paper intends to present an investigation on design education inside a social differentiated and multicultural ambiance. In fact, different cultures can provide new approaches to design pratice. But what really happens when one is confronted with such a difference among his or hers students in the same classroom?

(Young) students, (old) faculty:
Are we speaking the same language?

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Al's personal website is
TheViewFrom32.com

Paper can be viewed
online at:
www.awdsgn.
com/dailyjournal/
UCDA_2010/

Instant gratification (executive summary)

Students and teachers live in and navigate the world in very different ways. Age makes a huge difference, with the biggest gaps between young (18-24) students and old (45 and up) faculty.

Big disconnects

(Old) teachers read books and want their students to read books. (Young) students don't read much.

Students play video games. A lot. Teachers ignore video games. Completely.

Possible meeting ground

Both groups like social media, particularly Facebook.

[See Media Diet survey results]

Background

The original question (to design educators):

Do you teach software in your design classes, and if so, how much time do you spend teaching theory/concept vs. software/technology?

The question became the basis for my sabbatical research proposal (Dec. 2007): Trains, Teaching and Technology (www.awdsgn.com/dailyjournal/dec07/html/dailypg_120407.htm)

Comment by Meredith Davis at AIGA *Massaging Media* conference (April 2008):

> The study of digital media is tacked onto a print-based armature; students get to networked communication courses only after they have met their traditional requirements inn print and only if the human and material resources of the program go far enough to support additional coursework. As a result, these digital media classes frequently encourage the transfer of print-based values to the screen.
>
> -Massaging Media keynote address
> (http://www.massagingmedia2.org/keynote-address-meredith-davis)

The connection?

Teachers are stuck in the past, while students live in the present.

First steps
Online surveys for teachers and students: original surveys
(August 2008)
(www.awdsgn.com/dailyjournal/aug08/html/
dailypg_081808.htm)

As of June 1, 2010, 154 **teachers** replied:

- 81% sometimes or always teach software in class
- **75% satisfied/very satisfied** with how this works
- 82% think students are satisfied/very satisfied.

299 **students** replied:

- 85% sometimes or always are taught software in class
- **64% are satisfied/very satisfied** with this approach
- 86% think instructor is satisfied/very satisfied
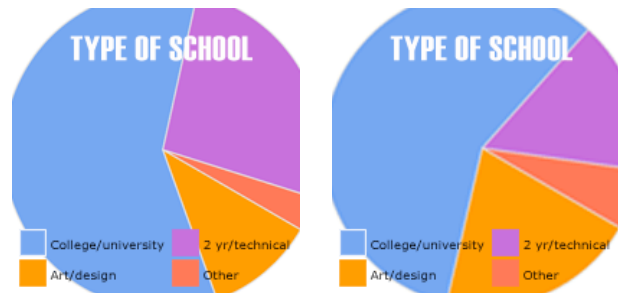
Answers to original question
Time teaching design theory/software:

Art/Design Schools: 53%/40%
Community College/Technical Schools: 56%/44%
College/University: 68%/32%

Overall roughly **60% theory, 40% software**

Next step: talk to teachers and students
I decided to spend roughly a month traveling by train
across the U.S., talking to as many teachers and students
as I could. Afterwards I also visited Herron School of Art in
Indianapolis and Sinclair Community College in Dayton,
Ohio. In all I went to ten schools and spoke with sixteen
faculty and a handful of students.
map of usa

THE ROUTE
Survey respondents who said "yes" or "maybe" to
a visit, plotted on map (http://mapalist.com/Public/
pm.aspx?mapid=21537). I matched these locations as
best I could with the Amtrak route map.

My ultimate route was Cleveland-Santa Fe-Los Angeles-
San Francisco-Portland-Milwaukee. Later I drove to
Indianapolis and Dayton.

THE PEOPLE
I spoke with a range of instructors and department
heads, young and old. You can see and hear many of
them in this short video (http://www.youtube.com/
watch?v=Kpe4hEO4g-I)

HOW (ELSE) DID YOU LEARN THE SOFTWARE?

Instructor suggests/requires that you to learn the software via...

	Suggested	Required	Response Count
Online tutorials	95.7% (176)	7.6% (14)	184
Video tutorials	93.4% (128)	7.3% (10)	137
Book(s)	65.9% (141)	42.5% (91)	214
Other class	84.3% (91)	18.5% (20)	108
Non-credit workshops	97.4% (74)	3.9% (3)	76

Uh-oh

Back home in Cleveland I tried to make sense of what I'd learned. Somewhere between the conversations and the data a big difference became visible.

Yep, teachers don't require students to learn software using any specific method except... books. Now, what do we know about students and books?

33% read less than 1 hour per week. **73% less than 5 hours per week.**

Teachers, on the other hand, read a lot: 90% more than 1 hour per week, **54% more than 5 hours per week.**

These numbers move a bit higher for younger students (age 18-24).

New survey(s)

As I thought about what I'd learned by talking with teachers and students, the differences in how we use media began to loom large as an area of disconnect. I created a simple online survey to ask *What's Your Media Diet?*

The survey includes questions about age and occupation as well as a matrix of media use questions. If you haven't already, please take the survey (www.surveymonkey.com/s.aspx?sm=6H%2fjIbk1RK1%2bjapUkV76Rc72Zv2MHzPHuB42MKnZVno%3d&).

In a nutshell, here are the results (updated June 9, 2010):
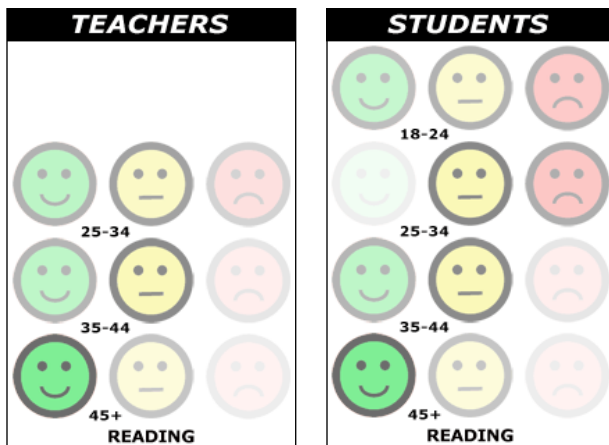
Books

Teachers, especially older ones, see reading as a primary way to acquire knowledge. Students, especially younger ones, don't read much.

These charts show that while in general teachers prefer reading more than students, age is the most important factor, not occupation.

Regardless, most college students are in the 18-24 age group, and most teachers are significantly older. In my surveys the largest number of teachers fall into the 45+ group.

Let's take a look at what happens when we compare young students with old teachers:

Pretty dramatic difference, no?

We need to be aware of this as we plan our classes. Our preferences should not determine our choices.

Despite the fact that we like reading books, does it make sense to assign books as the primary information source when we know that students don't read much?

This is not to say that we should ignore books. It does suggest that we might see better results if we assign other types of resources in addition to books. The most-frequently recommended non-book resource is the Lynda.com website.

Games
Students spend a lot of time playing **video games**. Teachers by and large disdain them.

These charts show a huge disconnect. The problem isn't that all students love games, they don't. The problem is that many do, yet virtually all teachers ignore games.

See below for suggestions on how to make games an asset to learning.

Again the age difference is very significant. The contrast is starkly visible when we compare young students to old teachers:

We can think of this as a problem or an opportunity, but we do need to think about it. Like them or not, we should be trying to figure out how to incorporate game mechanics into our teaching methods. Why not?

TEACHERS

25-34

35-44

45+

SOCIAL MEDIA

STUDENTS

18-24

25-34

35-44

45+
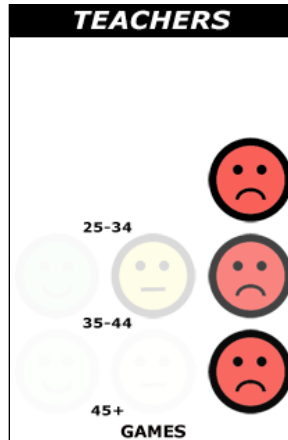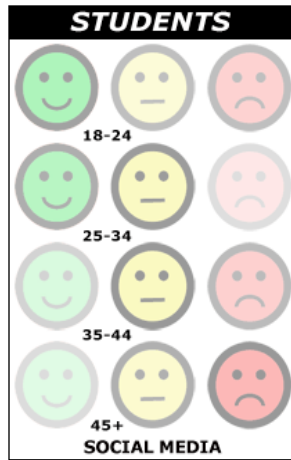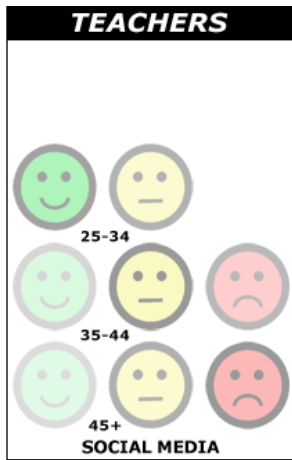
SOCIAL MEDIA

Social media

This may be our meeting ground: student and teacher views about social media like Facebook and Twitter are quite similar (Facebook is most frequently mentioned).

Again, the difference in age seems more important than whether the response is from a student or teacher. If anything, teachers may be more involved with social media than their students of similar ages.

How can we use this common interest in social media to improve our teaching?

Traits of younger students

Gen X (born 1961-81) = 29-49

Millennials (born 1981-2000) = < 29

To get a sense of the Millennial generation, take the *How Millennial Are You?* quiz (http://pewresearch.org/millennials/quiz)developed by the Pew Research Center.

You can get a very good overview of many of the issues we're talking about by watching videos created by Anthropology professor Michael Wesch from Kansas State:

A Vision of Students Today (www.youtube.com/watch?v=dGCJ46vyR9o&feature=channel)

The Machine is Us/ing Us (www.youtube.com/watch?v=6gmP4nk0EOE)

Another concept that helps explain the differences in how people use media is *Digital natives, Digital Immigrants*, by Marc Prensky. (http://www.twitchspeed.com/site/Prensky%20-%20 Digital%20Natives,%20Digital%20Immigrants%20-%20 Part1.htm)

Suggestions

OK, if you're convinced that there are differences and you want to reach out to younger students, what should you do? This is the question I'm most frequently asked. I don't have any good answers yet, but here are a few things you can start with:

If it can be **online**, put it online (student work, too: real work for real audiences).

If it can be **collaborative**, make it collaborative (discussions, blogs, wikis, etc.)

If it can be more **fun**, make it more fun.

If you can make it a **game**, make it a game.

Overview

A short list of helpful websites:

Digital Media & Learning (Howard Reingold's blog)
dmlcentral.net

Millennial Student Resource List (University of Ontario)
www.uoit.ca/teachingandlearning/contact/nov05/nov05.
html

Teaching Millennial Students (DePaul University)
teachingcommons.depaul.edu/How_to/engage_students/
knowing/teachingmcs.html

Twitch Speed: Keeping up with young workers,
Marc Prensky
www.twitchspeed.com/site/article.html

Specifics

The videos below will start you thinking about how we might relate games and education.

Games are essential to human survival, Jane McGonigal
www.awdsgn.com/dailyjournal/apr10/html/
dailypg_040610.htm

Using game mechanics to improve software *Putting the Fun in Functional*, Amy Jo Kim
www.awdsgn.com/dailyjournal/apr10/html/
dailypg_042010.htm

FreeRice.com is a simple example of this in practice.
FreeRice.com

"I love teaching. I hate grading."
Making the most of a subjective situation.

Blake Coglianese
University of
North Florida

Abstract

During the last five years of collegiate-level design education, that phrase has been uttered many times by my colleagues and myself. However, it is my opinion that grading — more specifically, relative, instructive and objective assessment — is one of the most important responsibilities of a design educator. Each semester, we, as professors, discuss theories and principles of design and then, to evaluate our students' understanding, we ask them to complete an assignment; the task being a visual artifact that begins with a comprehensive assignment sheet and ends with a critical analysis of their work. We require our students to create visuals that communicate and inspire, challenging them to consider this question: If the visual does not communicate can it be deemed a success? However, how often does our own communication fail when describing project requirements, outcomes and expectations? "Assessment defines what students regard as important, how they spend their time and how they come to see themselves as students and then as graduates." (Brown, Bull & Pendleburry, 1997, p. 7.) A student can do only what is asked of him or her, but if it is not asked in a clear concise way, outcomes are sure to vary. As a result, students may ultimately complete a project without ever knowing why it was assigned in the first place; or when receiving the final grade, may not accurately make sense of the grading criteria.

In the last five years, I've developed a number of variations of assignment documents and grading rubrics in an effort to clarify all stages of each class project. Reducing the percentage of subjective grading criteria in an attempt to focus on objective measurement also plays a large part in this modification process. Follow-up questions regarding grading criteria and requests for further explanation by the students usually triggered a revision in these documents. The original goal was to develop a method of grading that could be applied to multiple projects from a set of consistent criteria that reinforced determined design principles and technical requirements. As a result, the later rubrics serve in two capacities: first, as the grading mechanism, and second, as a checklist for students to follow in completing their assigned projects.

Keywords: graphic design, self-assessment, grading

"I love teaching. I hate grading."

Making the most of a subjective situation

It is my opinion that grading — more specifically, relative, instructive and objective assessment
— is one of the most important responsibilities of a design educator. How does grading and
assessment differ? When assigning a grade a judgement call is made based upon some level of
expectations and a value is assigned to the work in question. Assessment does not assign a value
to the work, it is merely a platform used to offer feedback and guide improvement–a grade is the
byproduct of assessment. (Grading = rating, Assessment = constructive feedback) Therefore,
what is the best way to assess a student's progress and assign them an objective grade for a
project? According to Brown, Bull & Pendleburry (1997) "Assessment defines what students
regard as important, how they spend their time and how they come to see themselves as students
and then as graduates." (p. 7) A student can do only what is asked of him or her, but if it is not
asked in a clear concise way, outcomes are sure to vary. As a result, students may ultimately
complete a project without ever knowing why it was assigned in the first place; or when
receiving the final grade, may not accurately make sense of the grading criteria. As I considered
the notion of assessment more critically I began to ask more questions. This paper contains my
initial observations along with the improvements made to my grading rubrics utilized over a 5
year evolution. I have experimented with a number of variations on assignment documents and
grading rubrics in an effort to clarify all stages of a design project.

This trial and error process began with grading based on no rubric and transformed into a
system with a comprehensive rubric using organized assessable criteria. Follow-up questions
regarding grading criteria and requests for further explanation by the students usually prompted a

revision in these documents. Reducing the percentage of subjective grading criteria in an attempt

to focus on objective measurement also played a large part in this modification process. The

original goal was to develop a method of grading that could be applied to multiple projects from

a set of consistent criteria that reinforced: process, concept, design and technical requirements.

As a result, the later rubrics serve in two capacities: first, as the assessment and grading

mechanism, and second, as a reference for students to follow in completing their assigned

projects prior to submission.

At first, this task was set in motion for selfish reasons, originally the intention was to

devise a plan to simplify the grading and assessment process for class assignments (i.e. decrease

the time spent grading). Another desired result was the reduction of student questions related to

grading procedures.

While reviewing higher-education assessment within the disciplines of art and design, I

discovered that most of the information is limited to studies and research regarding K–12 art

education and assessment in the visual arts but little directly related to assessment within the

discipline of graphic design. Dorn (2002) discusses assessment in the visual arts and assessment

procedures. Dorn, Madeja and Sabol (2004) provide a survey of student and portfolio assessment

methods in visual arts for those teaching K–12. Gruber's (2008) and Popovich's (2006) research

is centered on the use of assessment strategies by art teachers.

With insufficient research related specifically to higher-education design assessment, I

continued my research into more general higher education assessment techniques. Surprisingly

other disciplines were struggling with some of the same issues that I encountered in my design

studio courses, and my evolving assessment methods aligned more with those teaching outside of

the visual arts (ie. fine arts). Finding successful models designed for other disciplines could

become the foundation for design rubrics, and the lessons learned could be applied to design related projects. David Boud, Ruth Cohen and Jane Sampson (1999) notes, "Assessment is the single most powerful influence on learning in formal courses and, if not designed well, can easily undermine the positive features of an important strategy in the repertoire of teaching and learning approaches." (p. 413) Furthermore Boud et al emphasized "assessment should normally follow educational goals and fit with the design of courses, not determine them." (p. 417)

Assessment ≠ Grading

Grading and assessment are two different yet complementary concepts also referred to as formative and summative assessment.

> Carnegie Mellon's Eberly Center for Teaching Excellence defines, the goal of formative assessment is to gather feedback that can be used by the instructor and the students to guide improvements in the ongoing teaching and learning context. These are low stakes assessments for students and instructors. Low stakes assessment encourages student learning without major consequences. The goal of summative assessment is to measure the level of success or proficiency that has been obtained at the end of an instructional unit, by comparing it against some standard or benchmark. The outcome of a summative assessment can be used formatively when students or faculty take the results and use them to guide their efforts and activities in subsequent courses. ("Formative vs Summative Assessment")

Making Assessment More Objective

As I continue to refine my rubrics and methods of assessment, my original selfish goals take a back seat to more consequential aspirations that have a positive affect on student-learning. When designed appropriately a grading rubric could become a learning tool and not merely an artifact signaling the end of a project. My first grading rubrics, were not rubrics at all, they were nothing more than a medium-specific outcome and a blank sheet of paper used as a mechanism for feedback and evaluation. In my experience, verbal critique and art direction were two common vehicles for assessment. I still find that these two methods can be used successfully within the classroom, however I now use them simultaneously with the help of clear objectives and a detailed rubric.

With a lack of a grading rubric it was challenging to assess and grade objectively. Beyond the medium-specific objective for example, "Design a (fill in the blank here)", students were often left in the dark without detailed objectives and clear expectations. This lead to students questioning grades because there was no clear correlation between the assessment and the grade. This was not a desired outcome. According to Brown et al (1997), "Students are likely to initiate learning, sustain it, direct it and actively involve themselves in it when they believe that success or failure is caused by there own effort or lack of it rather than by outside forces." (p. 27) During class critiques feedback was conveyed constructively, and throughout the process students were provided project expectations verbally. The missing component was a written rubric that could be easily referenced. With a written rubric, expectations would be more concrete and students would not look at assessment like a moving target. The written rubric also served as subtle contract between professor and student. "…results suggest that feedback as a learning process has a salutary effect on student performance when professors give an assignment or task, they are

agreeing to be held accountable for providing critical feedback to their students. This accountability puts pressure on professors to provide students with the necessary feedback to help them improve their task performances." (Rucker and Thomson 2003) As I evaluated each project, I noticed that I was making the same comments repeatedly. The initial rubric was designed in response to this issue (*figure 1*), and was to become the foundation for each iteration (*figure 2*). Now the rubric is modified and redesigned based on continued research and feedback from the students who are benefitting from the increased level of meaningful assessment.

Project 1 Web Design Studio II Fall'06

MINIMAL DIRECTION
ENDLESS POSSIBILITIES

Grading:
The final grade for Project 1 will be based on the following criteria.

Process: 20%

- Overall concept, originality	0	1	2	3	4	5
- Clarity of message	0	1	2	3	4	5
- Process book	0	2	4	6	8	10

Design/Animation: 40%

- Composition/Layout	0	2	4	6	8	10
- Use of color	0	2	4	6	8	10
- Typography	0	2	4	6	8	10
- Imagery/Illustration	0	2	4	6	8	10

Technical Execution: 30%

- Semantic HTML	0	1	2	3	4	5
- Separation of structure from presentation	0	1	2	3	4	5
- Valid HTML and CSS	0	2	4	6	8	10
- Organized file structure	0	1	2	3	4	5
- File optimization	0	1	2	3	4	5

Presentation: 10%

- Met deadlines	0	1	2	3	4	5
- Overall quality/craftsmanship	0	1	2	3	4	5

Additional notes on back or in process book.

Name:

figure 1

Project 01
CSS Zen Garden
Advanced Web Design / Fall '08 /

Grading:
The final grade for Project 1 will be based on the following criteria.

Additional notes can be found in your process book, and on the presentation boards. Don't forget about the comments made during the final critique.

Process: 10%	Points Possible					
- Written Articulation	0	1	2	3	4	5
- Process Book	0	1	2	3	4	5

Design: 40%						
- Composition, layout and alignment	0	2	4	6	8	10
- HTML and graphical typography	0	2	4	6	8	10
- Imagery and/or illustration	0	2	4	6	8	10
- Color and contrast	0	1	2	3	4	5
- Overall visual concept	0	1	2	3	4	5

Technical Execution: 50%						
- Valid linked CSS file	0					10
- Organized CSS file	0	1	2	3	4	5
- Commented CSS file	0	1	2	3	4	5
- Use of CSS shorthand	0	1	2	3	4	5
- Remove non-required CSS rules	0	1	2	3	4	5
- Font scaling at least 2x's	0	1	2	3	4	5
- Consistent image naming	0					5
- Image optimization	0	1	2	3	4	5

Total Number of Points:

Letter Grade:

Additional comments:

figure 2

No Rubric	Rubric 1 (fig 1)	Rubric 2 (fig 2)	Rubric 3 (fig 3)
Pros Open Flexible No setup	*Pros* Defined categories Descriptive criteria Simple Minimal setup	*Pros* More organized Added in-process grade Additional criteria descriptions.	*Pros* Thorough descriptive criteria. Organized
Cons Inconsistent Not clear Everything written Time consuming	*Cons* Descriptive criteria not comprehensive. Small format, need place for notes.	*Cons* Design category too broad Point values in design category are restrictive.	*Cons* Time consuming initial setup. Design criteria dimensions need to be more descriptive.

Gorlewski (2010) states, assessment is critically important because the artifacts [developed in the classroom] are the result of a system developed and implemented by the [professor]. Keep in mind that there are two audiences in this process—the teacher and the student. Research shows "Once the assignment has been marked, it tends to be archived by the students and there seems to be little transfer of learning to the next assignment" (Brown, Bull & Pendleburry 1997). Therefore the refined system would need to provide information and engagement to facilitate the transfer of learning. The original goals may have been the impetus for the modification, but new objectives quickly emerged and overshadowed the original goals:

• Develop a rubric, that demonstrates clear objective criteria for projects and guides the student in understanding learning outcomes.

• Reinforce those criteria throughout the process so students would be better equipped to evaluate their work and the work of their peers.

• Initiate consistent grading rubrics so students would be able to accurately gauge their strengths and weaknesses from one project to another and ultimately one class to the next.

• Transfer knowledge from one project to the next.

Self Assessment

In lieu of a final critique for project 1, students in the spring 2010 Advanced Wed Design class

were asked to evaluate their projects using the grading rubric. This self-assessment exercise was

introduced to evaluate the student's comprehension of the updated and redesigned assessment

criteria. The assessment and grade was not used in their project evaluation. The rubric was a

duplicate of what would be used to evaluate the final grade for this project. Even though this was

the first project of the semester, students would be familiar with the specific rubric format

because it was used in the previous class, Introduction to Web Design. At the onset of the project,

students were given a copy of the rubric so they would be aware of the grading criteria. Students

were not aware that they would be doing a self-assessment of their work. During critiques and

feedback sessions, the assessed criteria was discussed and reinforced through the use of

formative assessment.

The rubric is divided into 3 overall categories, process, design and technical execution;

within each category there are subcategories and descriptive assessable criteria. (*figure 3*) The

process category outlines specific tasks such as research analysis, diverse exploration of ideas,

and accurate and complete comps. The design category is broken up into four subcategories:

overall layout and design, applying type rules, image / illustrations and concept / style. Under

these subcategories are criteria descriptions specifying design rules and principles which can be

applied to the assignment. Each dimension includes three assessed values: competent, needs

work and unacceptable. The values were selected because their meaning is clear and attainable.

Students typically review and rework projects in the upper level classes for inclusion into their

portfolio. These values give students a clear sense of their progress on the project. The final category technical execution is more task oriented. Each criteria description provides a specific technical objective deemed important and necessary for building out the assignment. For each description a numerical value is assigned; some descriptions are black and white, the student completes the task correctly and receives full credit, and in other cases there is a range from 0–5 which can be assessed based on the complexity of the task or degree in which the task was successfully completed.

Project 01
CSS Zen Garden
Advanced Web Design / Spring '10 /

In Process:

01.11	Phase 1 (*thumbnails & roughs*)	0	-3	-5
01.20	Phase 2 (*psd comp*)	0	-3	-5
01.27	Phase 3 (*progress critique*)	0	-3	-5

Name: _____

The final grade for Project 1 will be based on the following criteria.

Digital Process Book: 10%

	Competent	Needs Work	Unacceptable
Written Component			
Spelling and Grammar	□	□	□
Appropriate design terminology used	□	□	□
Articulated design decisions & process	□	□	□
Visual research analyzed	□	□	□
Layout/Concept Development			
Minimum requirements met	□	□	□
Diverse exploration of ideas (thumbnails)	□	□	□
Hand-rendered full color detailed roughs	□	□	□
Accurate and complete comps	□	□	□

CD includes all required files and process

1 Organized PDF Process Book
   Made up of:
    Written Articulation
    Topic and visual research
    Thumbnails 30 minimum
    Roughs 3 minimum
    Digital (PSD) Comp 1 minimum
    Final Screen shot

Possible Points: 10

0 1 2 3 4 5 6 7 8 9 10

Design: 40%

	Competent	Needs Work	Unacceptable
Overall Layout/Design			
Color/Contrast	□	□	□
Repetition/Rhythm	□	□	□
Alignment/Grid	□	□	□
Proximity/Unity	□	□	□
Balance	□	□	□
Graphic Elements	□	□	□
Designing with Type/Type Rules			
Appropriate font choice	□	□	□
Scale and proportion (hierarchy)	□	□	□
Line height & line length	□	□	□
Color/Contrast	□	□	□
Repetition/Rhythm	□	□	□
Alignment/Grid	□	□	□
Proximity/Unity	□	□	□
Linked Text	□	□	□
Image/Illustration			
Appropriate subject &/or style	□	□	□
Composition Focus/Light/Framing	□	□	□
Color/Tone	□	□	□
Concept/Style			
Unique | Above Average | Average | Cliche | Lacks Concept			

Possible Points: 40 | Total Points: _____

Technical Execution: 50%

Execution and File Management

Fits target resolution (800 x 600)	0					5
Valid linked CSS file	0					10
Organized & Commented CSS file	0	1	2	3	4	5
Remove non-required CSS rules	0	1	2	3	4	5
Use of CSS shorthand (*background, font, border, padding and margin*)	0	1	2	3	4	5
Font-size & line-height value spec'd as relative unit of measure	0					5
Font scaling at least 2x's	0	1	2	3	4	5
Consistent image naming	0					5
Image optimization (*each image should be under 100KB*)	0	1	2	3	4	5

Possible Points: 50 | Total Points: _____

Total Score   _____

Minus In Process grade   − _____

Final Score/Grade   _____

figure 3

Observations

Out of the 14 students taking part in the self-assessment 8 students accurately calculated their grade for the project by either being within +/-1 point or by assessing the correct letter grade. One student underestimated their grade by 3 points and 5 students overestimated their grades by +3–10 points. As I was compiling the results I noticed the females in the class evaluated their work more accurately. Out of the 6 females in the class 4 correctly calculated their work, 1 female student underestimated their grade by 3 points and 1 female student over estimated their work by 4 points.

(M)ale (F)emale	Estimated Grade (letter) number	Actual Grade (letter) number	+over estimated / -underestimated*
F	(A-) 90	(B+) 89	+1
F	(A) 95	(A) 95	0
F	(B-) 82	(B) 85	-3
F	(B+) 87	(B) 86	+1
F	(A-) 93	(A-) 93	0
F	(A) 95	(A-) 91	+4
M	(A-) 90	(B+) 89	+1
M	(B) 85	(B) 86	-1
M	(B) 83	(B) 83	0
M	(B+) 87	(B) 83	+4
M	(B-) 82	(C+) 78	+4
M	(B+) 87	(C+) 79	+8
M	(A-) 90	(A-) 90	0
M	(B+) 88	(C+) 78	+10

Students that estimated their grade within +/-1pt were considered accurately calculated

Out of the 8 males who participated in this exercise, 4 male students accurately graded their project while 4 male students overestimated their grade by as much as 10 points. As a result of the multiple categories and criteria, small errors in each section may add up to a much larger error. A critical review of self-assessment literature, analyzing 48 quantitative studies, examined differences between student and teacher marks when assessing the same student performance noted no overall consistent tendency to over-or underestimate performance was found. (Boud and Falchikov 1989) In the critical review by Boud and Falchikov the difference between the sexes was under-researched, however based on my observations I am going to continue to examine the differences in how male and female students assess their strengths and weakness. This may lead me to vary my approach when it comes to one-on-one critique.

12 of 14 students accurately graded themselves to within +/-5 points or one half letter grade which lead me to believe the students had a reasonable comprehension of the project outcomes and expectations. The students enrolled in this class were all upper-level students either junior or senior level, however Falchikov and Goldfinch note, that there is little indication that peer assessment seems to be more valid in upper level courses.

As to not turn this into a self-fulfilling prophecy, I refrained from examining the self-assessments until after I finished my part in the grading process. While it was interesting to see how well students were able to estimate their grade, it wasn't the most important element. What mattered was, could the students assess their strengths and weakness using the rubric and would they use what they learned to increase their chances of success in the following assignments?

After reviewing the student scores each category was examined to see how the students arrived at their respective scores and whether they were able to accurately assess their own

strengths and weaknesses when it came to the design categories. Students were able to accurately assess their process and technical execution categories with more success than the design category. While students were able to arrive at a numerical value in the design category they did have a more difficult time assessing their strengths and weakness concerning the design rules, principles and concept subcategories. The technical execution category scores were most consistent with my final assessment. This is attributed to the fact that the grading criteria is more specific than in the other categories. Students did consider the design categories to be more of a challenge, because students were asked to make global judgements on their application of specific design principles and the less objective concept / style category. While the process and execution categories were considered to have more concrete assessment criteria. Students considered some of the descriptions in the design category to be subjective. (ie. What does appropriate font choice mean and how can it be evaluated?)

Considering the results of this informal inquiry it is safe to say the criteria descriptions need to be further clarified. To make the criteria descriptions more explicit and increase the accuracy of student assessment; more examples will be developed to help describe the criteria, and provide detailed examples of what constitutes work that is competent, needs work or unacceptable. With the addition of these details the students should be more capable to better assess there strengths and weaknesses using evidence-based assessment. Even after adding the additional criteria into the grading rubric there will still be a level of subjectivity in grading design / concept based projects. The goal is not to completely remove that aspect from the process because that may lead to predictable design solutions. A clear yet detailed rubric will convey to students an accurate and fair picture of their progress while minimizing the typical grade related questions.

What questions remain to be addressed?

At this point the current sampling size is small because it involves only one class. In the future, a formal study designed using mixed methods may be conducted to include a control group to evaluate the effectiveness of the rubric. I will continue to include self-assessment as part of the course work. In order to make further improvements to the system, classes using the current rubrics were asked to evaluate the grading criteria. The following quotes were selected from those evaluations. Many students commented, "The grade sheets are thorough and easy to read." One student mentioned, "It's usually obvious to see where I went wrong or why points were taken off." Some students were more critical of the rubrics, "Sometimes the written comments are more successful in describing what went good and bad"; "too broad, I get more out of the notes in the project" As this was an informal study the data can be interpreted very liberally. Even so, my observations have intensified my desire to continue refining my class grading rubrics to be more transparent and meaningful.

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Designing for the Global Village: Transformational Learning in a Cross-Cultural Environment

Claudia Scaff
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Abstract

It is essential these days that students are exposed to educational approaches that include both professional development and cross-cultural dimensions. The Art, Design and Advertising in Brazil program was designed to provide students with an understanding of how non-profit promotions are executed in Brazil through direct interaction with local organizations and creative community. This program proposed to supply professional and cross-cultural dimensions in a way that would enrich students' academic experience through multiple learning opportunities.

The purpose of the program was to give to the participants an opportunity to learn, compare and contrast how promotional campaigns are developed and executed in Brazil while interacting with non-profit organizations and established design professionals. It provided students with experiences in three areas, cultural, by living in a diverse metropolitan city, interacted with locals, experienced the language, visual arts, music, and gastronomy; social, by being exposed to the social challenges while working closely with a non-profit organization; and educational, by conceptualizing strategies to create fundraising promotions for the organization.

In addition to the promotional pieces, students had to write an essay describing their experiences from pre-departure to arrival to the U.S. Furthermore; they had to produce one self-written piece that focused on a specific aspect of their overall experience. Also, an online survey was given before departure and after they came back. The results of the survey provided statistical evidence of their learning experience.

This paper examines student responses to this program using qualitative analysis and identifies opportunities for learning that enriched students' academic experience by integrating design theory and practice. It describes the challenges students faced while applying their knowledge and skills to real-world design issues in a cross-cultural environment by working with professionals and clients in a distinctive cultural environment.

Promoting Visual Information for Environmental Sustainability: Explorations using Typography, Motion and Digital Media

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Abstract

Our society is living in the motion of an information culture. The capability of digital media demands that it reach a global audience and modify information instantaneously. This fast paced, massive communication is able to promote select issues, and enhance positive contributions for environmental responsibilities that are facing our society. Among these issues is a lack of persuasive knowledge amongst the general population about environmental destruction, non-renewable resource depletion, waste production, air pollution, global warming, and deforestation etc.

Sustainability issues have been raised in a broad range of globalized systems of product development, production and marketing. The awareness of sustainable concerns has forged an approach to develop new directions in improving our living environment. Our personal responsibilities are demanding that we continually rethink our values and expectations of sustainability issues in which we envision radical approaches for effective progress.

The purpose of this presentation is to provide an overview of a design course in which students learn to make metaphors of visual communication, utilizing complex tools of typography and motion to help raise awareness of sustainability. Students concern about environmental issues and the importance of their responsibility as a designer enable them to invent numerous ways to promote sustainability using informative and entertaining designs. It translates information into an inspirational message of environmental issues supported by the digital media.

Throughout the course, facing environmental responsibility is actively analyzed as a global problem, with regards to information derived from personal, cultural, and social issues where the messages are both ethical and environmental. Through problem solving, students become aware of how their visual approach can be a powerful tool promoting and changing environmental sustainability issues. The complex interaction of the environmental sustainability message, typography and motion play a vital role in creating time-based visual communication as an intangible form of aesthetic quality.

Without Boundaries. Design and Environmental Stewardship

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In a 1969 interview conducted as part of the exhibition "What is Design" at the Museum of Decorative Arts in Paris, American furniture designer, filmmaker, architect, toy designer, exhibition designer and educator Charles Eames was asked:

To whom does design address itself?
To the greatest number, to the specialist of an enlightened matter,
to a privileged social class?

He answered:
Design addresses itself to the need.

Today, two generations later, Eames' answer seems more relevant than ever. In this moment of increasing global attention to fragile ecosystems, and within a profession hungry for both more sustainable techniques and new models of ethical practice, the "needs" seem overwhelmingly urgent and complex. The challenges of our moment do not respect our professional boundaries. They do not present themselves to us one at a time and they are often messy & political. For certain, they are as technically complex as anything we have faced.

To "address" oneself to these "needs," the designer must become a nimble tactician. We play on a terrain imposed and organized by external forces.[1] Appropriating the words of the mid-20th century philosopher Isaiah Berlin, the designer tactician becomes "the fox who knows many things."[2]

The designer-tactician forms news kinds of alliances. Externally, collaborations must be cultivated with technical experts, activists, and public bodies. Within our studios, cross-disciplinary work, a modernist imperative at least as old as the Bauhaus, remains a pressing necessity.

At every point—for the designer driven by the need—design techniques are understood not as goals in and of themselves, but rather as means to an end. As Eames reminds us, "*Design is a mode of action."*

A Pedagogy of Social Engagement

As design faculty in a school of art, we are committed as educators to fostering this interconnected model of design action. In the fall of 2009, we attempted to implement these ideas by developing an environmental design course, driven by and responding to existing campus 'needs'. By dropping our titles, "interior" and "graphic", we worked to create a classroom of innovative student designers committed by talent, temperament,

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[1] Michel de Certeau, *The Practice of Everyday Life*, trans. Steven Rendall (Berkley, University of California Press, 1984), 36-38.
[2] Isaiah Berlin, *The Hedgehog and the Fox: An Essay on Tolstoy's View of History*
(London, Weidenfeld & Nicolson,1953)

passion, and necessity to engaging the concrete problems of our day. By fostering collaborations with those outside of the conventional design 'comfort zone'—scientific experts, technicians, diverse publics, and activists—and by listening, talking, and learning, we hoped to recast the challenges of our surroundings as spaces of operation and engagement.

We observe that for our students, a design education has been—too often—the compartmentalized and isolated study of techniques. The students move from class to class, working off of tightly scripted briefs to master skills (e.g. design process, concept development, creative thinking, form making, professional practice, presentation, etc.) The projects are handed directly to them—some with the grading rubric stamped on the assignment. The rules are tight, the permissible outcomes pre-delineated. The students work diligently (or not) and present design solutions to their classmates in the classroom. While of course recognizing the importance of design literacy and the mastery of professional techniques, far too often this traditional form of pedagogy perpetuates confusion between means and ends.

We hoped that our team-taught course last fall would be a demonstration of an alternative model. Our goals were broad and (naively?) ambitious:

- To develop, and then enact, a design pedagogy of social engagement.
- To learn more about the difficult questions of sustainable design
- To allow ourselves the flexibility to think and act like designers outside of our professional titles
- To challenge our students to tackle the most complex problems they could conceive of
- To develop visionary and transformative ideas for new campus landscapes.

In order to realize these goals, we committed ourselves to creating a studio project that was loose in its structure and driven by 'needs'. We were invited to work collaboratively with two institutes at our University, the Institute for Visual Studies and the Institute for Stewardship of the Natural World, on a demonstration project for a sustainable landscape for our campus. This course coincided with another team-taught course, "Environmental Rhetoric," that was planning to develop a marketing campaign for sustainable practices for the university. Our environmental design course would study models and "best-practices" for sustainably designed landscapes within the built environment, with the goal of then designing our own local examples.

GRPH 392/INDE 300/INDE 400 Environmental Design

Prior to the start of the fall semester, we began to define the project's areas of 'need' by talking to facilities engineers, grounds-keepers, and environmental scientists at JMU. We wanted to learn to see our campus afresh through their eyes and with their constraints. Working collaboratively with this group, we identified three overlooked locations on the campus. Each had significant environmental 'issues' and none had been addressed by the existing campus master plans. There were clear needs.

The first day of class was interesting (to say the least). The students were an evenly split mixture of interior design majors and graphic design majors, who looked at us as mad scientists about to use them as guinea pigs in an experiment. And in a way, they were. We explained that this was not going to be an ordinary design studio. If they were

looking for a safe and predictable cookie cutter graphic or interior design course, this wasn't it. We explained that they would be called upon to balance existing skills and knowledge with new concepts and problems while working in a team environment. The phrase "like a graduate-level class" was used. Several students dropped the class, but the ones who remained entered with enthusiasm and ambition.

In total, we had 23 students and (less than)15-weeks in which to work.

Collaborations also occurred with outside voices that helped influence the final outcomes for the project. Environmental artist Michael Singer visited the classroom twice to critique the student work. Consultations with storm-water experts, facilities, gardeners, engineering faculty, and neighborhood constituents all helped shape the success of the investigations.

We organized the course into three components:
1. Warm-up exercise
2. Main design project: Sustainable Landscapes at JMU
3. Exhibition and presentation to the President of the University

To enrich the conversations of the studio, and to deepen our visual precedents, we devoted much of the first few weeks to seminar readings and project presentations. We read, among others, Thomas Berry, "Art in the Ecozoic Era"[3]; Cynthia Davidson's interview with Glenn Murcutt, "Raised to Observe"[4]; and William Cronon, "The Trouble with Wilderness."[5] We looked at case studies from three books: *Signage and Wayfinding Design* (2007), *Groundswell: Constructing the Contemporary Landscape* (2005), and *Tactile: High Touch Visuals* (2007).

1. The Warm-ups
Before introducing the students to the "big picture" project, we decided a three-week warm-up exercise was the best way to start. Doing so allowed the students to ease into uncharted disciplinary territories, work through some of our discussions from the readings and project examples, and to get to know each other.
 We asked campus environmental scientists, "What is the largest sustainability accomplishment on the JMU campus?"
They replied, "Storm-water mitigation."
Well that was news to us (and presumably the rest of the campus). There was an obvious disconnect between what the University was most proud of in regards to sustainability and whether anyone knew it existed.
For this small project, the 'need' was therefore awareness of the University's accomplishments in storm-water runoff management. We identified three ways the students could inform the public about the University's successes: moveable signage,

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[3] *Art Journal*, v.51 no.2 (1992): 46-48

[4] *Log*, no.8 (2006): 31-40

[5] William Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature* (New York: W. W. Norton & Co., 1995), 69-90

architectural surfaces, and site-specific constructions. Students were assembled into teams for this exercise and were given the category for which their information would be displayed. They began by investigating the different areas on campus that address storm-water runoff—rain gardens, sand filters, drop inlets, green roofs, retention ponds, bog gardens, etc. and would use those areas for their public information graphics. Final Powerpoint presentations were presented to facilities management to show the results of the exercise. They can be viewed at www.jmu.edu/ivs/envppt.html.

2. Sustainable Landscapes at JMU

Following completion of the warm-up storm-water projects, we turned our attentions to the main work of the semester—the design of sustainable campus landscapes. Three sites were identified, as 'needs'—a vacant lot owned in a nearby neighborhood, a side-entrance/courtyard to a generic academic building, and a drainage channel/walkway between a parking lot and tennis courts. Working in teams of three, students met with environmental scientists and University grounds staff, researched site issues, researched sustainable materials, studied design alternatives, and proposed design solutions.

Students were asked to address the needs of each site by developing powerful and compelling aesthetic alternatives to the manicured "golf-course look" that dominates most of the outdoor areas on campus. We wondered if sustainable could equal beautiful. Yes we can prove it!

Research was one key technique to encourage students to venture outside of their familiar design knowledge areas. First, the topics were equally hard and complex for all of us; we were all in over our heads! Second, successful research required intelligence, imagination, and the ability to synthesize; these skills obviously do not belong to any one particular design profession. Third, complex research is a team-effort. To assemble the multi-faceted knowledge base the projects required, the teams had to collaborate together.

The topics that were researched included: natural systems (rainwater, wildlife, and vegetation), human activities (seating, gardening, nighttime safety), water conservation, sustainable hardscape and plant materials, energy use (including lighting), signage/graphics, and overlapping social constituencies (neighborhood residents, student users, groundskeepers). Finally each team was asked to account for the feasibility of their proposed design solution.

While the students were working on their research tasks, we simultaneously brought them through a model-making and form-discovery process. The iterative steps drew upon their experiences from 2D and 3D foundations. It moved (approximately) from abstract 2-dimensional → 2.5 dimension → 3-dimensional → scaled models → scaled elements & components & materials.

As the form-making advanced, the groups began to fold-in their outside research. Each team developed a project statement, graphic language, material palate, and site-specific strategies and elements. The designs were refined through technical drawings, renderings, and combine visuals with the use of Photoshop. Three weeks into the project we had a critique with visiting artist Michael Singer.

Throughout the process, the studio remained focused on the need to communicate their ideas to larger, non-design publics. No one lost sight of the fact that our studio would conclude with a public exhibition and presentation to the University President.

Although the work of each of the 7 teams was distinct (and some of their projects truly extraordinary), with hindsight we observe that the projects addressed themselves to a consistent set of themes and questions across the teams:

- First was the ongoing 'need' to foster and encourage interactions between humans and site-specific natural systems.
- Second was an interest in energy conservation
- Third were solutions for flood-water mitigation
- Fourth was the cultivation of native and low-maintenance plants
- And finally, a desire to use the projects as vehicles for environmental education

Total time for the sustainable landscape projects was 12 weeks.

3. University-wide exhibition

The design work concluded with a University-wide exhibition that was held at the Institute for Visual Studies gallery. The opening was well received and public—over 100 students, two-dozen faculty, deans, provosts and the president of the University all viewed the students' work.

The outcome from this project has had an enormous positive effect. By offering the University concrete models of landscapes that were beautiful, environmentally sensitive, site-specific, thought provoking, and imminently feasible, our studio demonstrated realistic alternatives to the existing manicured institutional status quo.

One project in particular, the *Alluvial Garden*, was selected by the University President for further development and implementation. A video featuring the project and interviews with the participants can be viewed on YouTube (JMU Alluvial Garden) or on the JMU website at www.jmu.edu/jmuweb/cmpa/videobox/SL10-AG.mov. Disappointingly, current budget realities have now stopped this process. But interest and support for the concepts remain. A future collaboration is being planned with Michael Singer for a new sustainable landscape project that will begin in Spring 2011.

Conclusions

We began this project by thinking about the word design as a verb, a mode of action. We imaged a design project—and a portion of a design education—driven by needs. We were willing to collaborate broadly, and work outside of our disciplinary boundaries.

It was an experiment in design action.

And so we ask, ***what did we learn?***

In the end we observed that the students, by addressing themselves to the *needs* of a problem—and not focusing exclusively on techniques or predetermined final outcomes— were able to sophisticatedly engage a broad set of complicated questions well outside of their conventional disciplinary boundaries.

They learned to put a high value on intelligence, research and process. By emphasizing teamwork, they benefited from the collective skill sets and insights of everyone involved. As the process unfolded, a snowball effect took over whereby each

student learned something new by observing another. There was no time for stagnation, and really no chance in a team in which someone was always able to carry the ball. Which is not to say that we did not experience the typical range of outcomes from weak to strong. But rather, the groups who were stronger and more confident took on more complex ideas by digging deeper into the issue and asking more difficult questions.

The studio was a 15-week experiment in designing without boundaries. Working across disciplines, and collaborating with folks from across the community and University, we demonstrated the enormous possibilities for designers, willing to work outside of their labels and safe professional spaces, to engage with complex social problems. In that label-free arena the design skills and professional techniques that we bring to the table (and that we cherish) are the *means* by which we operate. The ends are then free to be determined by the complex demands of *the need*.

Designing Curriculum that Embraces the Past, While Equipping for the Future

Karen Gutowsky-Zimmerman
Seattle Pacific University

As we move into a democratized creative culture we need to empower our design students with the understanding of their unique abilities and the contributions they offer to future communities. Because of the power design has to transform experiences, and to inform the user when designing design, we need to continue to build experts in visual form and message distribution. Whether students will be form makers or visual interpreters, we have an urgent need for these capabilities in a culture amassed with visual communication. One way I see a change in society is to help develop visual literacy in our everyday communities, and empower our students to be agents of this change.

In helping to develop visual literacy, we must equip our students with the ability to see and translate visual messages. In designing design curriculum, we need a generation of designers that are sensitive to the user-experience as it relates to form and function. Working in teams of cross disciplines, design students learn translational skills in which they are able to communicate processes and methods of design, that pertain to visual literacy with audiences outside the design community. In this paper, I would like to address current pedagogy of design curriculum that is relevant and necessary in developing visual awareness. Curriculums that include form building and translation methods, along with the proposition and emphases of design experiences, which enable the design student to participate in educating audiences with vocabulary and tools to gain a greater sense of visual literacy.

"Visual literacy is the ability to interpret, negotiate, and make meaning from information presented in the form of an image. Visual literacy is based on the idea that pictures can be 'read' and that meaning can be communicated through a process of reading."[1]

So why is visual literacy relevant in our current and future information culture?
I believe there to be two primary reasons. First, we are at a point in time when the majority of people are experiencing information overload. It has been demonstrated that one of the best ways to disseminate vast systems of information is to create visual programs of hierarchy and association enabling the user to have easier access to information. Second reason to promote visual literacy, is that the designers primary tools to create visual communication devices have become democratized. This transformation of form building is decentralizing our professional product. In Clay Shirky's book, *"Here Comes Everybody,"* in chapter three, he outlines a scenario of the newspaper industry in

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1. (Wickipedia http://en.wikipedia.org/wiki/Visual_literacy.) The term "visual literacy" is credited to John Debes, co-founder of the International Visual Literacy Association. In 1969 Debes offered a tentative definition of the concept: "Visual literacy refers to a group of vision-competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences."

which he writes about a small town newspaper publisher being concerned that the national newspaper, *USA Today* would take over his local distribution. In fact, that fear ended up not being a threat; however there was an unknown commodity in the 1980's beginning to develop that would ultimately be a greater concern. We now know that unknown commodity to be the internet. "The executives of the world's newspapers were slow to understand the change, and even slower to react. How could this happen? How could the newspaper industry miss such an obvious and grave challenge to their business?"[1] As our world is now populated with DIY (Do It Yourself), crowd sourcing, re-mixing, social networking and the redefinition of professionalism, we are no longer seeing the traditional designer/client role as the sole author of visual communication devices. This process of creation has now moved into general mainstream populace in which everyone is a designer creating a vernacular of communication that is based on familiarity rather than expertise. For example, the use of sans-serif typography in body text or printed material rather than using serif fonts, which are designed for tracking and legibility in large amounts of text. The familiarity of sans-serif fonts used throughout the internet because of pixel function and clarity have now become commonplace in printed books and publications.

I believe the reason for this "commonplace aesthetic" is the lack of expertise in visual communication design. This is a direct result in which visual studies plays a low priority in general education for the masses. It is evident by the success of such broadcast systems as YouTube, the internet and the use of iPhones that a majority of our information is now delivered visually rather than through traditional methods using primarily text. Our information in these systems is delivered through visual devices such icons, color, typography and image. In a world dominated by visual messaging there is a need for society to become visually literate.

Within the education system, visual literacy is primarily taught to art and design students in higher education, leaving a majority of the population with little or no knowledge of critical theories necessary to understand and articulate visual messaging. It is with this presumption that I believe now more than ever we need to teach our design students how to develop and disseminate visual messages and how to articulate these processes with the masses. In turn the masses can use these visual skill sets to create appropriate forms of visual communication.
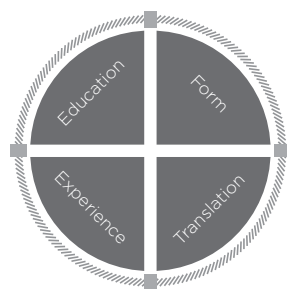
This paper proposes design pedagogy in four areas, Form, Translation, Experience and Education. Using excerpts from the American Institute of Graphic Design: "Designer of 2015 Competencies" education initiative[2] as a framework for discussion, below is an outline of primary skills in which design students need to acquire during their studies in school are as follows:

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1. Shirky, Clay. Here Comes Everybody, Penguin Publishing, 2008, p. 57.

2. Text is an excerpt from AIGA: American Institute of Graphic Design "Designer of 2015 Competencies" education initiative (http://www.aiga.org/content.cfm/designer-of-2015-competencies)

— Ability to create and develop visual response to communication problems, including understanding of hierarchy, typography, aesthetics, composition and construction of meaningful images;

— Ability to solve communication problems including identifying the problem, researching, analysis, solution generating, prototyping, user testing and outcome evaluation;

—Broad understanding of issues related to the cognitive, social, cultural, technological and economic contexts for design;

—Ability to respond to audience contexts recognizing physical, cognitive, cultural and social human factors that shape design decisions;

—Understanding of and ability to utilize tools and technology;

—Management and communication skills necessary to function productively in large interdisciplinary teams and "flat" organizational structures;

—Ability to construct verbal arguments for solutions that address diverse users/ audiences; lifespan issues; and business/organizational operations.[1]

Form

A traditional pedagogy of design education has revolved around form building. As stated in AIGA's Education Initiative for 2015 Design Graduates:

> —Ability to create and develop visual response to communication problems, including understanding of hierarchy, typography, aesthetics, composition and construction of meaningful images;
>
> —Understanding of and ability to utilize tools and technology[1]

We as design educators have used methods of teaching, class assignments and studio simulations that replicate the Bauhaus movement in Germany in the early 1920's, along with techniques propagated by the International Typographic Style in Switzerland in the 1950's. There is general consensus from current design educators that these methods and theories of creating visual sensitivity and form building still work today with strong success and outcomes.

VCD educators also agree that design students must develop an understanding along with the ability to use tools and technologies appropriate to visual communication in form building and message delivery.

I am an advocate of these courses and suggest that both form building and technology courses are a mainstay in general design education. The way in which these courses are appropriated is up to each institution, with the primary goal being the same. These courses develop a visual awareness and vocabulary appropriate to visual literacy.

Translation

I have generalized the topic "translation" in order to accommodate areas of human centered design. The pedagogy of "translation" is design that incorporates the needs of

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1. Text is an excerpt from AIGA: American Institute of Graphic Design "Designer of 2015 Competencies" education initiative (http://www.aiga.org/content.cfm/designer-of-2015-competencies)

the user and uses this information to formulate design decisions. How I define "translation" in that it is a designers job to get to know the needs of the audience in order to disseminate appropriate visual forms that relate to the users culture, context and message delivery. Design curriculum in this area includes research methods, user testing, ethnography studies, information gathering, message perception and interpretation. Including the following skill sets stated in AIGA's Education Initiative for 2015 Design Graduates:

> —Ability to solve communication problems including identifying the problem, researching, analysis, solution generating, prototyping, user testing and outcome evaluation;
> —Broad understanding of issues related to the cognitive, social, cultural, technological and economic contexts for design;
> —Ability to respond to audience contexts recognizing physical, cognitive, cultural and social human factors that shape design decisions.[1]

These areas of critical thinking and application are currently used in successful Visual Communication Design programs. Design educators may disagree as to how and where these theories should be applied within the curricular structure, but do agree in their value to the curriculum.

> "The end result of all visual experience, in nature but primarily in design, lies in the interaction of duplex polarities: first, the forces of content (message and meaning) and form (design, medium, and arrangement); and second, the effect on each other of the articulator (designer, artist, craftsman) and the receiver (audience). In either case, one cannot be separated from the other. Form is affected by content; content is affected by form. The message is cast by the creator and modified by the observer."—Donis A. Dondis, A *Primary of Visual Literacy*[2]

As "translation" of form becomes more complex including greater amounts of user interaction, VCD educators must draw on other areas of study to include Industrial, Architecture and Interior Design to have a better understanding of research methodologies appropriate to human factors and its relationship to media. As with "form" the pedagogy for "translation" needs to be present in design curriculum that fully engages in the vast landscape of visual communication. It is necessary to incorporate these types of "translation studies" into design curriculum in order to give students the vocabulary necessary to communicate visual literacy to a general audience. Methods of research give purpose to meaning and contextualize visual form.

Experience
As we enter into curriculum development that promotes "experience" I would first like to state the obvious ways in which we incorporate "experience" into our current design curriculum. A primary source is through design internships. These internships are valuable in that they give the student the opportunity to be mentored by design professionals and to be part of real case scenarios. Another form of "experience" is to

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1. Text is an excerpt from AIGA: American Institute of Graphic Design "Designer of 2015 Competencies" education initiative (http://www.aiga.org/content.cfm/designer-of-2015-competencies)

2. Dondis, Donis A. A Primer of Visual Literacy, MIT Press, 1973, p. 104.

bring outside client projects into the design classroom, as these replicate a professional encounter and enable the student to maneuver within a professional framework.

Although I believe both experiences are valuable, I don't believe they are neutral in that they allow for the student to develop their own processes to create methods and vocabulary to navigate the terrain of design solutions. I believe if a student is able to "experience" design problems that are based on their own development they are more likely to own the information and then in turn translate their experience to others helping in the process of education in visual literacy. Note the following skill sets stated in AIGA's Education Initiative for 2015 Design Graduates:

> —Management and communication skills necessary to function productively in large interdisciplinary
> teams and "flat" organizational structures;
> —Ability to construct verbal arguments for solutions that address diverse users/audiences; lifespan
> issues; and business/organizational operations [1]

Included in this paper are two cases studies. The following case studies relate to transformational experiences with information design and brand development.

Case Study One: Visualization of Scientific Principles—Seattle Pacific University-Visual Communication Design students were asked by the SPU Physics department to develop visualizations that demonstrate scientific principles such as "Energy transfers and transformations in daily phenomena." The assignment was to develop a poster series informing new science students of basic scientific principles. The first poster demonstrated the scientific principle and the second poster translated this principle into found application or social significance. VCD students were asked at the end of the course to give a presentation to high school science teachers on "how-to" help K-12 science students visualize abstract concepts. Below are a series of images that illustrate research, ideation, articulation and presentation of the VCD students final posters.
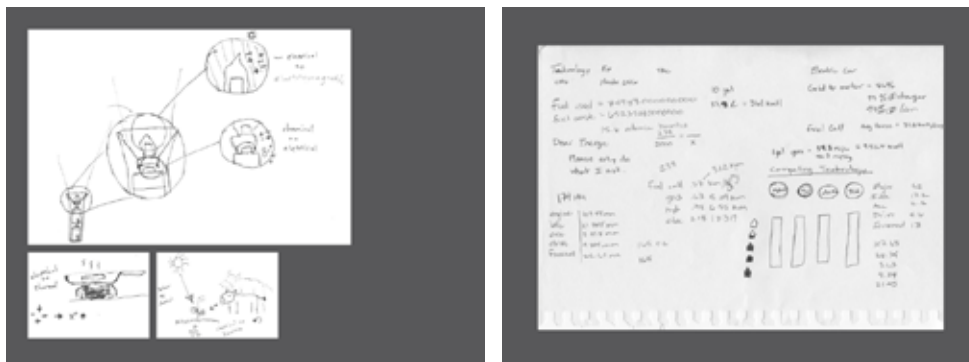
Visual translation studies [2]

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1. Text is an excerpt from AIGA: American Institute of Graphic Design "Designer of 2015 Competencies" education initiative (http://www.aiga.org/content.cfm/designer-of-2015-competencies)

2. Images are from a presentation in January 2010 that VCD students Justin Rusk, Eric Duong and Alexander Schoner gave to K-12 Science teachers as part of an education committee from the National Science Foundation.
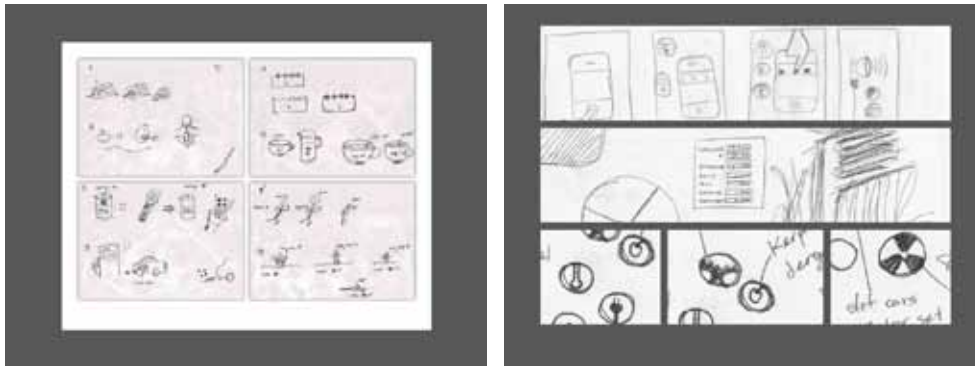
Additional visual translation studies. [1]

First hand research at the "Physics Tea" with VCD students
and professor along with Physics students and professors.
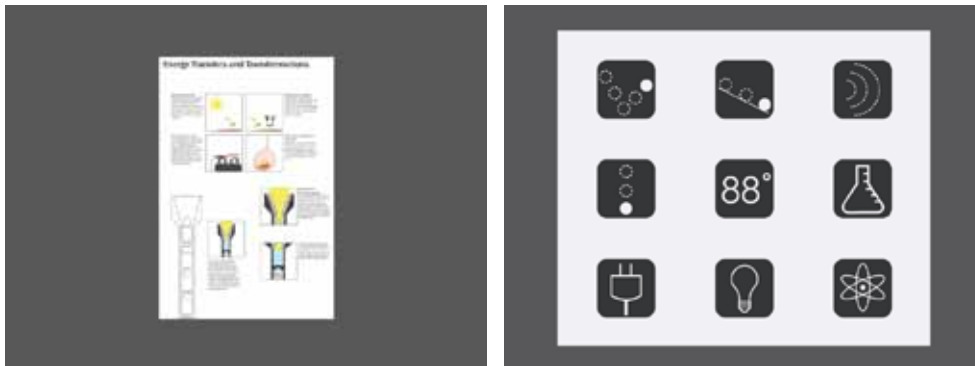
Design ideations.

1. Images are from a presentation in January 2010 that VCD students Justin Rusk, Eric Duong and Alexander Schoner
gave to K-12 Science teachers as part of an education committee from the National Science Foundation.
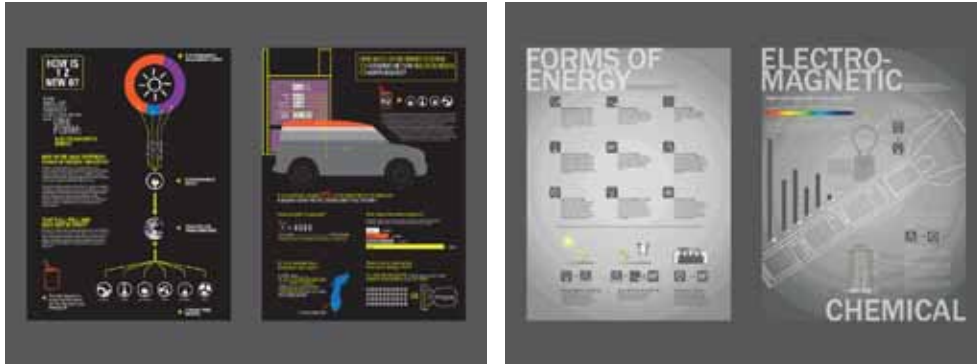
Final design solutions. [1]

The significance of this experience for the VCD students, was that they learned the process of creating information design and it's relevance in our society. They also gathered the vocabulary and organizational tools to reiterate to a scientific community the skills and methods of design thinking.

In this project the VCD students learned:
— Research practices to include: web-based, publications, and first-hand observation through physic professors, students and K-12 science teachers;
— Appropriation of visual form;
— Narration and story telling through information design;
— Working with interdisciplinary teams;
— Ability to execute well designed forms that are accurate and understood; *and*
— How to communicate information design principles to a general public and propagate visual literacy.

The success of this design exploration was in the "experience" they had in developing visual awareness and sensitivity to form, narrative and information hierarchy. This "experience" allowed them to fully engage in the process and methodology of form building, translation and education.

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Case Study Two: Branded: 12 Hours from Idea to Identity[2]—Seattle Pacific University-Visual Communication Design students from the student AIGA club worked with teams of business and global studies majors to develop brand identity systems for selected "Social Venture Projects." The primary goal was to develop brand solutions for select projects to include design brief, naming, lock-up, brand assets and graphic guidelines in a 12-hour immersion experience.

The concept behind this experience was to create an opportunity in which design students could demonstrate and communicate their skill sets to a community who in the

1. Images are from a presentation in January 2010 that VCD students Justin Rusk, Eric Duong and Alexander Schoner gave to K-12 Science teachers as part of an education committee from the National Science Foundation.

2. http://www.spu.edu/depts/ugadm/etc/magazine/2010-spring/branded.asp

future would be utilizing their services. It was decided by the SPU|AIGA student club to organize an event that would immerse both designer and client in an intensive experience in which all participants are part of the creative process.

Each year Seattle Pacific University puts on a "Social Venture Competition" that is comprised primarily of business and global studies majors. Groups are asked to propose a business plan that could potentially be carried out in the marketplace. The winner of the competition will receive seed money for start up costs for their business proposal. One such example is a Seattle local coffee company named *Pura Vida,* which promotes shade grown, organic and fair trade coffees.

The partnership between the concept of a brand immersion experience and the "Social Venture Competition" was a natural, so the students began planning this experience. VCD students were responsible for promoting, selecting proposals, orchestrating, executing and presenting final graphic assets. Below are a series of images that illustrate research, ideation, articulation and presentation of solutions for the "Branded" event.

Event graphics[1] and photo of interdisciplinary teams comprised of business, global studies, illustration and visual communication design students.[2]

Naming studies and logo ideation.

1. Poster graphic from student Ciara Hylarides

2. http://www.spu.edu/depts/sbe/mentorship/2010_SVPC_report.asp> Images of the event – Photos by Matthew Sumi

Process development.[1]
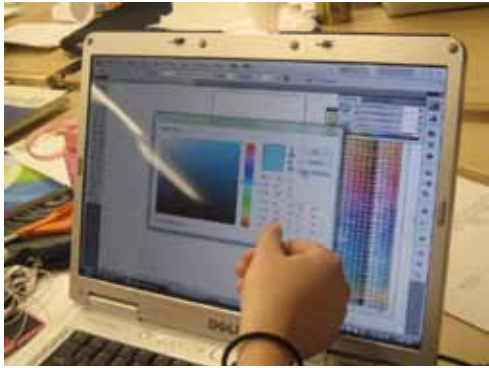
Implementation into computer to include color studies. Continuation of brainstorming ideas.

12-hours, you have to eat!

1. http://www.spu.edu/depts/sbe/mentorship/2010_SVPC_report.asp> Images of the event – Photos by Matthew Sumi

Final solutions and brand assets from Social Venture Project "Switch".[1] *Switch* is a sustainable energy efficient product.

Final solutions and brand assets Social Venture Project "Bloom".[2] *Bloom* is a global, organic tea house.

1. Images from final presentation from Branded team "Switch"

2. Images from final presentation from Branded team "Bloom"

Final solutions and brand assets Social Venture Project "Liftii".[1] *Liftii* online tool to partner ride sharing.
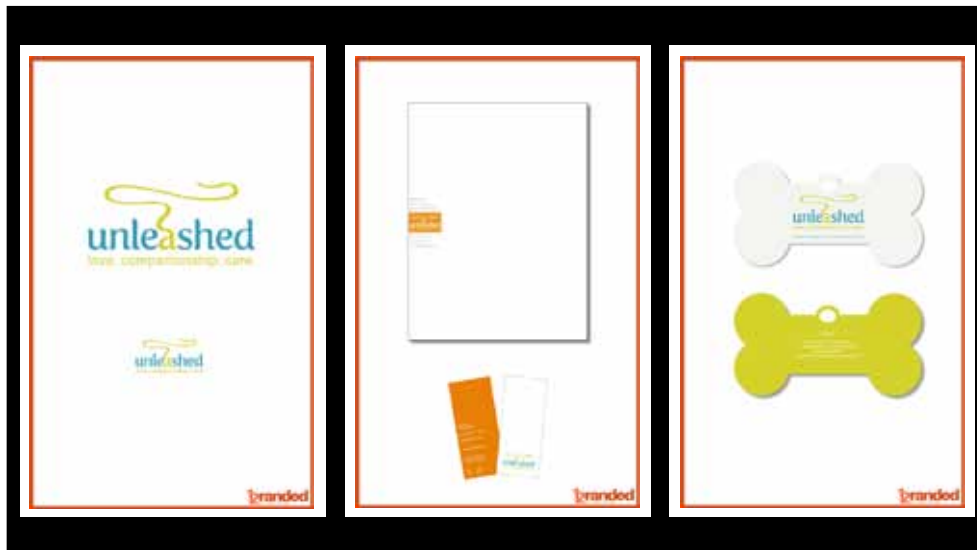
Final solutions and brand assets Social Venture Project "Unleashed".[2] *Unleashed* a dog-boarding kennel.

In reflection, the significance of this experience was a result of student initiation and desire to engage in a broader audience that would have direct response and consequence with their design considerations. Because this was a peer-to-peer "experience" students were able to move through the process of ideation from a level playing field without

1. Images from final presentation from Branded team "Liftii"

2. Images from final presentation from Branded team "Unleashed"

professional interruption. There were no marketing or creative directors overseeing the success of these projects. In turn they were able to collaborate with peers on successes, failures, iterations and studies in order to achieve relative success in their project results.

In this project the VCD students learned:
— How to lead clients through the process of ideation;
— Their design research translated into business solutions;
— To develop a brand guideline that can be used by a general user;
— To communicate design principles as it relates to business success;
— How to work in a multi-disciplinary team;
— Work toward project milestones;
— Consensus building without jeopardizing graphic standards; *and*
— How to communicate design methods and processes to a general public

The success of this design "experience" was the manner in which students collaborated as a team, the absence of ownership or titles, and the ability to communicate design thinking and process with non-design majors. In summary, a participant from the business school left the evening presentations with this statement, "I will never start a business without a designer, and their input is invaluable to the success of a product or service."

Education
The fourth part of this proposed curriculum is "education". For purposes of this paper, "education" refers to the opportunities our design students have to restate the skills, methods and understandings they obtained in their course work starting with "form", moving into "translation" and resulting in "experience". Incorporating opportunities for our students to present or articulate design processes to a general audience enables them to propagate visual literacy. In turn, this type of "educational" presentation brings value to their professional skills. In a world of crowd sourcing we need a visually literate society that will effectively employ visualization principles to disseminate information. I encourage my students not to be afraid to take on the challenge of educating the public in becoming visually literate.

Our design students benefit when we create curriculum that helps them understand the value of their visual communication design experiences and how these knowledge and skills can be translated to participants in the marketplace. "Education" can also result in helping our students see how their skill sets translate into a powerful purpose. For example, in the first case study when the students presented to the science teachers they saw the role design played in translating scientific principles and the significance this had on the learner. These concepts can be translated into any significant social cause such as homeless population, global wars and national debt.

In summary, sustaining a curriculum of the past incorporates form building and graphic dissemination, and continues to educate design students with audience, culture and

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1. Images from final presentation from Branded team "Liftii"

2. Images from final presentation from Branded team "Unleashed"

context as appropriate to the message and delivery system. However, this new curriculum proposes to educators to incorporate instruction that includes experience and methods that empower the student to be the educator.

When designing design we are reminded of the value in the continuation of visualization studies in "form" building and research components that formulate "translation". However, due to the changing climate that has resulted in such things as DIY (Do It Yourself), crowd sourcing, re-mixing, social networking and the redefinition of professionalism we need to incorporate in visual communication design curriculum opportunities of neutral, peer-to-peer, interdisciplinary "experiences" and structures of "education" that benefits the student in their statements of design thinking. Both the "experience" and the "education" phases of design course work give the student opportunity to grow beyond the role of form maker and into design strategist and educator.

My hope is that by intentionally including these last two phases of design curriculum into design pedagogy, we will empower our students with skill sets that translate into future needs of the design profession. With hopes of creating a design community that engages with the masses by walking alongside them as an agent of transformation, during an explosion of visual literacy. With the goal that visual literacy will enable the general user to create appropriate, interesting and transformational experiences in visual message making and dissemination.

Advancing Design Curriculum
The Inevitability of Online Course Content

Change is always before us, look for the visionaries.

David W. McGill
Professor of
Art and Design
Azusa Pacific University

Christopher Riche Evans, a British computer scientist and author, published "The Micro Millennium" in 1979. In his book Evans made predictions for the future, outcomes of the oncoming microcomputer revolution up to the year 2000. Along with video games, bar codes, GPS tracking bracelets, and cell phones, Evans envisioned the coming of computer graphics and the emergence of electronic publishing. In 1982, I read "The Micro Millennium." I had just been hired as a graphic designer. It was during those years when the Aerospace industry was riding the coat tails of government-funded projects. The Personal Computer had just come into being. Amidst the Herman Miller cubicles in an art department, I declared that one-day, drafting tables and Radiograph pens would be replaced by computers. My design associates were unconvinced. In 1986 I went to work for Genigraphics, one of the first computer generated graphics corporations. By the end of that decade, the Macintosh, Adobe's Postscript language, and the laser printer transformed the graphic arts profession. Technology continues to transform industries as well as our worldview.

Four years ago, in need of summer work to compliment a 9-month contract, I applied for an online adjunct teaching position in Graphic Design. My wife had already been teaching American Literature for an online college. As an option to the inconsistency of freelance work, it was a good plan. Two weeks of training, and I was

ready to facilitate an online course in Graphic Design. Several classes later, I discovered

that even though the online classroom presented both benefits and drawbacks, it had

already become established as an option in education. And much like the World Wide

Web itself, the sophistication of the tools for developing and distributing online content

has gained speed and sophistication.

Wireless campuses have become as common as laptops. The infrastructure for

delivering complex rich content and live interactive video is coming of age. According to

an announcement on the Internet on March 9, 2010, Cisco announced a "major

advancement in Internet networking designed to serve as the foundation of the next-

generation Internet and set the pace for the astonishing growth of video transmission,

mobile devices and new online services through this decade and beyond. With more

than 12 times the traffic capacity of the nearest competing system, the Cisco CRS-3 is

designed to transform the broadband communication and entertainment industry by

accelerating the delivery of compelling new experiences for consumers"

(newsroom.cisco.com/dlls/2010/prod_030910.html).

Here at the UCDA Design Education Summit I have enjoyed the learning

opportunities. It has been beneficial getting together with other Design colleagues to

discuss Graphic Design education. Two years ago when I attended my first Summit, I

was curious to find out what design colleagues thought about the option of online

education. The responses I received were skeptical. Also in my own department, it has

been difficult getting other design and art faculty to warm up to the concept of adding

online course content or teaching some of our classes online. This year's UCDA Design

Education Summit has offered me an excellent opportunity to present my research and experience in online design education to colleagues. My hope is to promote discussion in the area of developing online course content for a computer savvy student population.

Having witnessed dramatic technological transformations in both graphic arts and education, I have recognized two factors that have contributed to the growth of online learning. The first is the economic incentive. For educational institutions this has opened the door to a new demographic student population. The second is the changing nature of the clientele, the 21st century student. Having taught classes online for four years, in conjunction with a full time on campus position, I feel ready to discuss and analyze the emerging trends, learning options, and tools for online Graphic Design education and how it addresses the learning capabilities of today's student.

Three factors contribute to the inevitability of change: cost, convenience, and efficiency. In other words, if it is cheaper, easier, and faster, it will eventually become status quo. Of course, discussion and debate concerning the quality of the process inevitably follows. The migration from film to digital photography is a good demonstration of this principle. These three factors motivate consumers, but to be embraced and facilitated by business or educational institutions, one more requirement needs to be in place: Profitability. Online education, the virtual campus, and distance learning are some of the marketing names given to this means of delivering educational content. At our school, online content developers determined that "Distance Learning" was too impersonal, emphasizing the absence from the classroom. So they came up with

new term, "Distributed Learning." No matter what it is called, the popularity of online education and training is certainly an example of the principles of cost, convenience, efficiency, and profitability.

An article entitled "Going for Distance, Technology Convergence Powers growth of Online Education," by Pam Derringer, published in Tech & Learning, May 2010, states, "Despite essential flat college enrollments, the number of postsecondary students taking online courses boomed 17 percent in 2008, to 4.7 million, and the growth shows no signs of abating." This is not surprising when one considers the new student demographics accessible through Distance Learning. With the advances in Internet technologies and content distribution platforms like eCollege and BlackBoard, online learning transcends geographical boundaries distributing online course content to anyone anywhere. The article continues, "The convenience of online courses appeals particularly to older workers seeking new job skills in a tough economy but who nevertheless must juggle job and child care responsibilities, says Eileen Allen, an author of the Babson Research Survey Group's seventh annual online survey for Sloan Consortium" (Derringer). This holds true for the students I have worked with online. I have also discovered another set of students consisting of young high school graduates who do not find traditional classroom conducive to their learning style. Looking for career advancement opportunities, they turn to what they know and feel the most comfortable with, which is the Internet.

At our university, I have been following the grant opportunities for online curriculum development. The first areas endorsed were for full online programs. This

profit-oriented agenda was to access an entirely untapped resource of a new student population. However, over time, with the increasing demand for more classrooms, the alternative of online course offerings has become more monetarily attractive. The success of online schools has awakened community colleges and universities to a new student population. University of Phoenix, Kaplan University, Westwood College, Full Sail University, American InterContinental University Online, International Academy of Design and Technology and The Art Institute of Pittsburgh-Online Division all offer undergraduate degrees in Graphic Design. Miami International University of Art and Design in Florida and the Academy of Art University Online both offer Online Masters in Fine Art in Graphic Design. Onsite universities have become aware of this profitable opportunity recognize the benefit of joining in the competition for this new non-geographically defined demographic of students. Currently, our school will support the development of any course or major into an online format, provided it has departmental approval.

Those of us, who have been around for a while, have experienced phenomenal changes in the graphic arts industry. Adobe CS5 has just hit the shelves, and I am still working on learning what's new in CS4. Advertising design at one time was print. Now with the dominance of Web publications, curriculum for training professional designers must adjust to new criteria. The added demand of having to learn new software to develop online content and find time for the training to facilitate online classes, as well as develop the curriculum, is not at the top of my "to do" list. I have known graphic design professors would did not want to teach design applications, determining software training as a distraction to teaching design concepts. But negating the

utilization of computer-based learning tools as an integrated component of design education fails to acknowledge and address the learning proclivity of the technological sophistication of 21st century students.

Marshall McLuhan, author Understanding the Media, is well known for the expressions, "the medium is the message" and "global village." Another visionary, McLuhan predicted that cultural transformation would ensue from the insertion of mass media into the homes of families through television. Although he may not have anticipated the World Wide Web, his asserted that the *Medium* would have more identifiable long-term effects on society, than the intended *Message,* has come to pass. Video enhanced computer technology, the *Medium*, has over the past decade altered the way students think and learn. This transformation for documenting, communicating and comprehending information has altered the concept of literacy. Traditional literacy is broadly defined as the ability to read and write. Connecting the Digital Dots: Literacy of the 21st Century, an article by Barbara R. Jones-Kavalier and Suzanne L. Flannigan, published in the Educause Quarterly, Number 2, 2006, states, "Literacy today depends on understanding the multiple media that make-up our high-tech reality and developing the skills to use them effectively." The article continues, "Children learn these skills as part of their lives, like language, which they learn without realizing they are learning it." Online learning has emerged from this new paradigm for literacy, and is embraced by 21st Century student or *Digital Native.*

The term "digital native" was introduced by Marc Prensky, in his article "Digital Natives, Digital Immigrants," published in 2001. In the article he states, "Today's

teachers have to learn to communicate in the language and style of their students." He asserts that computer technology must be a fundamental component of classroom education, expanding learning opportunities, stating that, "a student's ability to think and process information has been altered from that of their predecessors," due to early and prolonged interaction with computer technology via videogames and the Internet. Therefore, learning can be significantly enhanced through the use of computer technology. As our student population evolves, so must the styles of curriculum development and distribution.

The chart below was prepared by David Cameron of Charles Sturt University, Bathurst Australia, for his article, "The Net Generation Goes to the University," a research article reviewing this phenomenon, presented to the Journalism Education Association conference in 2005. Cameron based this chart on information from Marc Prensky's article. In the "Digital Natives, Digital Immigrants, Part II: Do They Really Think Differently?" Prensky presents evidence of the cultural phenomenon "from neurobiology, social psychology, and from studies done using games for learning." Separate from the focus of this research, he verifies the shift in the learning paradigm, and recognizes interactive computer interfaces, such a video games as resources that can be adapted to the learning environment, modifying curriculum to account for the learning capacities of students, K-12. This chart demonstrates ten shifts from traditional learning.

Ten learning preferences of Prensky's Digital Natives (from Cameron, 2004).

	Digital natives prefer:	Traditional training provides:	Learning implications:
1	"Twitch" speed	Conventional speed	Students desire faster interaction with information (game speed).
2	Parallel processing	Linear processing	Students desire multitasking, processing multiple data simultaneously.
3	Graphics first	Text first	Students desire graphic information with a text backup.
4	Random access	Step-by-step	Students prefer hyperlinking through materials, rather than reading from beginning to end.
5	Connectivity	Stand alone	Students prefer networking, and high level of electronic communication.
6	Activity	Passivity	Students have less tolerance for passive instructional situations - learn by doing.
7	Play	Work	Students see computers as toys as well as tools; prefer to learn in a fun environment.
8	Payoff	Patience	Students expect immediate and clear feedback or reward in return for efforts.
9	Fantasy	Reality	Students accept fantasy and play elements as part of "serious" work, e.g. informal work settings.
10	Technology-as-friend	Technology-as-foe	Students see technology as empowering and necessary.

Over the past years, I have also witnessed an exponential increase in the demonstration of computer and software sophistication by students. Today's student, a digital native, begins with computer technology as a constant, more at home at the keyboard and computer screen then with a textbook. Research, writing, and image creation is much different then the education of my college days. Many instructors, like me, are digital immigrants. While design foundations may stay fundamentally the same, new curriculum must evolve to address the new learning criteria. The popularity of online learning is a symptom of this reality. The purpose of curriculum should be to address, access, and develop the full potential of today's design students in the classroom. There is an intriguing overlap between graphic design software and tools

used for the development of online distributed curriculum. The graphic design vocation sits at the center of the tools every other discipline is beginning to discover for communicating the new standard for literacy.

Prensky observed that, "today's students know more – and will always know more –than their teachers about technology and how to manipulate it." He also says, "Students observe their teachers' lack of fluency with modern tools, and view them as 'illiterate' in the very domain the kids know they will need for their future – technology." Whether we call this current generation of design students Digital Natives, Generation-D (digital), Nintendo Kids, the MTV generation, Net Generation, or Millennials, it is certain that their learning styles have been significantly modified by dynamic media and communication technologies. These same technologies of computer graphics, web publications, and video cell phones are placing new demands on commercial design and design education. A significant observation we should acknowledge is that our students are being influenced by the same technology that is has changed design production. This is where considerations of the integration of design technologies in the design curriculum must begin.

As stated earlier, online education has become profitable for many on-ground institutions. Teaching online, I have discovered some fascinating learning advantages germane to the online environment that can enhance the learning process in the onsite classroom. In the online environment, students are far more involved in discussions and interactions with classmates than in the typical onsite class. The online environment demands interaction from each student. They must type their thoughts to prove

participation. Students cannot sit quietly in the back corner of the classroom. The result is more active participation. Shy students often prove themselves assertive and knowledgeable in their responses to the discussion questions during participation in the online environment. The preference for online interactivity is cultivated in the Digital Native by the practice of texting, blogging, and instant messaging. Students today would rather text than talk, since they regard a phone call as a disruption. Personalities that tend to be subdued in the physical classroom often find the online environment more suitable for expressing their opinions and sharing their perspectives. The curriculum content in color theory, design principles, typography, and design history could be progressively enhanced by open asynchronous discussion online prior to on-ground class meetings.

As a graphic design instructor, competing with the computers in class has always given me concern. Are the students really taking notes, or just Instant Messaging on Facebook? Yet this compelling interface can easily become a dynamic tool in the classroom, rather than a distraction. Blackboard and eCollege offer easy interfaces for developing extension for curriculum distribution and design discussion. The activities of Dr. Michael Wesch, Assistant Professor of Cultural Anthropology, Kansas State University, are worth looking into as a model for integrating communication technology native to today's students. Wesch utilizes cell phones, text messaging, and YouTube videos for instruction. He has led students in the development of the *digital ethnography working group*, a team of cultural anthropology undergraduates exploring the impact of digital technology on human interaction and vice versa. The outcomes of

his methods have been positive because he uses the technology with which students are most familiar.

Prensky addressed the phenomenon of the rise of the Digital Native in 2001. Almost ten years later the research continues to confirm and chart the evolution in learning styles. The amount of research that continues to become available is immense, beyond the scope of this paper. Publications addressing 21st Century Learning and 21st Century Teaching are persistent. <u>California Educator</u>, <u>Tech & Learning</u>, <u>Campus Technology</u>, and <u>Advocate</u> all have printed articles reinforcing the necessity of developing interactive web distributed learning materials for today's computer literate student. Article focus on K-12 as well as higher education. At this point, let me be clear concerning my intentions. I am not advocating online learning over the traditional classroom setting. I am advocating that curriculum development must address a variety of learning styles, extending content distribution though the use of interactive web based presentations. A colleague once asked me if I used a PC or a Mac. The question supposed that the use of one platform would exclude the use of the other. My response, "I use both, why limit myself?" My point of view for curriculum is the same. We owe it to our students to take advantage of the technology (or mediums) that will be the most effective for the learning goals of a course, assignment, or topic. Tools for online curriculum development can vary, from simplistic and free of cost, to complex and expensive.

Online curriculum can be either asynchronous or synchronous. Often online courses use both, taking advantage of the learning potential of each method. Due to

time zone constraints, other online course may be entirely asynchronous, allowing students and faculty to access the online classroom at any time, engaging the online course materials in conjunction with interactive class participation in discussion blogs, responding to questions concerning course content. Various tools are available for facilitating both asynchronous and synchronous online learning. Synchronous tools include Adobe's Connect and ClassLive Pro. The proliferation of these tools has become a hot commodity, with the growing demand for online curriculum content. Graphic design graduates will find new careers, working with educational technology experts, developing interactive graphics in support of online learning tools.

A good beginning tool for simple online curriculum development is TechSmith's Jing and Jing Pro. Jing is free, Jing Pro cost about $15 per year. Jing allows you to record any movements on your computer screen, using any application or interface for 5 minutes per video. Jing also records your voice at the same time. One disadvantage of Jing and Jing Pro, is that each does not allow editing of the videos created. It is a live recording of sorts. What you do is what you get. This is useful for application training or demonstrating web research. I developed a series of videos for introducing graphic design students to use of Adobe InDesign. Students can view the swf videos over and over if they want to. In conjunction with Jing, TechSmith offers the use of Screencast.com, an online site for storing Jing videos. Using Screencast, provides an online server to facilitate access of videos for students, using URLs. To download a free copy of Jing, go to jingproject.com. Also, take a look at Screencast.com. The high-end version of Jing is called Camtasia Studio, available for both PC and Mac. Camtasia produces the same swf videos, but allows longer recording times as well as editing and

camera video recording. You can record you talking head, lecturing along with the narration of any onscreen activity. (techsmith.com/camtasiamac)

Blackboard and eCollege are two popular platforms for online learning available to colleges and universities. Much like developing web pages, you can publish syllabi and lectures. These two platforms can be similar to page layout applications. Videos, images and word processing content can be developed and imported to Blackboard and eCollege for distribution. Adobe products, including Photoshop, Illustrator, Dreamweaver, Flash, After Effects and Premier all can be used to create online content.

Although I have been teaching online courses for four years, I am just at the beginning of utilizing these new approaches to developing online course content for on-ground classes. Art Institute Pittsburgh, Online Division, like many online schools, provide established curriculum for each class. Instructors facilitate the established curriculum, working with the students throughout the class. I have found the curriculum design tools promoted by AIP OD intriguing. I am now in the process of developing curriculum to augment my on-ground courses. Last term I distributed materials using Facebook. TV.Adobe.com is a useful resource or application training videos for Adobe products. Though Facebook, I provide access to specific to TV.Adobe.com videos for web design. For my on-ground courses in the fall, I will be adding to online options for each class. Specifically, I will promote online discussion of reading assignments via eCompanion/cCollege, as an online supplement to the class discussions.

In conclusion, it is remarkable to see how much our students' learning abilities have been influenced and determined by a variety of long-term experiences with computer interactivity. Lectures, reading, reports and presentations fall short of effective learning in college courses for digital natives. Given the opportunity, students click away at keyboards and cell phones, expressing themselves with some fluency. Students read more web pages per day than printed textbook pages. Integrating and engaging these student behaviors, as a point of contact for student learning, becomes the goal of online course curriculum development. No doubt, tools for course development will become easier to use, but more complex in creating course content.

My last comment is directed at online textbooks. VitalSource BookShelf provides a resource for online/digital textbooks. This interface provides highlighting, accurate reference documentation, personal notes and quotes. Everything I did years ago with index cards and yellow highlighters for writing college level papers, can be done using this program along side the word processing production of a paper. The iPad, in conjunction with online or digital textbooks will remove paper and printers from the paper writing process. Digital access to curriculum, especially for K-12 learning will become a constant. Our task will be to integrate these technologies today at the university level.

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Seven Words You Can't Say in a Design Studio

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Abstract

This paper investigates the influence of design vocabulary on the relationship between the conceptual and the material dimensions of a design process. We intend to highlight a collection of linguistic obstacles by reflecting on seven words that encourage a disjointed design process. Vocabulary such as *idea, concept, inspiration, creativity, brainstorming, sketching,* or *style* is easily misinterpreted and hinders the design process with an unnecessary lack of clarity. We are concerned about how language affects design activity. Design studio communication unknowingly erects a restrictive partition between theoretical and practical knowledge. While we have no intention to challenge etymology, we do want to scrutinize the consequence of design language on design process.

Dialogue with students defines parameters for the studio as a learning environment. We support an education that facilitates an environment in which design is engaged as a discovery rather than preconception. Design must be understood as an integrated and simultaneous activity of both thinking and doing.

Of particular significance to our linguistic analysis is the value of time devoted to studio activity. We will argue that a students relentless intention to be efficient fundamentally interferes with process. Students too often exhibit a keen aspiration to quickly devise conclusions or outcomes without exposure to the time, rigor, or multiple iterations that comprise a design process. In turn, students often mistake an uninformed idea for a design. They present premature conclusions unchallenged by alternatives. Excessive faith and reliance on ideas is not only the antithesis of design, it is a professional abomination. In our investigation of design vocabulary, we will examine the use of words that represent a passive relation to design and challenge the reader to consider a broader sense of what it means to engage a design process.

TEACHING DESIGN PROCESS

This paper originates from discussions on design pedagogy by two colleagues at the College of Architecture, Art and Design at the American University of Sharjah. The authors share curricular responsibilities in the College, which come with trans-disciplinarity and respect. Although teaching design and architecture at an American university in the Middle East comes with specific challenges and rewards (some that certainly influenced the thoughts expressed in this paper) we feel that the arguments here apply generally to design education principles.

COMMUNICATING DESIGN

Every design studio comes with a dynamic that is a product of not only a particular group of students, but also the attitude and posture of the professor in charge. Design is integrally connected to communication, and studying design entails a rich and varied collection of activities, adventures and experiences. In studio, we share stories, images and artifacts, and in doing so, we talk. It is the teacher's professorial obligation to initiate and maintain a persistent discourse in pursuit of understanding design. (figures 1-2) The specific quality and effectiveness of a studio dynamic depends on many variables, but relies primarily on the professorial direction and tone used in the studio instruction. Discussions are spontaneous and rehearsed, explicit and implicit, explained and demonstrated. The characteristic atmosphere of the learning environment is defined by such communication. The studio assumes a rhythm that lingers in the atmosphere from class to class, week to week throughout the semester, which affects the understanding of the design agenda in any given studio. The range of understanding in our classrooms has a lot to do with the vocabulary dispersed over the course of a semester. We owe it to ourselves, our students, and the profession to exercise great care in the use of language, as the studio activities are associated directly with the words we use to discuss them.

Universally, we face a rather complex agenda in our pursuit to educate designers. The fundamental questions require a great deal of attention and are often subject to rather loose interpretation and consensus. What is design? What is a design process? What kinds of activities in the process are potentially valuable? What is an idea? Is there a difference between an idea and a concept? What is a sketch? What is creativity and where can I buy some?

We find instances where studios operate with very little instruction, discussion or collective learning. The professor distributes an assignment, often referred to as "a problem," and the students are expected to solve the conundrum through independent sporadic criticism sessions with the professor. Such an environment contradicts the collectivity that comprises a studio dynamic and fails to construct a reliable platform that speaks the clear voice that should resonate with everyone involved.

The challenge that seems to never get easier is that certain commonly used words in our dialogue with students are overtly ambiguous. Words such as *idea, concept, craft,* or *sketch,* have fallen victim to cliché. They linger in our vocabulary although we have lost the ability to communicate their essence. In the face of ambiguity, communication may lack substance, students lack attention, and comprehension is less than optimal.

IDEA ≠ DESIGN

Idea and concept are some of the most common terms in a design vocabulary and are usually used interchangeably. They are referred to as thoughtful representations of a design solution or a possible course of action. Many books have been published with the intention of displaying the so-called design ideas (i.e., The Big Book of Design Ideas, by David Carter) and offering the "inspiration" to other designers as their objective.[1] Most are mere collections of finished works (logos, brochures, posters, book-covers, etc.),

disguising the actual design activity or challenges overcome in the process with appealing conclusions. The problem with such publications is that they present the search for ideas as being fundamental to design activity. If a similar perception of the practice is presented in the academic studio, students are likely to understand the identification of ideas as a fundamental aspect of design. In turn, process is misinterpreted to mean the realization of ideas, rather than a dynamic, back-and-forth play between thinking and doing, between familiar and unfamiliar territory.

Entitled Make/Think, the 2009 AIGA Design Conference in Memphis based its theme on the important dialectic between consideration and fabrication. The clever formulation separating the two terms with a slash reveals its perplexed relationship. How is this relationship defined? Are they to be interpreted as two separate terms? Are they complimentary? Does the proximity suggest the two activities are interchangeable, synonymous or simultaneous?

We argue that any distinction between the two can only be described as the difference between physical activity and physical inactivity with a cerebral consistency. Design is the expression of a rhythm between physical engagement and the reflection thereof. It is always a thoughtful endeavor as it uses as many facets of our humanity as are accessible at any given time. In her article for the Guardian, Fiona MacCarthy praised Richard Sennett's "brilliance in relating the past to the present," and showing how the satisfactions of physical making were "a necessary part of being human."[2] Doing requires a sensual attention that cannot be segregated from the mindfulness we call thinking. We think with our hands. A designer does not act mindlessly as design cannot happen in the absence of sensibility.

We are concerned with the distinction between thinking and doing because we expect both activities to occur simultaneously in our academic design studios. To do so, however, requires a rigorous education, an open mind and a curious demeanor. Through active play, the designer reveals or conceals the relationships between elements and formats. Arrival at a decision is a confrontation between the static nature of form imbued with specific quality/character and the dynamic nature of design activity. Such a perspective acknowledges the nature of design process as an intervention, an interruption of conditions that would otherwise be considered complete. With the aid of a clearly articulated design studio vocabulary, the design student eventually comes to realize that design activity guides even the smallest of interventions; calls into question every assumption, precondition, prejudice or a priori judgment; and places the responsibility to manifest form solely on the shoulders of the designer.[3]

GOOD CRAFT ≠ NEAT WORK

For a design student, the mention of craft comes with a loaded message. Craft is often misused to describe neatness, accuracy or precision, as in a well-cut edge, or highly refined surface. In addition, our global society has been inundated with the likes of coffee mugs, jewelry and macramé from events in the mall and weekend craft shows. On the surface there is a feeling that craft has something to do with a hobby of making with the stereotypically familiar craft materials such as clay, wood, wool, etc. We associate craft with its heritage of useful handmade artifacts. In his book The Craftsman,[4] Richard Sennett redefines craft as anything one does to the best of her ability, giving craft a status that is accessible to anybody with the proper attitude. For Sennett, craftsmanship is "an enduring, basic human impulse, the desire to do a job well for its own sake." Ibid., 172. Such attitude is healthy not only for a designer but, more importantly, for a learner, to whom craft is a useful way of thinking in the design studio.-

Internationally renowned calligrapher Khalid Al Jallaf, in a lecture to design students at the American University of Sharjah in April 2010, explained his beliefs about the prerequisites of calligraphy. He described a preparation for the activity that was not necessarily about fine-tuning one's abilities or experiences, but

rather a mental preparedness meant to privilege the craftsman. The ritual is not a routine or extension of the activity. It is as if one must earn the right to engage the activity. He left the audience with the impression that craft is a life for those willing to devote fullness to an endeavor, to surrender cliché and to approach the task with a transcendent purpose. It is not a form of employment or product that satiates the craftsman. She is involved because the vantage point of a craftsman is ripe for maintaining an understanding of one's humanity.

Thousands of hours are invested to hone the skills necessary to gather the confidence that results in craft. Good work takes time. Sennett suggests that 10,000 hours is a reasonable estimate of the time needed to become a skilled carpenter or musician.[5] It involves contact with material and this physical relationship is, he insists, a necessary part of being human. Craftwork roots us in material reality, teaches us that making errors and overcoming resistance is not only the way to improve but also the way to secure deep inner satisfaction, to earn respect and self-worth.

SKETCHING ≠ DESIGNING

"This is only a sketch," says the student in defense of work that lacks clarity. The term sketch commonly refers to an unfinished drawing or a rough representation of a designer's idea. Teachers often instruct students to create sketches of ideas that they may later turn into finished work. Often students present a range of various options from which one is chosen to pursue. In this sense, a sketch is understood as the process of generating ideas, after which comes the process of selection and production. Again, the activities of thinking and making are described as separate, rather than integrated. Furthermore, a sketch, as an unfinished drawing, suggests that there exists a finished piece of work and contradicts the notion that design is a process of continuous discovery and iteration.

The argument about sketching should not be confused with drawing. It is of course clear that drawing is an essential activity as it provides the designer an ability to observe her environment as well as expand the confines of her mind. It is also clear that drawing is a useful method of studying formal relationships that may inform designers' decisions in the design process. Other similarly useful activities may include operational and communicative procedures such as diagramming, measuring and testing materials, pushing the half-baked idea into the realm of sustenance.

COMFORTABLE WITH UNCERTAINTY

The design process is a learning endeavor because its result becomes valuable as it differs from its point of departure. An idea should be understood as only the beginning of a process rather than being a target. The designed conclusion must be different than its conception. If not, there evidently was no process and, consequently, no design.[6] The studio is an environment that fosters discovery and mishap over strategy and intention. It values the means over the end and the journey over the destination.

Paul Rand discusses the importance of communication between students and professors in the 1996 interview-turned-book Conversations With Students, by Michael Kroeger. He says that professors must "define terms"[7] with their students—even questions as basic as "What is Design?" The same is true for every moment of the educational process. The professor is responsible for consistently defining criteria for any discussion or critique. Spontaneous trains of design conversation are welcome, but in the spirit of education, clear intentions keep the discussion focused on a manageable set of issues.

It is usually the most common and redundantly used terms that require the most attention to keep us all from losing track of that which we are doing. Terms like idea or concept should come with a working

definition to sustain the solidarity. An idea should be understood as being only an initial thought, intention or simply raw content. As such, a professor could be free to distribute a never-ending stream of ideas relieving the student of the anxiety associated with ideation. It becomes the student's responsibility then to do something with the distributed ideas. It is actually the content, or subject matter given to the student as a project definition that is the idea. Rand explains it as follows: "Design is the manipulation of form and content… Content is the idea, or subject matter. Form is what you do with this idea." Ibid., 32.

CASE STUDIES

Design studio instruction should either intentionally avoid using certain words due to their interpretive looseness or insure they come with a working definition. Alternatively, in our studios we often make up our own words that stand as markers for discussing important studio content. In the Foundations studio, for example, we maintain a semester-long book project that includes writing, drawing and collage—a place to practice composition and spontaneous combustion. We call our format an A5 book, [figures 3-4] based on its size, and it is an opportunity for students to prove their sense of responsibility by doing something without a specific prescription from the professor.

As one of the main objectives and criteria for experiencing a design process, we coined the term *density* to help us determine if enough effort has been invested in the work so as not to abandon the adventure prematurely. *Density* is a tool for measuring energy invested and opportunity experienced. If the process does not yield *density* then there are options available that have not yet been exhausted. *Density* is important because as a student learns how to be a designer, she must understand the importance of persistence and longevity of the design process. *Density* is materially and hierarchically evident, but does not necessarily refer to the visual or material qualities of work. It refers rather to the complexity of decisions and challenges the student negotiates in the process.

We rely on the fictitious term *finishedness* to help our students discuss the extent to which they have pushed the process in terms of product. We relate the degree of *finishedness* to the early sculpture work of Michelangelo Buonarroti and the effort to match or surpass nature. The lesson is an investment in being attentive, resulting in seeing and the discovery of qualities we previously did not know existed.

While avoiding problematic design-speak, it is possible to introduce words not limited by cliché dictionary definitions. Brian does a series of exercises with students to perform what he calls *excavations*. [figures 5-7] The activities are graphic in nature and entail editing an excessively dense set of information to find order among the apparent chaos. Time spent *excavating* is an experience in surrendering intentions to the direction of process allowing the process to guide the designer rather than imposing a will that might contradict discovery. By the end of the semester students have been so involved with the *excavation* activity, they think it belongs to the normative family of design principles, when in reality it is only a term invented to describe an activity of filtering information in search of discovery and clarity. [figures 8-11]

In a third-year visual communication studio, Amir introduces a semester-long project entitled *Visible Signs* for which students collect and document objects from their immediate visual environment. [figures 12-14] For each documented object the task is to extract a list of potential meanings for each object. The list of interpretations is intended to extend beyond the literal to also include connotative and associative qualities of the objects. Most students use photography as a documentation method, but may also collect and include elements from magazines, newspapers, TV-stills or related sources. The final outcome of this project is an A5-size book that contains image documents presented with a list of semantic interpretations. The goal is not to simply generate as many examples as possible but to seek and document compelling examples of signs that communicate complex or even conflicting sets of ideas. In the process, students gain awareness

of the way signs operate within their visual environment. They are encouraged to develop extensive lists of words without concern for absolute accuracy of interpretation. The exercise is a lesson in the flexible nature of meaning. This returns to the basic lesson that design decisions are never right or wrong, but simply closer or further from communicative clarity. Listing connotations and associations is a way for students to seek their own limits in terms of interpretative skill. It demands the objectivity of observation and also the subjectivity of imagination.[8]

CONCLUSION

As previously mentioned, ideas and access to their multiplicity are overrated. The intention of a designer is to make iterative adjustments… for the brilliant ideas to be overcome by exposure to the time occupied in a design process. It is our obligation as studio professors to provide our design students with an adequate amount of time for the process to affect and direct ideas. It is also our responsibility to provide students with a clearly defined agenda so their search occurs in a reasonably limited amount of space. We persistently iterate, literate and reiterate the objectives to keep the crew moving in a productive direction.

The dynamic between the professor and the students is constantly in flux, a persistent rhythm avoiding stasis. The rhythm oscillates through theory, criticism, discussion, debate, action, reaction, manipulation, technique—a consistent dialogue for both the mind and the body. Reliance on the two very human attributes is a natural energy source for everyone involved. In a 1981 Black Uhuru song entitled Utterance, Michael Rose states, "it's not what you do, it's how you do it."[9] Such a chorus could be a credo for an academic design studio. Learning how to process ideas defines the activities of an academic design studio. School is not only a place to learn about design, but also a place to learn how to design.   –

ENDNOTES

[1]Carter, David E. The Big Book of Design Ideas. New York, NY: HarperCollins Publishers Inc, 2003. Print.

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[3]Berbic, Amir, and Roderick Grant. "The New Relevance of Basel Basics." Proc. of 24th National Conference on Beginning Design Student, Georgia Institute of Technology, Atlanta. 2008. Print.

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[8]Berbic, Amir, and Roderick Grant. "Communication For Fugitive Living." Proc. of 2009 Icograda World World Design Congress: Education Conference, Beijing. Print.

[9]Rose, Michael. "Utterance." Red. Black Uhuru. Rec. 15 Dec. 2008. UMC, 2008. CD.

1

2

3

4

7

12

Coke

Drink	Competition	Brand	Commercial
Liquid	Pepsi	Identity	Consumption
Thirst	Conflict	Distinctive	Advertisements
Cold	Strength	Famous	Profits
Refresh	Harm	Celebrity	Design
Ice	Controversy	Popular	Media
Summer	Difficulties	Expensive	Demand
Sweet	Business	Quality	Offers
Delicious	Loyalty		Public

13

cake

slice
knife
piece
separate
dislocate
discontinue
use
reduce

icing
whip cream
soft
white
additive
design
beatify
appealing

carbs
fat
calories
diet
treadmill
self resentment
work out
figure
skinny
obesity

kids
mess
trash
active
random
vibrant
toys
play
game
cute
funny

mother
bake
love
care
oven
chef
morning
layers

sweet
sugar
chocolate
sprinkles
taste
senses
pleasure
crave

birthday
beginning
breathe
party
happy
celebrate
candles
gift
wish
friends
remember
yearly
day
introduction
baby
female
male
blue
pink
hospital
nurse
doctor
date

ingredients
eggs
dough
fruits
mix
combination
measurements
specification

14

Rules
Restrictions
Organise
Respect
Color Code
Danger
Stop
Radar

OBJECTS
Landscape
Sun
Camel
Fence
Bushes
Sand
Sticks
Dry plants
Desert

METAPHOR
Sahara
Transportation
Nomads
Safari
Oasis
Obsolete
meat
Camel races
Primitive life style
Mirage

EMOTION
Harsh life
Nostalgic
Uncomfortable
Hot temperature
Direness
Exhaustion

FORM
Grid
Lines
Cluster of bushes

COLOR
Green
Yellow
Tan
Brown

TEXTURE/ MATERIAL
Fur
Smooth iron
Sand texture
Sand grains

The Studio-based Learning Model: The Premier Environment for Epistemology

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Abstract

Online education's growth is represented by greater course offerings as well as greater diversity in discipline programs. Today, programs once thought ill-suited for online delivery are now thriving in this environment. This trend presents many challenges for academia, namely, ensuring instructional quality remains high in support of its institution's educational mission. Experience Content Design (ECD) represents an instructional model that meet this challenge, as it reflects the growth in student-centered and studio-based learning philosophies. In doing so, ECD provides fertile ground for developing learning models that cross discipline-specific boundaries and elevating the importance of reflective and critical problem solving. This paper explains the theoretical framework for ECD, as well as defines the instructional phases associated with its construction. Preliminary results suggest ECD supports the development of strategies for authentic knowledge construction, critical in preparing learners for the "Knowledge Age."

Introduction

Online academic communities continue to grapple with problems inherent in ensuring effective pedagogical outcomes via the use of computer–based technologies (CBT). For various reasons, certain academic areas have received greater attention in researching how these technologies might best align with learning model, thus ensuring broader and faster growth online. Studio-based design curriculum (architecture, graphic design, interior design, advertising, etc.) is one area often missing from this research (Weaver, 2006; Bates, 2000; Hannah, 2005). This omission

The Studio-Based Learning Model: The Premier Environment for Epistemology

is reflective of online studio-based curriculum's relative newness as an empirically-based discipline, and of the fact that few studio-based scholars/practitioners have the desire for online formats. Even when examined, the foundational thinking surrounding studio-based curriculum is often co-oped and used in instructional applications outside of creative disciplines like the sciences and/or mathematics, thus leaving online studio pedagogy to rely on limited empirical research (Wolff & Geahigan 1997; Brocato & Franz, 2004; Monson, 2007; Burroughs, Brocato & Franz, 2009).

The lack in online studio research is seen as unfortunate by certain academics as it negates potential contributions that traditional studio pedagogy has to offer in problem/project based learning methodologies, which in its structure includes reflective analysis and authentic knowledge construction, skills greatly encouraged in the online format. These contributions of studio-based learning become even more apparent when compared to lecture based environments, or when aligned with constructivist learning environments (See Table 1). Moreover, the development of specific instructional/learning models like those promoting systematic structures for nonlinear and critical thinking - processes commonly used in studio-based learning - align directly with the broader industry's need for nimble, creative thinkers. It is this need to develop nimble creativity that defines education's challenge for the 21st century and beyond (Trilling, 2005). Addressing the challenge of developing more empirically-based learning/instructional methods for online studio-based programs is especially significant with these programs' steady migration into online learning environments.

Table 1. Comparison of Learner/**Studio**/Lecture Based Learning Environments

Learning Environment	Learner-Based	**Studio-Based**	Teacher-Based
Type of Learning	Problem Solving	**Project/Problem Centered**	Task-Based
Control of Learning	Constructed/Authentic	**Constructed/Authentic**	Content Directed
Focus of Learning	Multi/Broad/ Diverse	**Constructed/Authentic**	Canonical
Grouping for Learning	Multi perspective/ Diverse	**Socially Constructed**	Individual
Interaction for Learning	Collaborative	**Collaborative**	Independent
Results from the Learning	Authentic/Discovery	**Hand-on Discovery**	Content Driven

Note: Adapted from Cognitive Education (Reigeluth & Moore, 1999). In Instructional Designs Theories and Models: A new paradigm of instructional theory (eds. Reigeluth, 1999).

Purpose

The broadening of more disciplines online creates a need for varied instructional/learning models that better support these disciplines' pedagogical philosophies, thus offering new opportunities and challenges. Addressing these challenges will require new models capable of harnessing the potential found in curricula like those in studio disciplines, while these same models define structures broadly applicable to a wide array of academia/training disciplines. These models should offer sentiments like those concerned with ensuring the proper integration of technology with the "scholarship of teaching" (Weaver, Robbie & Borland, 2008, p. 760). Additionally, these models should support contemporary thinking on teaching environments that are nonlinear and flexible (Kemp 1985; Ping Lim 2008) and reward investment in "educational practices" beyond mere "teaching with technology" (p. 98).

Experienced Content Design offers just such a classroom-oriented instructional design (ID) model. Building on work of theorist like David Kolb (1984) and his experiential learning theory (ELT), the ECD model incorporates the philosophy and structure of studio-based learning as an

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authentic knowledge generator, while employing skills associated with reflective analysis and critical thinking as sources for stimulating intrinsic value in problem resolution. Similarities to models like ELT, ASSURE and ADDIE, which focus on analysis and design, are contrasted by ECD placing even greater emphasis on developing targeted content options for application, and on personalizing user experience through reflection as resources for learning value, and the importance of innovative through creative exploration. Within both ECD and ASSURE, attention is given to clarifying problem parameters through construction of objective setting, although ECD offerings reconstruction as a means of personalization and problem identification. Figure 1 illustrates similarities between these noted instructional design models and the experienced design model.

Table 2. Comparisons of Instructional Design Components

Instructional Phase	ECD	ASSURE	ADDIE
One	**Comparative Analysis**	Analysis Learner	Analysis
Two	**Inspiration Exploration**	State Objective	Design
Three	**Problem Construction**	Select Method/Media	Develop
Four	**Value Enhancement**	Utilize Media/Materials	Implement
Five	**Reflective Analysis**	Require learner input	Evaluate
Six		Evaluate/Refine	

Note: ECD includes refinements opportunities to occur as a part of value enhancement and the reflective analysis process.

Background

As suggested, studio-based education offers a fertile laboratory for creating new instructional models, as its history can be traced back to the apprentice systems of the Middle Ages, specifically to the Beaux Arts system of the 18th century. As for its integration into formal curriculum, this event can be traced to the Bauhaus movement of 19th century Europe (Lackney, 1999). In the Bauhaus curriculum, emphasis was placed on theoretical and practical problem solving, and also embraced the cutting edge technologies of the day in printing and

design production. This educational intersection of creativity and technology was modeled for decades in institutions of learning throughout the world, and it remains a foundational philosophy for some programs even today. One need only look at the growth trends in online academic programs to see why this is relevant to online learning. The relevance shows the potential for technology's intersection with creativity. This combine reflects a core principle of Bauhaus principles and was referred to as the meeting of,

> "Werkmeister" (the skilled craft expert with a deep understanding of materials and production techniques, who ultimately produces the art piece) and the "Formmeister" (the conceptual expert who comes up with the idea and the concept of the art" (Fassnacht, para 2, 2009).

The following statistics reported in the Sloan-C Foundation 2009 survey highlight national higher education's online growth trends as of 2008. These trends are reflected in the growth of such institutions as the Savannah College of Art and Design, Art Institutes Online and American Intercontinental University. The following statistics are from the Sloan-C Foundation 2009 survey:

- The number of students taking courses online was 4.6 million during the 2008 reporting period; a nearly 17percent increase over the number reported the previous year.
- The 17 percent growth rate for online enrollments far exceeds the 1.2 percent growth rate of the overall higher education student population.
- More than one in four of all U.S. higher education students now take at least one online course per year (Sloan-C, 2009, p.1).

As more institutions of higher learning develop either partial or fully online-based programs, studio design education will inevitably receive its share of students, and therefore developing sound pedagogy through new instructional/learning tools and theories must be given greater

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priority. Additionally, these instructional tools must respond to systemic changes in thinking by industry about creativity education.

An Imperative for Shifting Focus in Delivery of Design Education

At the 2009 AIGA design conference "Make/Think," David Butler, vice president of global design at The Coca-Cola Company, offered some rather revealing thoughts on the need for design thinking to move toward his defined this as the "Think Do" model. Butler asserted that as design continues to expand in its range and scope of knowledge, designers must shift toward greater systematic thinking that is more results-oriented. Butler stated that designers must shift their focus away from "creating ideas and instead create value" (2009 AIGA Design Conference, Make/Think).

Butler's thinking aligns with global design's focus on "experience design" for customers. This trend suggests customers are looking beyond mere slick concepts to learn how marketed items bring experience value to the consumer (Jacobson, 2000). Moreover, when applied to education Butler's this thinking reflects Locke's (1841) statement made two centuries earlier, "No man's knowledge can go beyond his experience," as it suggests the concept of "the experience" must be seen with a broad perspective in acquiring knowledge (Locke, p.56).

Studio disciplines place their major emphasis on the ability to create conceptually through problem analysis and user based surveying or alternatively, the ability to create physically through design ideation and prototyping. As a result of these processes, knowledge scaffolding is allowed to shape cognitive growth into problem resolution. By creating and offering learning environments that isolate and facilitate learner experiences more effectively, both learners and

instructors can more efficiently employ and analyze their instructional strategies. Consequently, the process of instruction benefits all stakeholders with greater value.

Discussion

In 2006, the American Institute of Graphic Arts (AIGA) and Adobe Systems Inc.© collaborated on a research project defining the skills and knowledge necessary for preparation of the 2015 graphic designer. This collaboration provided meaningful, albeit inconclusive information that is instructive for the design and delivery of studio pedagogy. This research, along with Trilling's (2005) identification of seven skills needed for the "Knowledge Age," highlighted important meaningful learning components associated with comprehensive studio education. Both studies targeted developing broad critical thinking and creativity as an underpinnings for successful learning transitions, whether within academia or moving into industry (http://docs.google.com/viewer?a=v&q=cache:qUAPkFj8THQJ:www.techlearning.com/techlearning/pdf/events/techforum/ny05/Toward_Learning_Societies.pdf+Trilling+%26+Hood,+2001&hl=en&gl=us&pid=bl&srcid=ADGEESjoiJDz_). Additionally, the AIGA/Adobe study concluded that beyond aesthetic issues, more than half the competencies needed for successful transition from academia to industry were those related to research analysis, technological tools and design cognition as impacting critical skillsets (AIGA/Adobe, 2007). The knowledge foster from these studies established what constituted necessary skills for ensured delivery of "meaningful learning" components for academia. Having said this, the question might be asked, "What is meaningful learning?" and "Why is it important to ECD?"

Understanding ECD's foundational philosophy requires the establishment of consistently aligned terminology for its application. "Meaningful learning" for example, based on Jonassen's (2000)

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description of "active, intentional, authentic, constructive and collaborative" (p. 49) learning is

an important qualifying measurement for knowledge acquisition. "Meaningful learning," as used

within constructivist theory also connotes engagement in inquiry, relational analysis (reading

and written research), and critical thinking. As a result of applying meaningfully learned content,

knowledge is authentically built with learners becoming primary architects for constructing

knowledge, while engaging more holistically in the educational paradigm. Furthermore

"meaningful learning" reinforces knowledge that is less about an instructor's physical presence

as it is about creating a learning environment that provides effective stimuli and communicative

and cognitive engagement that ensures intrinsically valuable learning. By addressing stimulation,

communication, and cognition engagement levels online, ECD combines studio and

constructivist learning concepts that encourage doing and analyzing - systematically and

critically respectively - through an interactive approach.

Within the ECD model, "experience design" as a concept focuses directly on the actions that

result in response to any design components' intrinsic value, whether product, concept or

service (Make/Think, 2009). Within the definition of experience design, both designer

(instructor) and user (learner) find their greatest value through qualities related to their pre-

presence and post-presence experiences. Consequently, repurposing the experience design

concept to online studio-based education could shift pedagogical thinking toward instructional

models that encourage higher degrees of autonomously driven, intrinsically valued, and actively

engaged. It is here where higher levels of cognitive growth are possible and the end user is

provided greater "experienced value."

Roles of Reflection and Critical Thinking Within ECD

With the ECD model, cognitive stimulation factors within the learning environment played a major role in shaping its structure. Areas of particular significance were those associated with reflective thinking and critical thinking as tools for authentic knowledge construction (Rogers, 2001; Boud, Keogh and Walker, 1985; Langer, 1989; Loughran, 1996; Mezirow, 1991; and Seibert and Daudelin, 1999). Although some differences existed among these leading authorities with respect to specific terminology and exact definitions used, there was nonetheless areas of great commonality in defining the concepts of reflective thinking and critical thinking (Rogers, 2001). These commonalities illustrate how significant these terms are in the learning process, as well as their interrelated important relationship.

Reflective thinking, also called "reflection," and critical thinking were identified earlier as critical components in mastering contemporary skills for the knowledge age in both academia and industry. According to Choy and Cheah (2009), "critical thinking involved higher order thinking like reflection and appraisals" (p. 201). Furthermore, according to Rogers (2001), "Reflection provides a vehicle to shape and refine primary experiences into meaningful learning" (p. 52). Reflection in teaching and learning represents cognitive and affective processes of individual engagement; it often begins with an unusual or perplexing experience; involves self-examination of one's responses, beliefs, and premises; and ultimately produces the incorporation of new understandings into one's meaning perspectives (Roger 2001).

Seibert and Daudelin's (1999), in Rogers (2001) suggest that for contextual reflection to be achieved as a byproduct of the environment, the environment must provide conditions conducive to reflection such as "autonomy, feedback, access and connection to others, stimulation by others, and significant performance demands" and if not present, "reflection is

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unlikely to occur" (p. 43). In a review of research on reflective thought (referred to as reflective analysis) as applied to ECD, several major points are noted, namely: (a) reflection has multi-timed opportunities to occur, each equally valuable to the learner depending on the problem, both contemporaneous and retrospective; (b) reflection at its inception need not be comfortable, but rather it should challenge one to focus on inquiry; (c) reflection should structure personal experiences to be cultivated and valued as a critical learning component; and, (d) reflecters should be given degrees of autonomous yet socially supported opportunities, but in return, they must demonstrate an openness and willingness to engage.

As for critical thinking in ECD, the ECD model relies heavily on processes and concepts inherent to the function of critical thinking. In the studio, critical thinking and reflection are necessary components of active problem solving and creativity, and therefore are also necessary components of critical learning and teaching tools. Black (2005) suggests that critical thinking represents an individual's deconstructing and reconstructing of his thought processes that requires the use of analytical standards like logic, clarity, honesty, relevance, and precision. These analytical standards determine the outcome of the critical thinking. The challenge for instructional designers and teachers is to create environments where stimuli exist for critical thinking to occur. ECD's problem/project based structure provides an assignment development construct that is supportive of multiphase instruction, with either actual or theoretical modeled industry based problems in mind. Therefore instruction is well suited to appropriately engage learners. As a result, complex thinking and multilevel questioning are requirements for learner success, as well as synthesis and evaluation of those thoughts. According to Duron and Waugh (2006), "Critical thinkers raise vital questions and problems, formulate them clearly, gather and assess relevant information, use abstract ideas, think open-mindedly, and communicate

effectively with others" (p. 160).

Figure 1. Revised Bloom Taxonomy
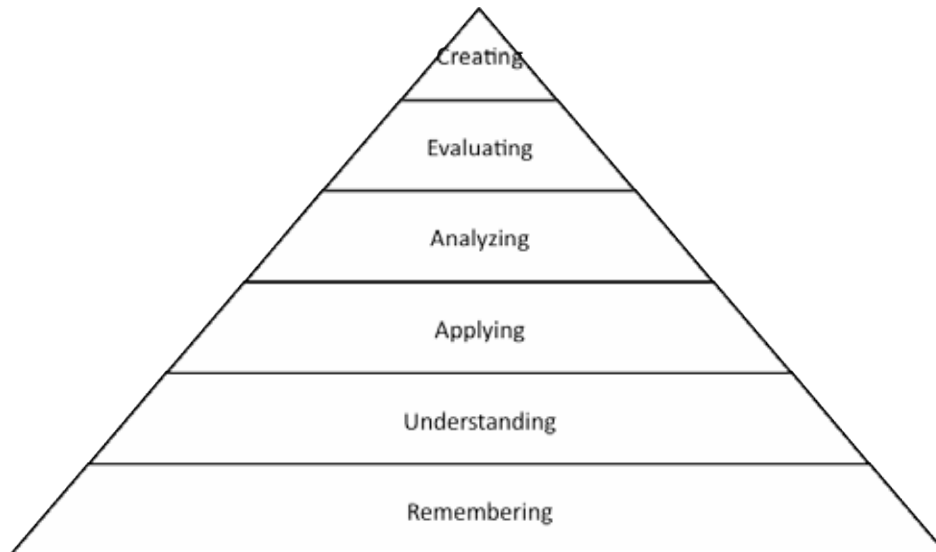
Note: Anderson and Krathwol (2001) revised Bloom (1956) Taxonomy as an update for 21st century teching and learning.

Each of these processes reflects cognitive growth opportunities identified in Anderson and

Krathwol's (2001) revised Bloom taxonomy (RBT), as higher level thinking levels. Anderson and

Krathwol's (2001) revision of Bloom's (1956) taxonomy is representative of "cognitive

psychologists, curriculum theorists and instructional researchers, and testing and assessment

specialists" (p. xxviii).

Revised Bloom Taxonomy, with its scaffolded level of cognitive engagement, provides a source

of contextual importance for the ECD model. ECD, like RBT, relies on knowledge and experience

scaffolding, while ECD gives its greatest attention to its latter three stages - analyzing,

evaluating, and creating. These three stages serve as multiple entry points to contemporaneous

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and retrospective reflection and critical thinking. Vital to all three of these stages is the quality

of questioning generated by the student(s) through analysis and reflection. It has even been

suggested that although many instructional strategies can impact student thinking, questions

have the greatest impact and student thinking levels are directly proportional to question

quality (Duron, Limbach, and Waugh. 2006; Clasen and Bonk, 1990). For this reason,

convergent questioning, with its ability to bring clarity to or "converge" multiple concepts

concisely is embraced. Likewise, divergent questioning, with its ability to broaden possibilities

of multiple alternatives, is also embraced. So with expectations that learners analyze, explore,

reflect, synthesize and evaluate, ECD embraces both convergent and divergent

questioning/development as supportive methods supportive to instruction design and teaching.

TDT and Learning at a Distance Within ECD

Created for online application, ECD theoretically approaches distance as predominately

pedagogical, rather than physical or technological, as related to design and user experience.

Often instructional design and user experience are seen as problems driven by technological

concerns. Although technology certainly plays a role in learning and instruction, new thinking

suggests greater pedagogical focus for problem resolution is critical to innovation. This shifting

thought "should be driven by people and pedagogical concepts that apply new technological

developments in a meaningful way for the purpose of adding value to teaching and learning"

(Zawacki-Richter, 2009, p.7). It is for this reason that creating instructional models that are

grounded in appropriate theoretical constructs and principles should be encouraged. In

developing ECD, Moore's transactional distance theory offered just such a construct.

Moore's Transactional Distance Theory (TDT) defines distance as a perceptional rather than physical measurement that supports authentic discovery and serves as the catalyst for systematically developing engaging discourse. Having its conceptual origin assigned to Dewey's 20th century thinking, the term "transactional" connoted interaction among the environments, the individual, and the patterns of situational behavior, with autonomy playing a significant role (Moore, 2001). At its core, TDT suggest that as dialogue within an online course increases, structural needs for the course decreases, and as structure decreases dialogue increases to keep a stable structural system (Moore and Kearsley, 1996). The balance of autonomy, dialogue and structure levels online, while encouraging personal knowledge construction, presents various instructional challenges, namely the relevance of social learning. Even with recent online learning theories emphasizing more collaborative learning strategies, various theorists continue to promote TDT's beneficial guidance and compatibility to social learning theories (Kang & Gyorke, 2008).

TDT offers a foundation for constructing ideas on managing the distance between teacher and learner understanding. This TDT foundation, described as "invaluable in guiding the complex practice of a rational process such as teaching and learning at a distance," offers the EDC model guidance (Garrison, 2000, p.3). Dialogue, structure and learner's autonomy comprise the three variables included within the equation. Thinking related to these variables is incorporated within ECD's instructional strategies and forms the bases for sound pedagogical relationships between learners and teachers. Jung (2001) suggested that within an online environment, "the dialogue variable include academic, collaborative and interpersonal interaction; while the structure variables include content expandability, content adaptability, and visual layout; and learning variables include learner autonomy and collaboration" (Moore, 2007, p.97).

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TDT with its variables (dialogue, structure and learner autonomy) help frame an important relationship between teacher and learner for the ECD model. For example structure, as defined in TDT, is a by-product of course design that reflects a chosen communication media, either contextual or visual or both, along with that medium's rigidity and ability to accommodate individual learners' needs. Within ECD's "structure" learners' flexibility to vary media choices are determined by instructional needs of the learning outcomes. Additionally, the ECD format is adaptability for broad discipline application, requiring nonlinear thinking in some cases. So, media flexibility, counteracted by a unified group of selection categories that aligns thinking processes, does exist.

Dialogue, within TDT and ECD, is highlighted for its distinct contribution to online learning and instruction. TDT purports dialogue is interaction between learner and teacher that is purposeful, constructive and valued by both parties. The qualifiers used in defining dialogue as a condition and an action is significant and is also characterized in ECD. The ECD model gives great attention to the purpose and importance of dialogue as a catalyst for the state of ongoing communications within the problem solving process. Whether internal through personal reflection and critical analysis, or external through instructional questioning, dialogue does much in establishing the cognitive paradigm. In each case, dialogue possesses significant meaning, and therefore it must be considered within the variables affecting learning through physical distance such as, media, language subject, group size, and instructional philosophy (Moore, 1997).

Autonomy, which acknowledges the value of interpersonal thought and self-directedness, directly reflects motivation and engagement levels. Research varies on the various aspects of learner reflection, motivation and engagement levels using electronic learning media, however, quality of "ownership" through personal interaction of reflective analysis has shown more uniformity. For example, Adams et al (2008) talks of stimulation as a learning instrument, " can be highly engaging and educationally effective" if student interaction is directed by their own curiosity (p. 397). It must be acknowledged that individual involvement determines the interaction of the elements of reflection, motivation and engagement and thus will vary greatly along the instructional continuum. Through its phased opportunities for self-analysis and varied personal investigations, ECD, when applied systematically cultivates autonomous activities while it offers guidance in creating effective online instruction.

The Experienced Content Design Model

ECD was developed by Dr. Quentin Currie for use within an online graduate studio course, GRDS 760 – Poster Design at Savannah College of Art and Design.[1] Conceived as an instructional model, ECD offers structure guidance in the creation of multi-phased, complex problems creation, which also promotes active and authentic learning opportunities. Although not yet empirically analyzed, anecdotal evidence from project submission and reflective surveys suggest positive outcomes based on Dr. Currie's assessment. Further research is needed using empirically appropriate methods. The following sections detail ECD's structure and procedure, and provide descriptive summaries of each instructional phase's function. Using both contemporaneous and retrospective questioning, learners model methods for applying critical thinking and reflective analysis in the service of heightened level problem solving. It should also

[1] In developing ECD, Dr. Currie was provided editorial and technical assistance from the college's E-learning staff, lead by Derrick Sterling.

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be noted that the ECD model was recently applied within a senior-level, on-campus studio

course (GRDS 374 Publication Design) with final assessment and commentary pending.

Figure 2. The Experienced Content Design Model
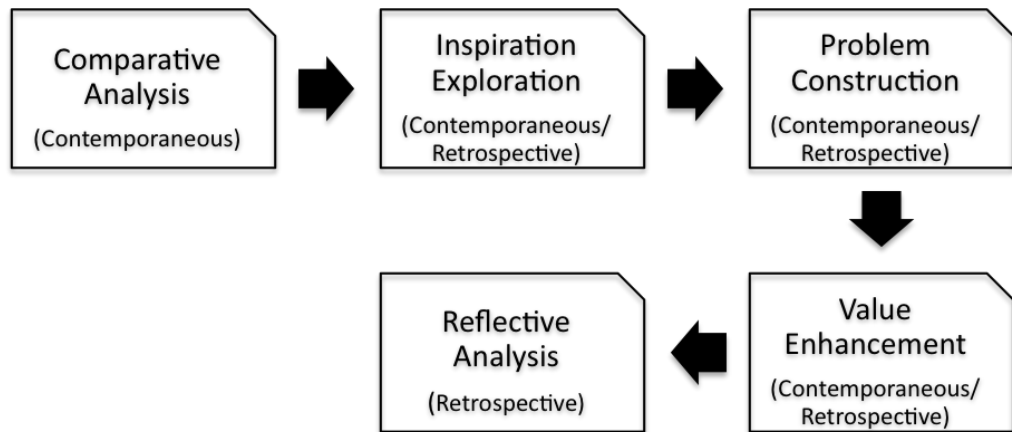
Model Design Structure

The ECD model, developed within an online graduate student course, relies heavily on existing

studio-based learning concepts, yet it emphasizes empirically grounded theoretical structures

from which learning results are viewed (Moore 1999, Mayer 2000, Jonassen 2002). ECD consists

of instructional design components: comparative analysis, innovative exploration, problem

identification and construction, value enhancement and reflective analysis. As a theoretical

construct, the ECD model offers a systematic sequence of events that offer individual and

cumulative value through each phase, thus accommodating opportunities for adjustments to be

made supporting various learning environment. Although it is this author's opinion that the

model's five phases represent meaningful learning stimulators that offer significant benefit

when scaffolded, the term "cumulative" should not be confused with "linear" as each phase

provides its own intrinsic value. In practice, the ECD model must be applied collaboratively

within the learning community, to allow better transfer of new knowledge to novel situations.

This type of interaction is the hallmark of higher order cognitive construction.

The ECD model is based on principles of authentic knowledge construction created through a

scaffolded system of comparative analysis, innovative exploration, problem construction, value

enhancement and formal reflective analysis. Although contemporaneous and retrospective

reflection processes are integrated throughout the ECD model, the formal written reflection

component is critical as it encourages more comprehensive cognitive engagement levels than

those previously identified. During formal retrospective reflection, specific questions are

considered with a focus on convergent reflective thinking. When employed, this system of

reflection builds on prior experiences, ensures exploration into new possibilities from which to

draw, provides significant verbal and visual support for establishing high benchmarks, and

documents cognitive growth throughout the decision making process (See Appendix A).

Although learner autonomy is greatly valued within the ECD model, the instructor/content

designer's retains the broad responsibilities of establishing general structure, procedure, and

goals for the assigned project, as well as employing reflective analysis for performance

evaluation. This process is identified as establishing a framework for dialogue (Moore 1999). It

is critical that this framework be kept broad enough for adequate student ownership of their

learning yet maintains the model a foundation for accomplishing stated objectives. This goal is

best achieved through the instructor/content designer building opportunities for optional

directions.

Phase One: Comparative Analysis

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Problem: Assign research driven analysis (visual/contextual) that requires comparative assessments.

Procedure: Learners (practicing professionals) select multiple works deemed either at or more advanced than their level of expertise and through written commentary, offer a comparison assessment of these works. This assessment, or comparative analysis, provides contemporaneous (or in the moment) reflection and serves as the first opportunity within the problem's structure to gain relevant topic awareness. For the learner, this process represents a formal expansion of his or her familiarity through a presentation of articulated selection criteria. The learner's presentation demonstrates the grasp of terminology and concepts. As a first phase, comparative analysis provides an opportunity for the learner to establish essential guidance criteria shaped by personal experiences related to contextual, aesthetic, and/or conceptual perceptions.

Phase Two: Inspiration Exploration

Problem: Assign expansion of skill set through new media/concept exploration.

Procedure: Thought of as the "exercise" phase with the intent of exploration and confidence building. Learners investigate lesser-known media, technique, and processes related to the problem's construction but not necessary directly associated with the project's solution. It is critical that broad exploration is allowed to take place, and that risks can be taken with little or no negative impact on assessment. This exploration process should allow divergent thoughts and questions to be asked where possibilities are only limited by available work time. There are dual goals during the inspiration exploration phase; first, to create meaningful learning through active engagement (preferably physically); and second, to broaden the learner's skills/awareness into areas previously not mastered and/or explored. Inspiration exploration

should be considered formal time to "play", innovate and investigate. Inspiration exploration is the time where authentic learning is intensified and "expectation failure", as concept associated with learning by doing theorist more comfortably takes place (Schank, Berman and Macpherson, 1999, p. 171).

Phase Three: Problem Construction

Problem: Assign deconstruction and reconstruction of stated project parameters in order to personalize learner understanding.

Procedure: In order to personalize the learning of project specifics, divergent thinking and questioning, and contemporaneous reflection are applied. Using these techniques, learners deconstruct the problem through chunking information. Research becomes a vital part of deconstruction as it adds the depth and understanding that will be necessary for reconstruction of the problem. The ECD model supports both contextual and visual research formats in helping to shape meaningful problem recognition appropriate for different learning styles.

Once deconstruction is completed, the reconstruction begins and problem components are more mentally and contextually understood. This phase within problem construction establishes personal ownership of the problem for the learner; therefore either instructor or learner may apply a structure deemed appropriate to the discipline (i.e. brief, problem statement, etc). Ultimately, the goal of problem construction is to provide insight into the learner's perspective on what concerns/criteria the learner deems critical in order to complete the problem. Dialogue and negotiations between learner and teacher are appropriate here, as authentication or "buy in" for the learner needs to be balanced with broader assignment or institutional goals.

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Nonetheless, a critical learning opportunity is presented in this phase as this dialogue offers the chance for deeper understanding of both stakeholders' assessment benchmarks.

Phase Four: Value Enhancement

Problem: Use of problem specific process and/or procedure for formal investigation, refinement and execution.

Procedure: The learner begins the process of actual problem completion using new knowledge constructed during the previous stages. The execution process will vary depending on the discipline or problem classification. Steps deemed appropriated to project resolution (i.e. conceptual, thumbnail, rough development, etc.) for the particular discipline and/or problem classification should be employed. These retrospective processes require that both divergent, and ultimately convergent thinking be utilized in order to maximize creative problem solving while meeting the project deadline. Referred to as "value enhancement," this phase is designed to offer the end-users their greatest value. Therefore, instructional development decisions must be viewed from the end-user's experience and how value is created through this ECD phase's use, exposure, awareness, etc. As was discussed earlier, this shift in thinking allows for more systematic approaches to creative problem resolution.

Phase Five: Reflective Analysis

Problem: Assign written retrospective analysis of the process/outcome.

Procedure: Learners offer, through written and verbal means, reflections that explore major learning themes on an emotional and human level, as well as on the cognitive level. Seen as the most formal and comprehensive reflection of the process, this retrospective analysis encompasses multi-leveled critical thinking with its aim to through directed and self-generated questioning - address psychological, technical, procedural and/or aesthetical issues. Most

important here is the learner's communications convey change through the lens of experienced

commentary. These changes provide essential material for further dialogue between learner

and teacher, thus ensuring additional learning and teaching opportunities. Note in this context,

however that student commentary (either survey or narrative) carry the potential for

unwarranted malicious and/or prejudicial comments, and yet, it is these emotional responses,

when properly included within the learning model, truly provide valuable glimpses into

education's ability to stimulate and change.

Conclusion

Studio based learning environments have shown promise in stimulating new learning

opportunities across various disciplines. ECD was developed as an instructional model in support

of studio-based learning strategies. Its construction is based on a multiphase format where

scaffolded knowledge is a byproduct of various user experiences. Processes key for developing

this set of experiences include convergent and divergent questioning, along with

contemporaneous and retrospective thinking. These questioning and thinking formats are

directly related to broader learning components of critical thinking and reflective analysis.

Thus far, ECD has shown good antidotal results within an online graduate level, studio based

course. Through ECD's interrelated methodology, these students improved both aesthetic

capability and awareness, along with discipline specific contextual knowledge. Although each

phase has interrelated aspects, its exact application requires the instructor's thoughtful

consideration of individual discipline, course and learner needs. Currently, student surveys

identify high satisfactory levels with course structure, opportunities for personal growth through

exploration, and learning value as a byproduct of user experience.

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Moving forward it will be important to conduct empirically based research that assess value assigned as a byproduct of user experience, as well as to apply the models structure outside studio based disciplines. Studio-based learning offers much promise as an instructional philosophy for the design, delivery and consumption of content within a variety of disciplines outside of the studio, as well as for various learning styles and levels.

Appendix A: Experienced Content Design Model (Interaction Flowchart)

Event | **Social Awareness** | **Propaganda**

	Event	Social Awareness	Propaganda
Format/Structure	Single	Single | Series	Single | Series
Media/Subject Focus	Illustration	Typography	Photography
Cognitve Expansion	Comparative Analysis	Comparative Analysis	Comparative Analysis
Low/Limited Risk Investigation	Innovative Exploration (traditional/digital/experimental)	Innovative Exploration (formal/experimental)	Innovative Exploration (technique/experimental)
Negotiated Assessment Criteria	Problem ID & Construction (Problem parameters/ creative brief]	Problem ID & Construction (Problem parameters/ creative brief]	Problem ID & Construction (Problem parameters/ creative brief]
Product/Process Development	Value Enhancement (thumbnailing, computer roughs)	Value Enhancement (thumbnailing, computer roughs)	Value Enhancement (thumbnailing, comp roughs]
Formal Interpersonal Development	Reflective Analysis	Reflective Analysis	Reflective Analysis

COLLABORATIVE INTERACTION
PEER-to-PEER FEEDBACK (CRITIQUES)

FACULTY MENTORING (DIRECTING, QUESTIONING, ETC.)

Other Relevant Learning
Technological Perspectives
Historical Perspectives
Cultural Perspectives

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An Investigation of Assessment Practices: Project-based Learning in Higher Education Graphic Design

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Abstract

Employing effective assessment methods is essential in establishing equal opportunities for all learners within educational environments to receive valid and reliable feedback concerning their academic achievements. Well-structured assessment methods not only address questions about student learning, but also can provide feedback for instructional staff to adjust the procedures they employ. Projects that call for incorporating higher-order, thinking skills in developing solutions to ill-defined problems must be assessed using methods that reflect an appreciation and understanding of the complexity of the problem and the solution. Learners must be provided with the opportunity to develop solutions to educational questions without the threat of being judged by an assessment system that lacks validity and reliability.

This presentation explains the procedures involved in a study employing assessors throughout the country as they applied a non-rubric assessment method and a rubric assessment method to simple typography-based projects. The findings from the study are statistically analyzed, and significant differences are displayed. Subjects were viewed through four different demographic and academic variables to make comparisons and possibly establish divisional differences.

A discussion of the findings, how they may be applied in the classroom, and the advantages of effective project-based assessments to all the stakeholders in design educational environments will be emphasized. Conclusions are drawn and recommendations are made as to developing effective classroom assessments.

Author's Note

The following paper is an edited version of a research study entitled: AN INVESTIGATION OF ASSESSMENT PRACTICES: PROJECT-BASED LEARNING IN HIGHER EDUCATION GRAPHIC DESIGN AT PROPRIETARY INSTITUTIONS. For purposes of brevity the "Proprietary Institutions" was eliminated for the conference presentation, this paper includes that element.

Introduction

Employing effective assessment methods is essential in establishing equal opportunities for all learners within educational environments to receive valid and reliable information concerning their academic achievements. Well-structured assessment methods not only address questions about student learning, but also can provide feedback for instructional staff to adjust the procedures they employ (Maki, 2004). Educational questions that are posed at the lower end of the cognitive scale can be framed to have solutions with objective answers, right or wrong, and can be assessed using traditional subjective free methods (Duch & Groh, 2001; McMillan, 2004). Projects that call for incorporating higher-order, thinking skills in developing solutions to ill-defined problems must be assessed using methods that reflect an appreciation and understanding of the complexity of the problem and the solution (Huba & Freed, 2000). Learners must be provided with the opportunity to develop solutions to educational questions without the threat of being judged by an assessment system that lacks validity and reliability.

The discipline of Graphic Design is one area within the Applied Visual Arts and, as part of the arts, relies upon the use of problems or projects to instruct within the discipline, as well as to assess students' degree of success (Duch, Groh, & Allen, 2001). Distinguishing between problem-based learning and project-based learning in an educational environment can be confusing because the two terms overlap in use of instructional strategies and learner outcomes (Esch, 2000). For the purpose of this study, the problem-based learning and project-based learning will be treated as synonymous terms (Duch, Groh, & Allen, 2001), with the focus directed towards their similarities. Throughout this investigation, the term "project-based learning" will be used, but the concepts that exist can be represented by

either term.

Project-based learning is an educational approach that places greater demands upon learners as they engage in activities that require higher-order thinking skills to solve authentic problems through well-structured methods of inquiry (Buck Institute for Education, 2003). The elements and principles within the discipline of Graphic Design are typical of a basic structure used to develop a project-based learning curriculum. When educational assignments reach the level of cognitive demand that exists in project-based learning, they require methods of assessment that attain the level of authenticity of the project. For project-based learning to have its full impact on the learners, the design of the assessment must be a key ingredient of the process.

Problem Statement

Assessment is far more than just the assignment of a grade to a project; it is part of a learner's educational development (Astin, 1993), and how an institution implements and values assessment reflects its values (Astin, 1993). Methods of assessment vary between institutions, courses, and projects, as well as within institutions, courses, and projects. Reasons for these variances may range from the cognitive demands of a project, to the degree of rigor imposed by the evaluator, to the achievement expectations of learners by the evaluators. Because assessment is an integral part of learning, assessment strategies must be developed to be more than just assigning a summative grade to a solution (Earl, 2003). Rich, content intense assessment instruments can serve the learner as a guide through the creative process as well as an evaluation of the success of a solution.

The essence of the graphic design discipline is to present students with projects that are ill-structured or ill-defined. Students then face the goal of establishing and defending reasonable solutions to these projects (Huba & Freed, 2000). The simplified natures of many assessment strategies are ineffective in evaluating this ill-defined character of the projects (Huba & Freed, 2000). The mere assignment of grades does not effectively assess the products, presentations, and/or performances that are evident in these resolutions (Buck Institute for Education, 2003), and evaluative criteria contained in most scoring instruments lacks the necessary rigor to effectively assess the complexity of performances solutions (Popham, 2005).

Theoretical Framework

The use of Project-Based Learning (PBL) procedures in education settings encourages learners to explore well-posed questions to find solutions through investigation and collaboration (Frank & Barzilai, 2004). Through PBL, students develop deeper understanding of content and process; use collaborative methods to reach solutions; become more responsible learners; and, engage in a wide-range of learning tasks (Krajcik, Czerniak & Berger, 1999). The acquisition of knowledge of both content and process are central to the success of students in PBL (Buck Institute for Education, 2003; Krajcik, Czerniak & Berger, 1999), and this dual responsibility in learning reinforces the quality and depth of learning. The use of PBL is foundational to the discipline of graphic design, as is the method used throughout a curriculum to develop the educational tasks used by the learners to acquire the knowledge and skills set forth an inventory of generic program outcomes (see Appendix A).

Graphic design is the art, as well as the science, of communicating to an audience of one person to the entire world as a community (Resnick, 2003). A graphic design product is developed to inform, educate, influence, and/or persuade while providing a memorable visual experience (Resnick, 2003; White, 2002). The creative process is that which a graphic designer student uses to conceive, plan, and execute a design using the elements of design: (1) color; (2) image; (3) line; (4) shape; (5) space; (6) texture; (7) type; and, (8) value (Resnick, 2003; Lauder & Pentak, 2002; White, 2002; Dabner, 2000). The instructional activities within the graphic design discipline are developed to empower learners with the ability to choose and combine these elements using the principles of design: (1) balance; (2) contrast; (3) direction; (4) economy; (5) emphasis; (6) proportion; (7) rhythm; and, (8) unity (Resnick, 2003; Lauder & Pentak, 2002; White, 2002; Dabner, 2000).

Through the application of a well-structured design process, the learner constantly considers alternative solutions, evaluating each decision, with the hope of arriving at the best-researched solution. Rules have been established for the most effective use of elements and principles, but because of the imprecise nature of these rules (Hollis, 1994),

often some of the more successful solutions to problems violate the rules themselves. In its most effective application, assessment in PBL has a two-fold responsibility; to monitor and promote learning (Huba & Freed, 2000). The learning, as well as the assessment in PBL and the graphic design discipline, incorporates the full gambit of the characteristics associated with the active, exciting process found in learner-centered classrooms, which directs learning through ill-defined problems (Riel, 2000).

The assessment of project-based learning solutions needs to be structured using specific lesson plans that contain: (1) specific objectives; (2) instructional procedures and available resources; and, (3) evaluation methods (Oliva, 1989). The specific objectives are derived from the general educational goals, and direct the entire process in a cyclical manner (Doll, 1989). An assessment built on this framework establishes a criterion-referenced procedure that can most effectively measure the success of achieving the instructional objectives (Smith & Ragan, 1993). Rubrics that are properly developed can provide a criterion-referenced assessment that provides learners with guidance, opportunities for improvement, and an understanding of their developmental readiness (Andrade, 2001).

Literature Review

Graphic design curricula vary from institution to institution. Four-year undergraduate programs can terminate with a BS (Bachelor of Science), BA (Bachelor of Arts), or BFA (Bachelor of Fine Arts) degree. Schools of design or institutes of design may offer a more intensive design education than traditional universities or colleges, but not be as "well rounded" with liberal arts and science electives (American Institute of Graphic Arts, n.d.). If a graphic design program is offered at a school that has received program accreditation from an organization, such as the National Association of Schools of Art and Design (NASAD), the program outcomes must stress attainment of competencies in areas of technology, problem-solving, visual studies, and theoretical issues (National Association of Schools of Art and Design, 1997).

An example of graphic design program outcomes can be demonstrated through the documentation of the Ontario Ministry of Training, Colleges and Universities (Ministry of Training, Colleges and Universities, 2003, April). The ministry has developed a synopsis of the vocational learning outcomes with each outcome having a series of observable elements of performance. The synopsis details what a graduate of a Graphic Design Program must reliably demonstrate upon completion of the program.

Graduate outcomes represent realistic expectations for graduates to achieve through their matriculation in the graphic design discipline. Within the discipline, students achieve these outcomes through subjects relating to perception, concept, and method (Fried & Scott, 2003). Perception includes the skills and sensitivities used to manipulate the elements of graphic design. Concepts are the ideas and context in which a designer uses the principles of graphic design. Last of all are the methods that a designer uses to demonstrate the skills and activities needed to complete the tasks associated with using the perception and concepts.

Evaluation methods in a graphic design program can range from grading well-structured multiple-choice tests to authentic assessment of complex, ill-defined projects. Knowledge of the basic definitions of terms, and being able to recite them on demand, can be an effective means of demonstrating the earliest stages of a student's involvement in learning. The evaluation methods used to judge whether a student has grasped the body of knowledge at the lowest levels are well established and, for the most part, effective. Grading at the lowest end of the cognitive domain to understand how much students have retained is far different than evaluating the synthesis of the elements and principles needed to solve a problem. Determining grades for projects that rely on the highest cognitive levels for success are not as easy to consistently employ and, usually, may be controlled by the subjective values of an instructor.

Grades, as part of a course's evaluation system, exist to communicate to the stakeholders in the educational system a report of students' progress, and the effectiveness of the instructor (Frisbe & Waltman, 1992; University of Georgia [UGA], n.d.). For an educational program to achieve the maximum success through the use of an evaluation plan, it must be one cohesive structure embraced by the faculty within the program. Individualized grading plans by faculty members can be establish to reflect each person's creative philosophies, but must remain uniform within a framework.

Wide-ranging methods of evaluation, within a program of study, create confusion for the students as well as the

administrators of the program. Students are more comfortable within a program of study that does not reinvent grading methods from course-to-course. Grading plans can change in that the expectations for projects in a more advanced course are higher and the evaluation standards can be raised accordingly. Faculty may lack the tools to develop proper assessment methods for their classes, and may do more to confuse the evaluation system than clarify it for the students. The resulting confusion develops wide ranges of what can be acceptable for evaluation within a course. Examples of grading policies may be very nebulous, leaving interpretation to instructors that can may vary from student to student within a single class. Well-structured assessment procedures within a graphic design curriculum would provide consistent implementation for the faculty, reinforce the instructional objectives for the students, and provide the administration with reports that accurately measure student success.

Project-Based Learning

Problem-based learning, as well as project-based learning (PBL), exists in higher education to provide students with opportunities to solve real-world problems (Alessio, 2004). As universities and colleges undergo curricular reform, the move from teacher-centered to learner-center environments has brought about a change to problem-based learning in disciplines ranging from medical education to accounting (Seaberry, 2002; Barr & Tagg, 1995). Learners engaged in PBL use its forum (Duch, Groh, & Allen, 2001), as they ask questions, design investigations, collect and analyze information, use technology, produce solutions, explain results, and share ideas (Krajcik, Czerniak, & Berger, 1999).

In contrast to traditional teaching methods, problem-based learning reduces the teacher's role of a transmitter of information, where a student may feel comfortable as the receiver, to one in which the student is required to develop an individual plan or direction of thought and action (Alessio, 2004). Learners move from a passive recipient of information, to an active participant in the learning process, using constructivist approaches to build solutions to real-life problems (Thomas, 2001).

Moving from the passive environment to one in which the students are more actively involved in the learning process requires teachers to develop classroom experiences that assure these results (Jungst, Licklider, & Wiersema, 2003). The emphasis in the classroom is less on how the teacher teaches and more on how the student learns. The difficulty at the post-secondary level is that most professors are schooled in being subject-matter experts—the product—and not well versed in methods of delivery—the process (Jungst, Licklider, & Wiersema, 2003).

Problem-based learning builds learners' long-term learning skills, information literacy skills and helps to develop critical thinking aptitudes (Frank & Barzilai, 2004, February) as they move to positions of greater responsibility for their learning. As the dynamics in a problem-based classroom are changing for the learners, the teachers are also experiencing a shift away from their traditional roles. Teachers are less of an expert lecturer, provider of facts, and orchestrator of learning, and more of a motivator, mentor, guide, advisor, tutor, and colleague (Buck Institute for Education, 1999).

The PBL environment creates advantages for the teacher as well as the student. Teachers may find the constant exploration of new projects with new students each term motivating and exciting. New ideas are constantly being discovered through research with students, and with the students so actively involved fewer disciplinary problems should occur (Krajcik, Czerniak, & Berger, 1999). With all these advantages comes the responsibility of developing assessment methods that address multiple solutions to a problem, individual achievement as well as group participation, and whether the instructional objectives been met (Duch & Groh, 2001).

Purpose of the Study

The discipline of Graphic Design has always employed some form of real-world, or Project-Based Learning, as the basis for directing student learning. The projects developed by faculty members are normally based on, and may be limited to, their real-world experiences. While these limitations can restrict the classroom experiences for the learners, the overall experiences are normally positive. The major problems in the PBL process exist when assessments are given to determine the grades to be assigned (Buck Institute for Education, 2003).

Often, the only "assessment" is in the form of a grade at the summative point of the assignment that contains strong, subjective overtones. Developing methods for faculty to use during formative stages of the process that will guide the learners to stronger, more acceptable solutions to educational problems is imperative for the system to improve and

be more effective. Consistent assessment methods that add to the learning experience enrich the learning environment and help to deeper embed knowledge and skills attained. This study is directed to the discovery of more objective, formative methods of assessment that can be uniform applied through all faculty members.

Research Questions

Using action-research guidelines and collaboration with the faculty members at multiple institutions, this study used multiple methods to assess student-generated solutions to a graphic design lesson. The analysis of data generated by the two individual assessment methods were used to address the research questions:

1. Is there a significant difference in the assessment of graphic design projects using non-rubric and rubric methods?

2. Is there a significant difference in the assessment of graphic design projects based on the use of rubric methods between male and female instructors?

3. Is there a significant difference in the assessment of graphic design projects based on the use of rubric methods between instructors in different geographic locations?

4. Is there a significant difference in the assessment of graphic design projects based on the use of rubric methods between non-fine arts and fine arts degreed instructors?

5. Is there a significant difference in the assessment of graphic design projects based on the use of rubric methods between novice and veteran instructors?

Hypotheses

The study employed five null and alternative hypotheses, with the goal of the study to determine if a relationship exists between the independent variables and the dependent variable.

Null hypotheses are:

$H_0 1$: There is no statistically significant difference in the assessment of graphic design projects using non-rubric and rubric methods.

$H_0 2$: There is no statistically significant difference in the assessment of graphic design projects using rubric methods between male and female instructors.

$H_0 3$: There is no statistically significant difference in the assessment of graphic design projects using rubric methods between instructors in different geographic locations.

$H_0 4$: There is no statistically significant difference in the assessment of graphic design projects using rubric methods between non-fine arts and fine arts degreed instructors.

$H_0 5$: There is no statistically significant difference in the assessment of graphic design projects using rubric methods between novice and veteran instructors.

Alternative hypotheses are:

$H_1 1$: There is a statistically significant difference in the assessment of graphic design projects using non-rubric and rubric methods.

$H_1 2$: There is a statistically significant difference in the assessment of graphic design projects using rubric methods between male and female instructors.

$H_1 3$: There is a statistically significant difference in the assessment of graphic design projects using rubric methods between instructors in different geographic locations.

$H_1 4$: There is a statistically significant difference in the assessment of graphic design projects using rubric methods between non-fine arts and fine arts degreed instructors.

$H_1 5$: There is a statistically significant difference in the assessment of graphic design projects using rubric

methods between novice and veteran instructors.

Delimitations of the Study

The participants for this study were delimited to the full- and part-time faculty within graphic design departments within the Art Institutes International. The instruments used were delimited to assessing projects that could be produced in an introductory level typography course. Using action research methods for this study will delimit (McMillan & Wergin, 2002) the findings to academic disciplines in higher education that are deeply involved with creating learning experiences and projects that duplicate real-world situations. This may, even to a greater extent, be delimited to disciplines within applied visual arts fields that rely upon learners incorporating high levels of creative skills to build solutions to problems.

Limitations of the Study

Reaching a consensus with faculty members at multiple institutions as to what areas of assessment are most critical to learners at specific points of their academic career may be an issue that creates a division of agreement. The experience level of the participants in applying rich, meaningful assessment to projects rather than the mere assignment of grades may work against the study to provide meaningful outcomes. Researcher has no control over faculty members accurately responding to assessments.

Definitions

Art Institutes International—A group of schools with 44 locations that offer a wide-range of applied arts programs in areas of Audio Production, Computer Animation, Culinary Arts, Culinary Management, Fashion Design, Fashion Marketing, Graphic Design, Industrial Design Technology, Interior Design, Media Arts & Animation, Photography, Restaurant Management, Video Production, and Web Design & Interactive Media; offerings and individual differences vary from location to location. While there is Central Services at corporate headquarters in Pittsburgh, PA, that provides support and direction for the curricula in the academic programs, the schools have autonomy and develop their curricula within the local institution. Some of the locations operate as branches of more established schools. Schools are awarded accreditation by the regional accrediting agency such as the Middle States Association of Colleges and Schools (MSA) Middle States Commission on Higher Education, the New England Association of Schools and Colleges (NEASC-CIHE) Commission on Institutions of Higher Education, North Central Association of Colleges and Schools (NCA-HLC), the Northwest Commission on Colleges and Universities (NWCCU) the Southern Association of Colleges and Schools (SACS) Commission on Colleges, and the Western Association of Schools and Colleges (WASC-ACCJC) Accrediting Commission for Community and Junior Colleges.

Assessment—Through various assessment methods, judgments are made as to the worth or value of something. Classroom assessment is a simple method faculty can use to collect feedback, early and often (Diamond, 1998) using formative means, and at the conclusion of studies using summative means, on how well their students are learning what they are being taught (Maki, 2004). The purpose of classroom assessment is to provide faculty and students with information and insights needed to improve teaching effectiveness and learning quality. Within the classroom, the assessment process documents, usually in measurable terms, knowledge, skills, attitudes and beliefs (Huba & Freed, 2000). A good assessment is valid and reliable, but realize that an assessment may be reliable but invalid or unreliable and invalid, but an assessment cannot be unreliable and valid. In practice, an assessment is rarely completely valid or entirely reliable.

Assessment Reliability—When an assessment is considered consistent, stable, and dependable by achieving the same results with the same (or similar) cohort of students it is said to be reliable (McMillan, 2004). An area of importance for this study is internal consistency reliability (Popham, 2005), in that the series of descriptors used to determine the level of success reached by the learners are consistent in tone and realistic. As a result of this study a consistency of interrater reliability will be established through the use of rubrics.

Assessment Validity—A valid assessment is one that measures what it is intended to measure. It can also provide information for learners to maneuver through a problem maze (Huba & Freed, 2000). An assessment that does not reasonably produce both qualitative and quantitative scores that truly reflect what knowledge and/or skills the

learner retained is considered invalid (McMillan, 2004). Rarely is an assessment completely valid or invalid, but more normally is positioned at some degree of being valid or invalid (McMillan, 2004).

Education Management Corporation—As one of the nation's leading providers of post-secondary educational programs, the Education Management Corporation is a For-Profit organization that provides a variety of post-secondary programs of study as the parent company of: (1) Argosy University—18 locations providing undergraduate and graduate-level programs in business, education, health sciences, and psychology and behavioral sciences; (2) The Art Institutes—44 locations with undergraduate and graduate programs in design, media arts, fashion and culinary arts; (3) Brown Mackie College—18 locations offering certificates, diplomas, associate degrees and bachelor degrees in health sciences, business, information technology, design, and legal studies; and (4) South University—5 locations offering undergraduate and graduate programs in business, health, and pharmacy (Educational Management Corporation, n.d.).

With the 85 locations in 26 states and two Canadian provinces the total enrollment at the beginning of the January 2008 academic year reached 97,300, and increase of 19.1 percent from the previous year (Hoyle, 2008).

Graphic Design—The term graphic designer and the field of graphic design was first used in the early 1920s (Meggs, 1992), and is the practice or profession of designing print or electronic forms of visual: (1) identification; (2) information and instruction; and, (3) presentation and promotion (Hollis, 1994) through the combination of typography, illustration, and photography (Livingston & Livingston, 1998). The products produced by a graphic designer include logos, letterheads, packages, advertisements, posters, signage, books, other publications, and web pages. The imprecise nature of the rules used by graphic designers makes it a discipline that it can only be studied, not learnt (Hollis, 1994). This imprecision adds to the difficulty in assessing graphic design projects.

Ill-Defined Problems—A problem or situation that is ill-defined produces less predictable solutions than a "black and white," well-defined problem (Huba & Freed, 2000). The ill-defined problems provide opportunities for the learner to explore a wider range of possible solutions, and are more involved with real life emerging and enduring problems. These atypical solutions can range from inspirational to aberrational, from highly successful to dismal failures. Ill-defined problems require authentic assessments to properly evaluate the success of the solution and the design process employed in achieving the solution (Huba & Freed, 2000).

Novice Instructor—The term novice is used to describe a person lacking the training and experience in a particular field of endeavor (Oxford American Dictionary, 1996). Novice instructors may lack the insight and observable skills (Committee on Developments, 2000) to adequately assess projects. For this study a novice instructor of graphic design will be a person with three or less years of teaching experience and less than six total years of teaching and industry related experience combined.

Problem-Based Learning—This is a teaching strategy that begins with students, working in small groups, delving into, determining key issues, and then solving "real-world" problems under the guidance of a facilitator. By focusing upon a realistic problem, students develop a varied and deeper perspective and knowledge of the subject area (Duch, Groh, & Allen, 2001).

Project-Based Learning—A model for classroom activity that shifts away from the classroom practices of short, isolated, teacher-centered lessons and instead emphasizes learning activities that are long-term, interdisciplinary, student-centered, and integrated with real world issues and practices. Some educators treat project-based learning as a subset of problem-based learning (Buck Institute for Education, 2003).

Proprietary Institutions—Proprietary schools can have a wide-ranging curricula, and for the most part, are thought of as the small family owned schools that cater to one specific area of study and whose profits are taken a income (Ruch, 2001). Many of these proprietary schools flourish throughout the nineteenth century in the United States (Breneman, Pusser, & Turner, 2006). With the need for more educational avenues to serve the needs of today's students, a new breed of For Profit Colleges & Universities (FPCUs) (Tierney & Hentschke, 2007) have emerged as a part of large systems that are publicly traded corporations (Ruch, 2001) that provide a wide-range of undergraduate and graduate programs that are characterized by their emphasis on career placement rates (Ruch, 2001).

Rubric—This is a rating scale or scoring guide that seeks to evaluate a student's performance based on the sum of a full range of criteria rather than a single numerical score. A rubric is a set of codes (Stefl-Marby, 2004) that is composed of at least two criteria by which student work is to be judged on a particular task and at least two levels of performance for each criterion. Component parts describe levels of acceptable as well as unacceptable levels of performance (Stevens & Levi, 2005) achieved by learners in completing a task. Rubrics provide an effective assessment method for both complex-learning tasks (Stefl-Marby, 2004) that may be well-defined or ill-defined (Huba & Freed, 2000; Stevens & Levi, 2005).

Veteran Instructor—A person is considered a veteran when they have a long duration in an occupation (Oxford American Dictionary, 1996). Veteran instructors may possess schemas (Committee on Developments, 2000) that will give them a greater ability to accurately assess graphic design projects. Instructors will be considered a veteran if they have more than three years of teaching experience with more than six total years of teaching and industry related experience combined.

Well-Defined Problems—A problem or situation that is well-defined normally results in one possible correct solution, a wide range of less correct, and completely wrong solutions. These problems normally call for less creative thinking on behalf of the learners, but are useful in developing skills employing a series of repetitive steps (Huba & Freed, 2000). Assessment strategies used in evaluating these problems are usually more of a right/wrong grading of a solution.

Importance of the Study

When learners are engaged in solving ill-defined problems, such as those presented in most graphic design curricula, the methods employed in assessing their solutions must be respectful of the variety of solutions, and be as rigorous as the efforts set forth by the learners (Huba & Freed, 2000). Within the graphic design discipline grades are often assigned to projects that provide the learner with information as to the quantitative worth of the solution, but little information as to what was strong or weak about the effort. Rubrics are developed with guidelines (McMillan, 2004) that provide information at formative stages of a project as well as summative stages. The employment of effective assessment strategies can improve the learning process as well as increasing the validity and reliability of the assignment of grades.

Methodology

Rubrics have been found to be an important component in educational assessment by serving both the deliverers and receivers of assessment information better opportunities to communicate and understand lesson requirements, as well as the assessment procedures associated with a project. This study was developed to investigate the use of rubrics in the assessment of graphic design projects, and determine if their use can be a more effective assessment strategy. Using quantitative methods through action research, the researcher used two methods of assessing solutions of a graphic design project to measure the differences between the uses of two different assessment designs. Analyses of variance (ANOVA) was calculated to determine whether demographic characteristics show a statistically significant difference in assessment procedures.

This study was developed to use the collaboration of thirty-seven Graphic Design Educators located at various Art Institutes within the Educational Management Corporation, and determine whether agreement can be reached between educators whose differences include: gender, age, years of teaching experience, levels of education, a variety of field experience, employment status, and geographic location. The institutions that employ the participants are located in forty-four cities throughout the United States and Canada. Most of the forty-four schools have fulfilled the Principles of Accreditation required by the appropriate regional accrediting body.

The Graphic Design programs offered at the various institutions provide opportunities for students to earn diplomas, associate degrees, and/or bachelor degrees. While the institutions' curricula have commonalities, each and every curriculum has unique qualities that may be determined by factors ranging from the market demand of the geographical area to the academic requirements of their accrediting bodies. The institutions have autonomy from the corporate leadership, and have the ability to develop their own standards for content and instruction. This individuality may play a factor in the results of the study by altering the decisions made by the participants.

Research Design

An action research and correlational research design was chosen for this study, with the intention that results from this study will be implemented into graphic design curricula, providing opportunities for stronger assessment methods that will improve both delivery (instruction) and receiving (learning) strategies. The focus of this research is derived from the lack of effectiveness and consistency of current assessment methods within graphic design programs. The researcher's intention is that outcomes from this research will provide information that will lead to decisions (McMillan & Wergin, 2002) as to how the general approach to assessment strategies can be improved. Action research normally reflects a multiple-stage procedure, with the stages being:

1. A suspension of current activities and reflecting on what can be done to improve a situation;

2. Raising research questions that can be addressed through a well-structured study;

3. Developing a plan for the study that will answer the questions;

4. Engaging in fieldwork, using procedures that will provide answers;

5. Analyzing the results from the fieldwork and generating a plan to implement new procedures that will improve the conditions originally addressed; and,

6. Putting into practice the new plan followed by a reimplementation of any or all of the preceding stages to verify the effectiveness of the changes (Wadsworth, 1998).

Using this methodology, the researcher conducted a detailed investigation to determine whether a stratified sample of the population, Graphic Design Educators employed by the Educational Management Corporation, can reach consistent agreements in assessing a graphic design project. The researcher will conduct this study requiring the participants be involved in a two-phase investigation. In phase one of the study, participants will assess five student-generated solutions to a graphic design lesson by making a quantitative decision as to the effectiveness of the solution. After a short period of time, phase two was administered, with the participants being asked to assess the same five student-generated solutions from phase one along with five new student-generated solutions. The total of ten student-generated solutions will provide the basis for the answering of research questions two thru five. In phase two, participants will assess the solutions using a scoring rubric developed by the researcher and used by the students as they generated their solutions.

Results

The subjects (N=37) in this study were Graphic Design faculty members employed by the Art Institutes International at various locations throughout the United States. The subjects were male or female; part- or full-time employees; they had earned terminal degrees in that were either non-fine arts or fine arts; employed at an institution west or east of the Mississippi River; and were novice or veteran instructors. The subjects applied their assessment skills in grading a series of simple, typography-based projects. The methods of assessment as well as the subjects' demographics and academic credentials were used to compare the agreement, or lack of agreement, in assessing the subjects.

In addressing Research Question One—Is there a significant difference in the assessment of graphic design projects using non-rubric and rubric methods?—the subjects demonstrated that a statistically significant difference existed in the use of the two assessment methods (non-rubric vs. rubric) for three of the five solutions assessed (Solutions Two and Five being the exceptions). This statistically significant difference existed for the means of all five lessons as well. The means for the rubric assessments were greater than the means for the non-rubric methods for four of the five solutions (Solution Two being the exception) and for the sum of the means for all five solutions.

There was little evidence of a one-to-one mapping of assessment outcomes between non-rubric and rubric assessments insofar as there were a few weak correlations between non-rubric and rubric assessments (Question 3, 5, and overall means) and only one correlation of moderate size (Question 4). This suggests that knowing how a rater assessed an art project using non-rubric assessments predicts little about how they will rate the same project using rubrics, and that non-rubric and rubric-based approaches to assessment are two fundamentally different approaches. The basis of assessment, i.e., non-rubric or rubric-based, should be taken into consideration when comparing the performance

of art students across different schools.

The paired sample t-test results and 95% CI of the differences between means analysis was not sufficient to provide unequivocal results that rubrics necessarily lead to higher overall assessments, which was probably due to the fact that there were only five projects assessed; three showed higher rubric assessments but two didn't. Future research with a larger sample size is necessary to address this potentiality.

The second part of the assessment evaluation, which involved the rubric-based evaluation of 10 art projects analyzed the effect on assessment of four independent variables, each with two levels: gender, region (East and West), degree (holder and non-holder of a Fine Arts degree), and teaching experience (novice and veteran), produced the following results.

The investigation of Research Question Two— Is there a significant difference in the assessment of graphic design projects based on the use of rubric methods between male and female instructors? *While there were more males than females among the assessors, the gender of an assessor did not have an effect on assessments.*

The investigation of Research Question Three—Is there a significant difference in the assessment of graphic design projects based on the use of rubric methods between instructors in different geographic locations? *Although there were nearly twice as many assessors from the East compared to the West in this study, assessors' region of residence did not have an effect on assessments.*

The investigation of Research Question Four—Is there a significant difference in the assessment of graphic design projects based on the use of rubric methods between non-fine arts and fine arts degreed instructors? *Although there were about half again as many assessors with fine arts degrees, assessors' terminal degree did not have an effect on assessments.*

The investigation of Research Question Five—Is there a significant difference in the assessment of graphic design projects based on the use of rubric methods between novice and experienced instructors? *Although there were nearly twice as many veteran assessors compared to novice assessors in this study, assessors' experience did not have an effect on assessments.*

Recommendations for Rubric Development

The existing literature is in agreement that rubrics…

- are hard to design.
- are time consuming to create.
- are useful if well-designed.
- result in more consistent assessments.

- provide specific feedback to all stakeholders.
- place emphasis on instructional activities.
- speed-up the assessment time.
- reduce the subjectivity of assessments.

But, when time is taken to properly develop rubrics they can turn a qualitative solution into a quantitative assessment.

To maximize the efficiency of developing and implementing rubrics, here are some guidelines:

⮌*A Rubric by Any Other Name…*

Often in the educational environment assessment tools are developed and used that are called "rubrics," but in reality are rating scales or check lists. The major distinction that sets rubrics apart from rating scales is the descriptive element associated with each level of performance (descriptors). The rubrics found in Figure 1. and Figure 2. provide both the assessee and assessor with language that describes what must be accomplished to receive the grade assigned to that level. A rubric is a much more detailed account of what was accomplished through the completion of the project, and can be compared to the example of a rating scale shown below. A rating scale (example 1) serves the same purpose

example 1
rating scale

USE OF TYPOGRAPHY

strong   weak

10   9   8   7   6   5   4   3   2   1
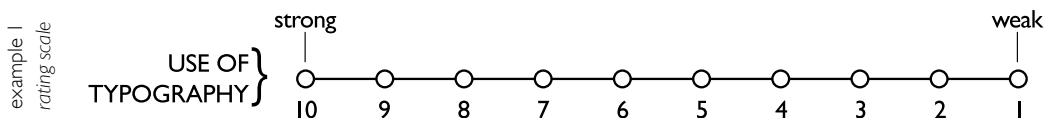
as a rubric in assigning a grade to a task, but it fails to provide the assessee of any idea of what is required for success before the project is completed. What does it take to receive a grade of "8?" Or a "3?"

Another assessment tool that is occasionally labeled a "rubric" is a checklist. A checklist can be an effective means of confirming if particular tasks have been accomplished, but only delivers the discrete "score" of "YES/NO" or "ACCOMPLISHED/NEGLECTED." A checklist is a more obvious assessment means (example 2) than a rating scale, but does not add any value to what may have been accomplished. A grade could be assigned based on how many

example 2
checklist

YES} LINE ☐ SHAPE ☐ DIRECTION ☐ TYPOGRAPHY ☐ SIZE ☐ TEXTURE ☐ COLOR ☐ VALUE ☐
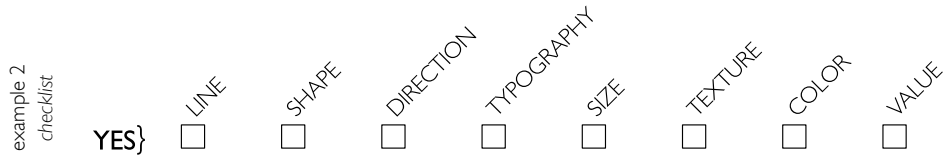
of the items on the checklist have been completed. Based on "example 2" a student completing 6 of the required 8 items may be assigned a grade of 6/8 or 75%. This is merely a grade, and in no way would reflect the qualitative value of the work.

➲ *The Parts are Greater Than the (W)holistic…*
A holistic rubric is used to assess a project as a whole, and can be effective if the whole is the most important assessment factor—one grade and statement of success regarding an educational effort. They certainly take less time to create, and less time to implement. They lack the diagnostic depth of an analytic rubric, and provide an assessment that covers the aggregate rather than the minutiae of the project. More than likely the elements that comprise the whole project are in need of direct comments and assessment; the use of an analytic rubric allows the assessor to focus grades on multiple criteria and the summation of the criteria results in a whole grade.

➲ *Align is the Shortest Distance…*
When developing a rubric it is necessary to align the Assessment Strategy with the associated Instructional Activities which have been previously aligned with the course's Measurable Objectives. It is already assumed that the Measurable Objectives—Student Outcomes—were developed in alignment with the Goals of the program. This alignment

example 3
alignment

●━ GOALS ━━━━ MEASURABLE OBJECTIVES ━━━━ INSTRUCTIONAL ACTIVITIES ━━━━ ASSESSMENT STRATEGIES ━●

(example 3) helps guarantee the rubric's criteria have been properly developed to deliver the best possible assessment for the project.

➲ *More is Better…*
The assignment of the number performance levels is an ongoing debate, should four levels be specified or five? Traditional rubrics have normally had four descriptive levels of success, often with overriding descriptive titles such as: EXCEPTIONAL, PROFICIENT, MARGINAL, and UNSATISFACTORY. Developing five levels is more difficult, and adds time to the overall development time, but the use of five levels is more in line with traditional classroom assessments that assign grades that are five distinct levels (A. B, C, D, & F). As with so many decisions you may make in developing your rubrics, chose the number that best works within your classroom environment. (see *To Zero or Not to Zero…)*

➲*To Zero or Not to Zero…*

Of all the suggestions that can be made regarding the development and implementation of rubrics in the graphic design classroom, this one is the most obvious. One of the "Levels of Performance" for each assessed criteria must be a zero to properly reflect the absence or omission of some element or factor by a student. To assign even a grade of "one" when some criteria is missing is ludicrous. The rubric that I used for my research study did not contain the option of "zero," and fortunately the solutions that were being assessed by my participants did not lack any of the required criteria.

➲*Lost in Translation…*

If you choose to stay with the more conventional method of 4 or 5 discrete levels of grading (1–4 or 0–4), then it is important to devise some system that will allow for you to assign a more traditional grade to the final rubric score. It may be enough to simply use a percentage score such as 19 out of a possible 24 points can be calculated as $^{19}/_{24}$ or 79%, but if something more needs to happen, then the translation may be a difficult endeavor.

➲*Timing, Timing, Timing…*

The effectiveness of a rubric exists in the timing of its implementation in the project development process. Students must receive the rubric at the time of the project assignment for them to have the best understanding of what is expected of them. To receive the rubric towards the completion of the project negates mush of its effectiveness. The student should be "working towards the criteria" of the rubric, accomplishing what is expected of them at each performance level.

➲*Enough Already…*

A good number of criteria for each project is from 4 to 6. This, of course, is dependent upon the Measurable Objectives set forth by the course and/or the project. More than 6 can be too tedious and perhaps break the assessment into too many components.

➲*Weighting for Godot…*

A weighted rubric is an analytic rubric in which certain criteria are judged more heavily than others. As projects develop throughout a term, emphasis on a particular criterion may increase or decrease. A weighted rubric clearly communicates which parts of the project are more important for a particular activity. When learning something new, it is difficult to assimilate all of the necessary details into a coherent final product. Likewise, it is difficult to learn new things in isolation or out of context. A weighted rubric devised from quality projects will allow new learners to focus on what is being taught, while providing meaningful context to support the entire experience.

➲*Big Picture vs. Minutiae…*

A rubric is most effective in assessing the major components of a graphic design projects, and less effective in determining the success of the minutiae of a project. While certainly a performance descriptor such as: *"Major (or Minor) problems existed in formatting the paragraphs of copy,"* is a perfectly viable level of success, it does not identify the problems. Leaving it up to the student to find those problems may not be an acceptable, especially if they do not understand the problems.

➲*Nothing Personal…*

When developing the descriptors for the performance levels assigned to each criterion, avoid making reference to a student's effort, refer to the success or failure of the project instead. It would be better to use the descriptor:

"The layout of the pages was somewhat effective and some of the elements were properly placed on the grid."

instead of:

"You were somewhat effective in laying out the pages, and you properly placed some of the elements on the grid."

Students are more likely to accept criticism of a project and use that criticism to improve their efforts.

⊃*Tuh-**mey**-toh/Tuh-**mah**-toh…*

Contemporary rubrics were developed to apply consistency to assessments of ill-structured projects and remove as much subjectivity in the assessment process as possible. Removing all subjectivity is impossible because the terminology used to describe the levels of performance—descriptors—are subjective terms themselves. Modifiers such as ALWAYS, SOMETIMES, OFTEN, USUALLY, OCCASIONALLY, and NEVER are ambiguous and have different meaning to each person who uses them.

Apply some numerical value to the terms, SEVERAL, FEW, and NOT MANY, and come to some agreement as to what the quantitative value of each of them represents. Reach some agreement with your class in the early part of the term as to what is meant by the use of your terminology, give the students as much input as possible to encourage "buying into" your assessment strategies. Remember the modifiers you use are adverbs that "typically express some relation of place, time, manner, attendant circumstance, degree, cause, inference, result, condition, exception, concession, purpose, or means," and are open to interpretation.

Avoid using "absolutes" such as ALWAYS and NEVER, student efforts rarely, if ever, fall into these two ends of the assessment continuum.

⊃*Continuous Scoring…*

A rubric normally produces 4 or 5 levels of assessment, which can be a very limiting number of choices for the assessors, as well as the assessees. In a traditional scoring system from 0 to 100, there are 101 possible discrete scores that can be assigned if one is only considering whole numbers. To reduce that number to only four or five is quite a radical evaluation change, and confining. If an assessor is allowed to apply a more continuous scale to a rubric by dividing the whole point intervals into tenths of a point from 1–4 (a value less than 1 would only be a zero, much like the grage of "F" does not have a plus or a minus), then the number of discrete scores is increased from 5 (0, 1, 2, 3, & 4) to 32 (0, & 1.0 to 4.0).

"Pigeon-holing" performance levels into five positions is difficult and my not be fair to the students involved. While not all 32 levels have to be employed, an assessor is provided with more options when applying a quantitative score. The descriptor that was discussed earlier: ***"The layout of the pages was somewhat effective and some of the elements were properly placed on the grid,"*** may be an appropriate assessment comment for two different project solutions, but the two solutions may have slight quantitative differences. Being able to assign different quantitative values to the efforts allows the assessor to discriminate between the two solutions.

⊃*It's Your First Time…*

Like so many of the other experiences in our life, the first time you develop a rubric it may seem like an awesome task that falls short of your expectations. Don't be disappointed that your first rubric doesn't accomplish all that you want it to, this is a "work in progress," and your results will improve with experience and effort. Good luck!

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The following pages show two rubrics, Figure 1 is the rubric used in the research study "AN INVESTIGATION OF ASSESSMENT PRACTICES: PROJECT-BASED LEARNING IN HIGHER EDUCATION GRAPHIC DESIGN AT PROPRIETARY INSTITUTIONS," and Figure 2 is a revised version of the rubric following some of the guidelines proposed above. Use them as a comparison and realize that the assessment process is one that is dynamic and always in need of changes.

| Criteria | ATTRIBUTE | Project Outcomes | | | | score |
		exceptional **4** points	proficient **3** points	marginal **2** points	unsatisfactory **1** point	
Label Shape/Size	BREADTH	The shape/size of the label met all of the basic requirements.	The shape/size of the label missed one of the basic requirements.	The shape/size of the label missed two of the basic requirements.	The shape/size of the label missed all three of the basic requirements.	
Character & Element Placement	ACCURACY	The characters & design elements were properly placed using a correctly established grid.	Some minor errors occurred in establishing and /or placing the characters & design elements within the grid.	Major errors occurred in establishing and /or placing the characters & design elements within the grid.	The grid was not established or used for the solution.	
Design Elements	ACCURACY	The design elements appear to be carefully drawn and patiently created.	With more effort the design elements could have been well done; the work lacks the finishing touches.	Average or less than average creation of the design elements; work appears carelessly done.	Poor or little effort in the creation of the design elements; the results lack an appearance of pride in the work.	
Color	ACCURACY	The solution was confined to the use of only black (100%k) and white (0%k).	Some minor errors occurred in confining the solution to only black (100%k) and white (0%k).	Major errors occurred in confining the solution to only black (100%k) and white (0%k).	The solution ignored the confinement to the use of only black (100%k) and white (0%k).	
Typeface Size/Style	RELEVANCE	The appropriate typeface was used; the correct sizes & styles were chosen and properly kerned.	The appropriate typeface was used; some minor errors occurred in the choices of sizes & styles and kerning.	The appropriate typeface was used; some major errors occurred in the choices of sizes & styles and kerning.	The wrong typeface, sizes, and/or styles were used and/or poorly kerned.	
Typeface Placement & Hierarchy	CLARITY	The various type sizes and styles were properly placed to establish a strong hierarchy of information.	Some minor errors occurred in the placement of type sizes and styles to establish a hierarchy of information.	Some major errors occurred in the placement of type sizes and styles to establish a hierarchy of information.	The placement of type sizes and styles failed to establish a hierarchy of information.	
Creativity/ Originality	RELEVANCE	The name of the wine demonstrates a complete understanding of the problem; a strong solution was created.	The name of the wine demonstrates some understanding of the problem; a good solution was created.	The name of the wine demonstrates a weak understanding of the problem; a poor solution was created.	The name of the wine demonstrates no understanding of the problem; the solution is unacceptable.	
Label Information	BREADTH	The solution contained all of the required elements.	The solution was missing one of the required elements.	The solution was missing two of the required elements.	The solution was missing more than two of the required elements.	

TOTAL / **32**

FIGURE 1.   **ORIGINAL SCORING RUBRIC**

Criteria	ATTRIBUTE	Project Outcomes					score
		exceptional **4.0–3.7** points	proficient **3.6–2.7** points	marginal **2.6–1.7** points	unsatisfactory **1.6–1.0** points	unacceptable **0** points	
Label Shape/Size	BREADTH	The shape/size of the label met all of the basic requirements.	The shape/size of the label missed one of the basic requirements.	The shape/size of the label missed two of the basic requirements.	The shape/size of the label missed all three of the basic requirements.	The shape/size of the label ignored the basic requirements.	
Character & Element Placement	ACCURACY	The characters & design elements were properly placed using a correctly established grid.	Some minor errors occurred in establishing and /or placing the characters & design elements within the grid.	Major errors occurred in establishing and /or placing the characters & design elements within the grid.	While something of a grid existed, it was not employed properly	The grid was not established or used for the solution.	
Design Elements	ACCURACY	The design elements appear to be carefully drawn and patiently created.	With more effort the design elements could have been well done; the work lacks the finishing touches.	Average or less than average creation of the design elements; work appears carelessly done.	Poor or little effort in the creation of the design elements; the results lack an appearance of pride in the work.	Design elements were not employed in the solution.	
Typeface Size/Style/ Hierarchy	CLARITY	The appropriate typeface was used; the correct sizes & styles were chosen and kerned; hierarchy established.	The appropriate typeface was used; minor errors occurred with sizes, styles, and kerning; good hierarchy,	The appropriate typeface was used; major errors occurred with sizes, styles, and kerning; some hierarchy.	The wrong typeface, sizes, styles were used and/or poorly kerned; no hierarchy established.	The use of type was totally unacceptable, the solution lacks legibility & readability.	
Creativity/ Originality	RELEVANCE	The name of the wine demonstrates a complete understanding of the problem; a strong solution was created.	The name of the wine demonstrates some understanding of the problem; a good solution was created.	The name of the wine demonstrates a weak understanding of the problem; a poor solution was created.	The name of the wine demonstrates no understanding of the problem; the solution is unacceptable.	The naming is not based on the project requirements.	
Label Information	BREADTH	The solution contained all of the required elements.	The solution was missing one of the required elements.	The solution was missing two of the required elements.	The solution was missing three of the required elements.	The solution was missing all of the required elements.	

NOTE:
The criteria can be scored on a continuous scale from 1.0 to 4.0 in .1 intervals, or 0 (zero).

TOTAL **24**

FIGURE 2.   **REVISED SCORING RUBRIC** ■

REMEMBER…

An **ASSESSMENT** is a method or means of

establishing an **EVALUATION**,

which provides a **MEASUREMENT**

expressed in **SCORES**

that are then compressed into **GRADES**

and finally translated into a **GRADE POINT AVERAGE.**

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Reflection by Design | Design by Reflection

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I. INTRODUCTION | Design education in the studio or lab classroom is experiential by nature, and therefore it stands to benefit from being considered in the context of experiential learning. The AEE (Association for Experiential Education) suggests that "experiential learning occurs when carefully chosen experiences are supported by reflection, critical analysis, and synthesis."[1] In recent years, I have been experimenting specifically with the capacity of reflection to guide my students' design processes. By nature, this reflective practice places more of an emphasis on process than on product or outcome.

I begin every class with a five- to ten-minute period in which my students think and write quietly in response to a question that I pose. I employ this reflection as a means to segue between class periods, to honor realizations and discoveries that might have occurred outside of class, and to document the individual trajectories of processes. This self-reflection serves at times as a precursor to critique, allowing students to identify what type of feedback they need from the group in order to move forward. Furthermore, the continuous and cumulative effect of this series of reflections is for my students to process their direct experiences of making and thereby to synthesize their learning for future understanding and application. This hearkens to John Dewey's notion of linking doing with knowing.

I follow each opening period of individual reflection with a collective sharing aloud in which every student is expected to speak. My aim is twofold: to foster a sense of community and democracy among the students, and to gain a sense of where they are at coming into class each day—in other words, to take a quick collective pulse. This enables me to respond accordingly, adjusting the lesson plan for points of emphasis or bearing in mind what to tend to one-on-one.

II. REFLECTION BY DESIGN | In the past, I have had my students respond to reflection questions in their individual sketchbooks or process books. This year, as faculty at a university in which all graphic design classes are taught in computer labs, I have had the opportunity to translate this reflective practice to digital media. Upon arriving to class, my students log on to Blackboard and begin writing on private journal blogs (each blog is accessible only to me and to the student author). The Blackboard interface enables me to post the daily reflection question, to keep an archived list of all reflection questions for each course, to refer back to students' writings at any point during the semester, and to post individual comments if need be. Given these capabilities, I have found this digital reflective practice to be more worthwhile than the prior analog one; it allows me to be more responsive, and it provides a more comprehensive experience for the students.

Indeed, within a week or two, this digital reflective practice seems to have become a comfortable ritual for most of my students. I hazard that such a response to reflection is twofold: reflection provides what has been referred to as a "do now" that enables each student to begin class individually when ready;[2] and it provides a period—albeit brief—of slowness and quiet, which seems to be rare in today's society, in today's higher education, and in our oft fast-paced and deadline-oriented discipline.

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1 http://www.aee.org/about/whatisEE
2 The "do now" opening practice was part of the BBC (BlackBoard Configuration) approach to structuring pedagogy at Boston Collegiate Charter School in Dorchester, MA, where I taught from 2004-2005.

I consider this reflective practice to be a way in which I call for my students to engage not just in schoolwork but in experiential learning. According to the AEE, "Experiential education is a philosophy and methodology in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills and clarify values."[3] The devotion of class time to this reflective practice conveys an underlying message that it is worthwhile for students to take time to think about what they are doing. It encourages them to recognize the lessons to be gained in their present processes and to synthesize these realizations in the context of past and future learnings. Therefore, I regard this routine reflective practice as a means to cultivate thoughtfulness and responsiveness in my students.

I do not have a formulaic approach to framing reflection questions, but I can detect patterns in how I ask and in what I ask by mapping the frequency of questioning words throughout the semester in my three studio classes: Digital Print Production, Design for the Web, and Publication Design. **[SEE APPENDIX A]** For example, I see that I ask 'what' questions more than anything else in all three classes, and I notice that I ask increasingly more 'how' questions in correlation with the level of the class (introductory > intermediate > advanced). Looking back at the full range of questions over the course of the semester in each of these classes, I can also identify four main trends in how I frame reflection for students. **[SEE APPENDICES B/C/D]**

1 | Given that one aim of reflection is to enable students to synthesize past, present, and future learnings, I will periodically frame questions in ways that ask them to do just that. For example, sometimes I prompt my students to think back to prior classes in order to situate their present activities:

> **How does designing for navigation through multiple pages on the web**
> **compare to designing for navigation through multiple pages in a book?**
> SAMPLE QUESTION—DESIGN FOR THE WEB

At other times, I will ask them to think ahead and to imagine future relevance:

> **In the future, how might you use the particular Photoshop tools that you researched?**
> **Describe applications or scenarios in which you would find these tools to be relevant.**
> SAMPLE QUESTION—DIGITAL PRINT PRODUCTION

> **What have you learned from this project that you can apply to future magazine projects?**
> SAMPLE QUESTION—PUBLICATION DESIGN

2 | Recognizing that not all experiences of growth are initially perceived favorably, I also make a point of framing questions in ways that invite both positive and negative reflection. I trust that such *'and/or'* framing invites truthful self-assessment:

> **What was challenging about the process of re-creating your textbook spread?**
> **What was satisfying?**
> SAMPLE QUESTION—DIGITAL PRINT PRODUCTION

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3 http://www.aee.org/about/whatisEE

I have found this approach to be especially helpful in domains (such as web design) where students can get bogged down by technical difficulties; by sharing aloud early on in class each day, students can convey their troubleshooting needs to me while simultaneously recognizing common ground if others are encountering similar challenges:

> **In the process of making your how-to page, what did you find to be <u>empowering</u>? What did you find to be <u>limiting</u>?**
> SAMPLE QUESTION—DESIGN FOR THE WEB

Inviting both positive and negative reflection can also serve as a means to differentiate part from whole, thereby recognizing both successes and potential areas for improvement during design processes:

> **Which pages and/or spreads feel <u>most resolved</u> to you? Why? Which pages and/or spreads feel <u>least resolved</u> to you? How will you proceed with them today?**
> SAMPLE QUESTION—PUBLICATION DESIGN

3 | Furthermore, reflection questions can be framed to suggest what progress would entail at a given step:

> **In your brainstorming and your sketching, <u>have you started to consider</u> interactivity in addition to content? If so, how? If not, how can you begin to do so?**
> SAMPLE QUESTION—DESIGN FOR THE WEB

> **What <u>revisions</u> and <u>refinements</u> have you made since last week's critique? How has <u>input</u> from your editor/collaborator/partner factored into this phase of your process?**
> SAMPLE QUESTION—PUBLICATION DESIGN

> **Have you <u>already</u> drawn inspiration from the WIRED or GOOD magazine article that you analyzed? If so, how? <u>If not yet,</u> what learning or realization from it might you apply to your design?**
> SAMPLE QUESTION—PUBLICATION DESIGN

By phrasing reflection questions in ways that hint at what I hope for my students to be doing, I am able to facilitate their progress without resorting to directives (on the one hand) or reprimands (on the other). According to Richard H. Thaler and Cass R. Sunstein, this sort of guidance could be characterized as a **"nudge"**—an unrestrictive way to prompt someone to make one's own good decisions.[4] While their discussion of this concept—referred to more formally as *libertarian paternalism*—is focused on decisions about health, wealth, and happiness, I hazard that such prompting could have relevance in education as well. The formulation of reflection questions is one way by which we could begin to apply their interdisciplinary research in the classroom.

4 | Affirmed by this idea of nudging, I maintain that the practice of responding to reflection questions can cultivate ownership of one's own learning. Therefore, at key points throughout the semester, I frame questions in ways that encourage initiative and ownership of process:

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4 Thaler, Richard H. and Cass R. Sunstein. <u>Nudge: Improving Decisions About Health, Wealth, and Happiness</u>. Penguin Books: New York, 2009.

What conceptual, formal, and/or technical questions do you want to ask about your poster during critique?
SAMPLE QUESTION—DIGITAL PRINT PRODUCTION

Are you running into (or do you anticipate) any technical challenges that need to be tackled in class today?
SAMPLE QUESTION—DESIGN FOR THE WEB

What sort of guidance, involvement, or feedback do you anticipate will be most helpful for you in this upcoming process?
SAMPLE QUESTION—PUBLICATION DESIGN

In this way, I call on my students to become engaged learners on a daily basis.

III. DESIGN BY REFLECTION | One of the tenets of experiential learning is that "the results of the learning are personal and form the basis for future experience and learning."[5] Acknowledging this tenet, I deemed it worthwhile to assess this digital reflective practice not by my own perception of its value but by the perceptions of my students. Therefore, I posed this question toward the end of each course:

What have you gained or realized from writing these reflections this semester?
OPEN-ENDED SUMMARY QUESTION—ALL CLASSES

In phrasing this question, like many others, I aimed to invite positive or negative reflection. While the verb *'gained'* is inherently positive, I trusted that the inclusion of the verb *'realized'* would validate dismissive responses that one might imagine such as, "I have realized that I don't like to reflect" or "I have realized that writing reflections is a waste of class time." However, I was encouraged by overwhelmingly positive and thoughtful responses in all three classes:

"I liked these reflections because they made me actually think about what I was doing instead of just doing it."
STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

"It has been helpful to force myself to think about the process."
STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

"I think the reflections helped us communicate to you what we were struggling with, which was helpful."
STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

"The reflections force me to think technically and conceptually in an organized manner and to be better prepared to meet project deadlines."
STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

I have come to view these collective responses as testimonials for the inclusion of a reflective practice in the design classroom. In order to demonstrate what my students have gained from this habit, I have categorized selected responses:

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5 http://www.aee.org/about/whatisEE

1 | The framing of reflection questions can guide students to individual realizations. My students indicate that reflective writing fosters broad, deep, and critical thinking:

> "I think that these reflections have helped me realize things I would have never thought about before. The questions have invoked new ideas and new ways for me to grow as a graphic designer. Each time I was asked a new question—whether it was about what I wished I could change about my work or what I thought about a new concept— I was forced to open my mind to new thoughts that I wouldn't have pondered before."
> STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

> "Writing these reflections makes me think in more depth about my own work by seeing details or parts that I may have just quickly glanced over."
> STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

> "Reflections have helped me to re-evaluate my work and to push myself instead of just being satisfied with what I originally create."
> STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

> "These reflections have helped me to think more critically about my work."
> STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

2 | Reflective practices can be employed in conjunction with design activities such as workdays and critiques. According to my students, our digital reflective practice facilitates planning, discussion, and follow-through:

> "The reflections provided a nice starting point for each day. I liked that I knew what I was going to do first every time I came into class. I also enjoyed taking the time to reflect on what I had learned or where I planned to go for the next class. This helped me organize my thoughts and make the most of the class period ahead."
> STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

> "Having to write out what I want a certain design to look like or how I want it to interact with people has made planning the actual project much easier."
> STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

> "The reflections have worked well as a supplement to class discussion (i.e. they help us organize our thoughts into what we want to say)."
> STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

> "While writing reflections after critiques, it is helpful to have to think back about what is working or what needs to be worked on."
> STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

3 | Reflective practices can contribute to senses of community and democracy in the design classroom. My students attest that the custom of writing and then sharing aloud—in elementary school show-and-tell fashion in which every student is called upon to speak— serves both to establish common ground amongst them and to communicate routinely to me:

"The reflections have been great, especially <u>when we speak as a class about them</u>. It is great to see/hear what everyone says and to bounce ideas off of each other."
STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

"Writing these reflections and hearing other people's reflections has taught me that <u>everyone has difficulties</u> and <u>no question is stupid</u>."
STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

"It's a way for me to express what I'm currently experiencing, enjoying, or struggling with enough to <u>gain your attention</u> and <u>access help if need be</u>."
STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

IV. CONCLUSION | Of all the insightful responses from my students, the most confirming testimonial for this digital reflective practice is one in which a student recognizes the value of reflection beyond the immediacy of the class experience:

"I haven't done reflections in any of my college courses besides this one and I feel that <u>reflecting helps me get the most out of what I am here to learn</u>."
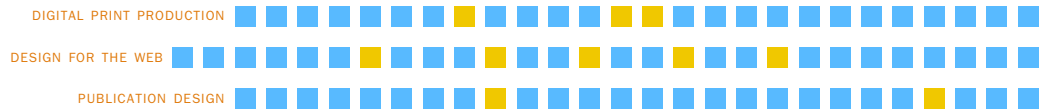STUDENT RESPONSE TO OPEN-ENDED SUMMARY QUESTION

I am amazed at how much can be accomplished by so little: evidently, a five- to ten-minute reflection period per class can yield meaningful effects on student learning.
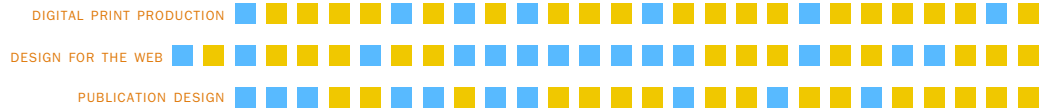
HILARY DANA WILLIAMS

APPENDIX A | By identifying those questioning words employed most often in the framing of reflection questions, and by mapping the frequency of their use throughout the semester in three classes, patterns can become apparent.

Questions are arranged from top to bottom with what is assumed to be increasing level of critical thinking. Courses are arranged from top to bottom by level: Digital Print Production is introductory, Design for the Web is intermediate, and Publication Design is advanced. Yellow denotes days on which the word was used.
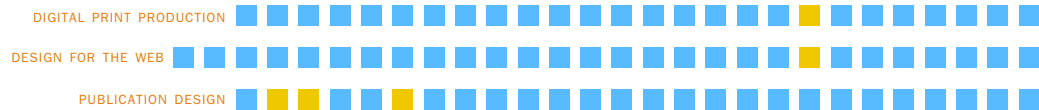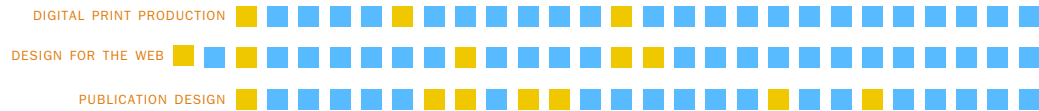
describe.

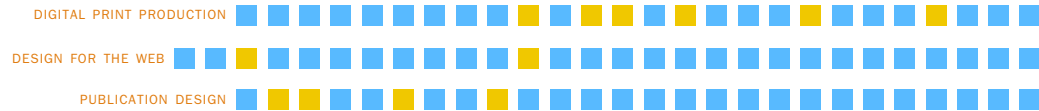DIGITAL PRINT PRODUCTION

DESIGN FOR THE WEB

PUBLICATION DESIGN

what?

DIGITAL PRINT PRODUCTION

DESIGN FOR THE WEB

PUBLICATION DESIGN

which?

DIGITAL PRINT PRODUCTION

DESIGN FOR THE WEB

PUBLICATION DESIGN

how?

DIGITAL PRINT PRODUCTION

DESIGN FOR THE WEB

PUBLICATION DESIGN

why?

DIGITAL PRINT PRODUCTION

DESIGN FOR THE WEB

PUBLICATION DESIGN

01.19 As of now, how do you define interactive design?

01.21 What can interactive design do? List as many verbs as you can.

01.26 Now that you have mapped your chosen designer's site, can you detect an underlying scheme for navigation?
Do you think that this organization is effective? Why or why not? If not, how could it be improved?

01.28 What is your first impression of HTML coding?

02.02 In the process of making your how-to page, what did you find to be empowering?
What did you find to be limiting?

02.04 After this round of Lynda tutorials, what questions do you have about CSS?

02.09 Read the three possible texts for our upcoming web typography project,
and describe the tone of voice in each.

02.11 What do you want to experiment with today in terms of typography?
What do you want to experiment with today in terms of layout/positioning?

02.16 Describe the look and feel of your first version of this text.
What different look and feel do you want to strive for in your second version?

02.18 In the process of designing more than one typographic solution for a single piece of writing,
how have your understandings of the text and of web typography evolved?

02.23 Do you feel that you have varied your CSS styling enough to create three versions of web typography
that significantly change the reading of your text? If so, please describe the differences.
If not, what changes might you make between now and Thursday's due date?

02.25 Are you satisfied with the concepts, designs, and execution of your web typography project?
Why or why not?

03.02 Describe your concept for this week's rollovers exercise by outlining it from
the perspective of a user navigating through and interacting with it.

03.04 Do you need to ask any technical troubleshooting questions in order to proceed
with construction of your rollovers exercise?

03.23 In the future, how do you imagine that you might employ the particular set of related skills that you researched?

03.25 Describe your concept for this exercise. How will the interactivity and the look and feel relate to the concept?

03.31 In lieu of an online reflection today, please open the attached text file and respond anonymously to
the midterm course evaluation questions enclosed. Thank you in advance for your feedback.

04.01 What questions about web design and web development do you have for our guest:
a web developer with a background in computer science?

04.05 What did you discover in moving from the site map phase to the wireframes phase in your website planning?

04.07 What adjectives would you use to describe your first look and feel?
What contrasting adjectives might you strive for in your second look and feel?

04.13 Compare your first and second looks and feels. Which attributes did you change,
and which attributes did you keep consistent? Are you willing to try changing some of these
consistent attributes for your third look and feel? If so, which ones?

04.15 What did you learn from the process of creating three different looks and feels
before beginning site construction?

04.20 What did last week's critique prompt you to consider (about your own designs or about others')
that you might not have previously considered?

04.22 Think ahead by making a comprehensive to-do list and a specific timeline for constructing your site.

04.27 Are you running into (or do you anticipate) any technical challenges that need to be tackled in class today?

04.29 What user feedback would you like on your site-in-progress today?

05.04 What is your goal for today's workday?

05.06 What have you gained or realized from writing these reflections this semester?

01.25 As of now, how do you define publication design?

01.27 Which piece of classic literature have you chosen to translate for a contemporary
college-age audience? Why did you choose it?

02.01 Which 3+ typefaces have you chosen to experiment with for your literature? Why?

02.03 What discoveries did you make in the process of creating multiple versions of illustrations?

02.08 What successes and challenges have you had thus far in composing your chapter?

02.10 Which pages and/or spreads feel most resolved to you? Why?
Which pages and/or spreads feel least resolved to you? How will you proceed with them today?

02.15 Do your spreads feel like parts of the same whole?
If so, how? If not, in what ways can you try to unify them today?

02.17 What did you learn from the process of the book project?
How can you apply this learning to future projects?

02.22 Describe your initial approach to the design and illustration of this magazine article.
Why are you choosing to approach it in this way?

02.24 Have you already drawn inspiration from the Wired or Good magazine article that you analyzed?
If so, how? If not yet, what learning or realization from it might you apply to your design?

03.01 What revisions and refinements have you made since last week's critique?
How has input from your editor / collaborator / partner factored into this phase in your process?

03.03 What have you learned from this project that you can apply to future magazine projects?

03.22 What aspects of publication design do you want to focus on as you refine this magazine layout?
Be specific. (ex. grid, typographic hierarchy, type + image relationships, flow, variety,
repetition, contrast, etc.)

03.24 What progress have you made toward the focus that you identified on Monday?

03.29 In what ways is your second magazine project more successful than your first?

03.31 What sort of guidance, involvement, or feedback do you anticipate will be most helpful for you
in this upcoming process?

04.05 What did you discover about the usability and versatility of your format, grid, and typography system
by drafting these first samples?

04.07 How are you intending to sequence the works in your exhibition catalog?

04.12 What aspects of your exhibition catalog design are you pleased with so far?
What aspects would you like to improve and refine?

04.14 What insights did you gain from critique?
In response, what refinements are you planning to focus on today?

04.19 How are you planning to bind your book?
Do you have any technical questions that you need to address today?

04.21 What have you learned from this project that you can apply to future projects?

04.26 Describe your initial concept for this project.
What context, medium, and format are you envisioning for this content?

04.28 What questions do you want to ask about your draft / sample / mock-up / prototype
during critique today?

05.03 What is your goal for today's workday?

05.05 What have you gained or realized from writing these reflections this semester?

Applied Color Theory and Illusions of Depth

Eve Faulkes
West Virginia University

I had the privilege of studying color theory at the Rhode Island School of Design with Joseph Albers' partner who co-wrote The Interaction of Color. Sy Sillman still wore a white lab coat as the last vestige of the Bauhaus. This was also the time when the semiotic theory first hit design education. Practical designers on the faculty such as Malcolm Grear weren't having it (semiotics). All of these influences merged happily in my thesis, The Semiotics of Color, where I attempted to put semiotics into some very practical color considerations for applied graphic design. I have been teaching graphic design for many years at West Virginia University, and teach color as part of my sophomore introduction to design. I have been looking for a textbook to use in that class that deals with color in a very comprehensive way, and I have yet to find one that fully meets my needs. Here are the top twelve things I wish students would master in terms of color.

- **How to name a color**
- **Properties of color**
- **How color makes illusions of depth**
- **How to limit a palette**
- **How color affects a message**
- **How a color changes relative to colors around it**
- **How quantity affects a palette**
- **How color differs from screen to paper**
- **When to use color and how much to use**
- **How color works in a series**
- **How color works in a 3d environment**
- **What is meant by type color**

Students Emily Frye and Scott Taylor have dealt with most of the twelve color ideas in the creation of the information visualization and the poster below. So how do you explain it and what projects can help students discover it?

A Semiotic Model:
Using a card sort, I have converted the wish list into objectives for a course on color. This is my short cut through all of the semiotic theory readings. For me, it boils down to a very useful checklist to make sure I am looking comprehensively and holistically at a design problem— formal concerns, the meaning involved, the context for it. All of these are important to color in communication. As with all examples one classifies into semiotic categories, some overlap, which is why the colors blend at the seams. So, let's take them one at a time.

FORMAL PROPERTIES

1 Vocabulary
Vocabulary is a must. Students should know it from freshmen year (from grade school in fact), but we need to speak it fluently and they don't all have it right. They still describe color as "gold" or "brick red", naming colors as Sherwin Williams would, by a mnemonic device. Vocabulary surrounding color properties give the possibility of discussion about intent. We need color names that tell us how we can correct it (make more intense, add more red, match the value of color A).

2 Equal Values:
And we want to keep our course practical. There are times we need to make a series have equal color properties like value and intensity, so that all allow white or black to read on the background, such as for way finding or info graphics.

3 Limited Palette:
We need to convince students that a limited palette is advantageous for separating their piece from a busy environment. A limited palette allows a design piece to have a sense of unity and identity.

And controlling properties in that palette means really understanding the vocabulary.

4 Unequal Properties:
More often, we would want color properties to have unequal ratios to create contrast or accents. Just as contrast is the key to giving interest to a composition, having a ratio of more to less of a color property is critical for not only interest, but also legibility.

5 Type as Color:
Speaking of legibility, discussing color as we relate it to typographic is important. Typographic color usually refers to the grey value of a type element relative to others in the composition. Weight, spacing, font and size, of course, create different greys, but putting an actual hue in a type element can alter a hierarchical order.

6 PMS, CMYK, RGB:
Some properties of color, such as purity, of course are affected by how the printing will be done. Printed color is more dull that the screen in purity of color. PMS or spot colors offer more purity than CMYK.

MEANING IN COLOR

7 Quantity:
Picking the palette is the first step, but the proportion of each can dramatically change the meaning and mood of the set.

8 Narrative:
As readers, we will of course make the first associations of color palettes with narrative ideas. We associate memories, place, and objects with color combinations. Even though blues and greens are analogous colors, "environment" will come to mind sooner than the color term.

Often, associations are the thing to avoid when picking a palette, if it's not your intention, so that your real message will not be overridden.

9 Boundaries make Depth:
Color boundaries set up depth perception, with hard (more contrasting) boundaries seeming closer and softer boundaries appearing farther from us—much like aerial perspective. Boundaries can therefore communicate depth in a narrative sense as well as hierarchy. Transparency illusions also add depth to the narrative

10 Eras as Color Meaning:
Besides collective memories that communicate narrative, periods and eras of design and style can come from palettes. We can invoke the mid-80s in a Vanderbyle or Joe Duffy palette with rich saturation and dark colors, and likewise think of letterpress and Tschichold with a 20s palette of red, black and white. We can all think of the 50s palette used on the Chevy, Thunderbird and Corvette convertibles. A design history lecture is necessary to create this point and assignments of searching help instill it.

11 Irony
Because we have such a strong association of color with ideas, it is possible to contradict expectations, so that the veracity of BRAVERY in yellow, HUMILITY in hot pink, and BULLY in a pastel tone can be questioned. Color can mix messages and create irony.

CONTEXT for COLOR

12 Screen vs. Print:
WYSIWYG….NOT! when color is involved. Sure, you can calibrate your monitor, but you cant make everyone else do it, and the PC screen will always look more dark than the Mac, and everyone's inkjet will print differently, so its all about test prints and corrections. Color must be thought of in terms of where it will be seen by the ultimate viewer.

13 Gamma
And then sometimes you can't print what your screen shows. That annoying little yellow triangle on our chosen color tells us that we will never print that color. That returns us to the discussion of spot colors, or if we will be printing with inkjet, then making the adjacent colors change properties to pop our out-of-gamma color forward for the effect we need.

14 Environment:
Here we revisit the proverb of Joseph Albers. Color is relative to its environment. His famous 3=4 color experiment proved that you could make the illusion that a color can change depending on its background. To that translation, I will add three other corollaries. Environment of color changes because of lighting (we now measure that as white balance for daylight, tungsten, fluorescents in our digital cameras). A color will gain substantial green, blue or orange due to lighting environments. Therefore the actual environment where the final piece will be seen needs to be considered, and so does the demographic that will see it. Does it have meaning for them?

15 Three-dimensional Surfaces
And finally, we may need to apply color outside of flatland. How do changing planes offer

special opportunities and considerations of light and shadow and plane structure? Can we enhance form or disguise it? When is color simply making a surface too complicated?

Art 224:

My color course is the second graphic design course. The first dealt with form, composition and basic typography. The second cannot be exclusively color, but it places emphasis on color in each project as we also move deeper into typography and add a systems way of working to their intuitive process that was the focus of the first course. Color priorities for the course are, as we have stated, involving *form, meaning* and *context*. Typography will be concerned with *hierarchy, legibility* and *expression*. Systems will explore the roles of *structure, rules, intuition,* and *construction*.

I begin explaining the relationship of color to goals of the course by analyzing package designs. My favorite is the Truvia package designed by Pentagram's Paula Scher and Lenny Naar. Truvia is a natural sweetener (from the stevia plant) and looks it on the package compared to the artificial color palette of competitors—the primarily pink of Sweet'n'Low, blue of Equal, and yellow of Splenda.

This color example allows me to discuss all of these components. It can be analyzed with color, typography and systems vocabulary.

TRUVIA COLOR Form, meaning context:

If we analyze the formal palette of the package we can say that:
strawberry red is focal point
quantity: 3 greens:1 red
proportion: most white, lots of green, accent red
complementary color palette
soft edges... transparency and green to white
hard edge... strawberry red
In terms of meaning, the same colors tell a story of healthy food.
Transparency illusion suggests lightweight, backlit leaves
green=natural, fresh
white box=pure, clean, sugar-like
The slide shows the large package on a brown field. For comparison, it is shown on grounds of green, white and red. The color context changes our perception of the box.
green background=whiter box
white background=monochromatic
red background=changes proportion and swallows the red focal point

Truvia typography:

Typography is analyzed for hierarchy having six levels of information from title to ingredients, each of which show color and weight choices that allow for legibility at that level. Meaning or expression can be analyzed to read:
sans serif font=simple, friendly
rounded edges on logo= also friendly and informal
type all monochromatic= quiet, peaceful
symmetrical layout= classical, elegant

Truvia system:
The rules that organize the color and type on the box make up its system.
The lid folds down, bisecting the box with a diagonal line.
Overlapping green triangles set up a grid structure around the front and sides of lid.
Each side is symmetrical.
A title band wraps around box.
Subtitle and single text lines align with title.
Paragraphs align with outside edges.
The tittle of the i becomes a leaf.
The strawberry is photograph and an anomaly.
Transparent strokes of letters change the rhythm of the logo font.
A coffee cup is white on white and round in contrast to all of the triangles.
Some rules set up uniqueness, and some set up unifying parallels.
This kind of analysis will be the basis of all projects in the course, forcing accurate vocabulary and descriptions of ideas, intent and conversation about relative merits of choices.

Homework:
To see how well the class discussion is sinking in, I give the students a homework assignment that asks them to scan and evaluate a design example which uses a lot of color from their textbook Tim Samara's Typographic Workbook. This is to be done in the same manner in which we analyzed the Truvia and other packages. They first extract samples of the colors used in the design to find the palette. Then they must describe the colors and the quantities used. Below are two examples of this homework.

Project 1: Color Wheel
The first project seems easy. It is partly about carefully constructing a system in Illustrator to making a color wheel. Colors are chosen from any slider or color picker the wish, but we keep the file RGB to make it s bright as possible.

The snag is that this color wheel is actually a value scale from light (yellow) to dark (blue-violet), with the trick being to make each step so even that all of the boundaries between any two colors are the same hardness. When it works, you get the reward of fluting (the glow of a lighter appearance at the edge of the color that makes it look as though it dips dimensionally)

The project is graded on the screen so that nothing changes from what they see. This actually takes about a week, checking boundaries with them until they become more used to seeing subtle differences.

Project 2: Typographic Poster
Project 2 is an intuitive composition. Students begin by constructing a module that combines initials of visiting artists for the semester. This will be semi-abstract in such a way that different sized volumes are created. Color is applied to available parts and to the background. Color can have meaning pertaining to the visiting artist. This letter module allows us to have a large element as a beginning point for intuitively building relationships for other levels of hierarchy in typographic event information

Boundaries create levels in the module where intensity might balance out volume.

These posters are 48 inches tall, giving them lots of quantity and proportion opportunities. These very large posters also challenge the students to see what a difference real sizes make compared to the small version they see on their screen (yet another context lesson). We projected each poster to real size on the wall to make decisions about sizes before they were printed on a large plotter. Even though we placed type in an intuitive balance against the module, we let the spaces and alignments within the module dictate some of our choices to increase continuity and tension. Once an idea began to form, we could see how it generated some rules to follow.

We could then see how other decisions would not be part of this idea, and eliminate noise that didn't belong to this kind of organization.

Sometimes the organization would even be complete symmetry.

Project 3: Reading Order and Boundaries
Project 3 is more of an exercise in organizing shapes and abstract elements in three-dimensional space by color choices. The idea is to take the same composition and make it look as different as possible from the other by color alone.

A variation on this project asks the students to compose a word, but scramble the order and size of the letters so that the only thing that can order them correctly is color read front to back. In this solution, the same composition yields the words DARE, DEAR, and READ.

Project 4: Calendar
In this project, we examine what we really mean by a system.

We discuss the roles that systems and intuitive processes have that allow for order and play, in setting up possibilities that cannot be preconceived.

We will design a calendar that inherently has a function that requires viewers to navigate it. I show alternatives to the norm, because they inevitably want to make their system have boxes for writing in like they are used to seeing.

They will first play with a system, composing the page. They are cautioned to leave healthy negative spaces. Then they choose color with ratios that can allow groupings of similar and dissimilar properties. Color can be used to show a narrative about the month, but any shapes must be abstract so color that color again does the work. For meaning, color can tell a story about the month that is personal or universal. Text can be added at the end if they wish. We printed enough copies for everyone to bind a calendar. They are critiqued and analyzed in the same reinforcing vocabulary, with content emphasized through color ideas.

Project 5: Modular System Event Poster
This project tightens the system with more rules. It is also an illustrator construction project. Students must search for a module using color to intentionally create a three-dimensional illusion, making use of transparency, light and shadow, or planes. The module needs to be able to dock to other modules. They are shown examples of systems used by professionals in a related way

that includes mediums of painting and fabrics.

When their pattern is established, they need to find ways of fragmenting it or stopping it so that negative space and different volume sizes are created. There must be room for type elements to be added. Ultimately, they will bring it back to the large poster size and let it interpret one of four events that seems most like their design. While color was used to create depth through flat planes in previous projects, now it can do some realistic depth storytelling, albeit through abstract modules.

Project 6: 3D Résumés
After making an illusion of dimensionality, the next step is to work on an actual three-dimensional grid. This will catch the last remaining objective for the course—color applied to an object in space.

You might recognize this paper fold project from freshmen foundation classes. It has made it into a number of programs, but I have never seen it used for anything except raw paper. Several artists have turned it into fashion design/art such as Polly Verity and Gloria Pizzilli or installation art, such as Andrea Russo and Richard Sweeney. They still respect the paper medium and light and shadow. It makes a natural grid and designers are bound to add to it. We take it up a notch as a color playground.

Our application is going to be very practical. We spend a couple of days in folding demos and models and then I ask them to experiment with a variation of proportions that they find interesting and which can set up areas for adding color and type categories that pertain to their resumes. As sophomores their resumes are pretty light, but that doesn't mean they can't catch someone's attention.

Below you see the sequence. First they find the structure and then see its light and shadow possibilities. Then they try out colors to see what reinforces the planes and what allows type to read in the hierarchy they need. It is then printed and folded. A prerequisite for the resumes is that they must fold flat and fit in a number 10 envelope for mailing (simple, actually because they are all based on an accordion fold). Some use color to disguise the folds and others accentuate it. Some allow hidden color on a vertical plane to throw a glow on a white area. Sometimes it is also becomes important to let the paper alone in places for rest.

Payoff
Because of the reinforcement of vocabulary and attention to color in this series of projects, I have seen students in our upper levels work with more sophisticated color in subsequent projects, be it identity, such as the farmer's market brand, or a complex poster, information graphics, or even group projects, such as a large traveling multimedia exhibit.

Looking at Art: Themes in Creative Process

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Introduction

Because designed products and places exist in the context of contemporary culture, designers must function in a broad field with knowledge of contemporary practices in the fine arts. Knowledge of contemporary art deepens not only the designer's understanding of contemporary culture, but also expands the designer's sense of purpose and working process.

In his essay, "Creative Risk Taking," originally published by *Landscape Architecture* magazine in 1983, Steven Krog asked "Why… are there so few fascinating, new landscapes?"(Krog 2002, 58). Krog answered his rhetorical question by describing the landscape architect's dependence upon an accepted design process of "methodical analysis of program, site, and their fit," coupled with a reluctance to take creative risks (59). Krog states that the "process of deduction" can only satisfy the "functionalist" requirements of landscape, not the requirements of innovation needed to create exciting places (59-60).

Krog suggested that twentieth-century minimalist art might offer clues to a new working process capable of digesting complexity and arriving at inspired results. He ends his essay by outlining the obstacles to practicing landscape architecture like art, asking, "Why isn't landscape architecture nearer the artistic mainstream?" (64). This question he leaves largely unanswered, suggesting only that landscape architects should look beyond their own built works for inspiration and conduct more research and experimentation. Krog's final recommendation is that landscape architects recognize that works of aesthetic genius are rarely created by groups and instead result from what art critic Herbert Read called "solitary activity" (Krog 2002 and Read 1966, 3).

We hope to provide an instrumental answer to Krog's call to bring landscape architecture nearer the artistic mainstream. This paper presents a structure for teaching landscape architecture design and graphic communication through the study of contemporary art and the practices of fine artists. We have arrived at this structure through inductive reasoning. Observing the work and practices of many contemporary artists, we theorize that their successes, while quite different, depend upon five themes of the design process: observation, intuition, craft, play, and communication.

This approach of 'looking at art' blurs the distinction between artist and designer for the purpose of encouraging more inspired design. By studying the work and intentions of contemporary artists, with an emphasis on the five aspects noted above, students increase their awareness of contemporary art as a body of knowledge and are encouraged to pursue design as an art practice.

In fall 2009, we adopted the structure of 'looking at art' in three courses. The first, taught by Jon Hunt, was a two credit hour course in design graphics and visual thinking. Hunt structured the course around a sustained exercise in observation, inspired by the paintings and drawings of Frank Auerbach. The second and third, taught by Katie Kingery-Page, were a paired design studio and seminar titled "Landscape and Contemporary Art." Kingery-Page built the courses around seminar readings and video-screenings on artists work and practices. Knowledge of these artists' creative processes served as a background for student work in the design studio. In Hunt's graphic course, efficacy of the 'looking at art' approach was judged by the quality of ongoing drawings and final communication. In Kingery-Page's studio and seminar, efficacy was judged by final communication —design drawings, models, and built work—and also by student feedback on the 'looking at art' approach.

Creative Process and Observation: Frank Auerbach

Examining specific artists' habitual observation methods, students gain an appreciation for seeing and documenting reality. While artists have historically examined existing reality, design is concerned with producing an unborn reality. Students learn the value of observation by studying an artist like Frank Auerbach, whose observation practices "reject … ideas which are possible to preconceive" while "destroying images that lie" (Lampert et al 2001). During his painting process, Auerbach scrapes all paint or erases charcoal applied to the canvas the preceding day. As he scrapes and starts anew, he develops a stronger understanding of his subject. He investigates, draws, and paints the same models, again and again, on a weekly basis for multiple years. Through this repetitive observation practice, Auerbach states, "It's my way of working. Every time I scrape all off I know a bit more…One then paints it all in one breath."(Greig 1998, 77). He explores the subject through a visual, emotive, and sensual lens. From one sitting to the next, he "excavates the subject further" (Cork 1988, 15). During these studies, he observes how the models' physical

appearance alters over time, their moods change, and how the studio lighting affects the models' physical appearance. With an overarching goal, he aims to "grasp reality and get it down in paint" (Peppiatt 1988, 50).

Creative Process and Communication: Frank Auerbach

Frank Auerbach reveals and communicates an emotional and sensual experience of reality and his understanding of the subject. One technique utilized by Auerbach is an impasto; a technique to apply substantial amounts of paint to the surface of the canvas with use of a palette knife or brush. This method provides texture and a three-dimensional, sculptural quality to the painting while allowing light to reflect, purposefully and expressively, revealing the process and building methods. With the impasto technique and his mark making, Auerbach is attuned to mood, mass, and atmosphere (Feaver 2009, 16). His heavy use of mark making, with his brush or with charcoal, in his work guide eye movement across the canvas or drawing. Auerbach looks at these marks "… for the features and continuities they suggest … The marks were scribbled reactions; in the paintings they override every prospect, surfing the image, conducting the eye" (16).These marks communicate energy and the physical characteristics of the subject while revealing his intuitive working method and his perceptual understanding of his subject. Auerbach's marks "… rained down like parting instructions delivered with whacking force and tickles of precision, come the masterstrokes, the marks describing the feel of the back of the head, the pressure on the neck, the indelible features (tip of nose, jut of chin), and, touchingly, what may be presumed to be the frame of mind of the sitter" (19).

Creative Process in a Graphics Class: Student Work

During a foundational Graphic Design and Visual Thinking course, students examine Frank Auerbach's observation and documentation methods. Students then select a place to study frequently over a seven week span. During this intense study, students are instructed to observe and explore the physical nature of the place. In the beginning, students have difficulty focusing. They are overwhelmed with the complexities of their selected sites. Students lack self discipline to sit, to observe, and be attentive to their surrounding environment. Often, they feel the constant need to move, walk, and explore other sites. Because of these concerns, students are reminded of Auerbach's repetitive methods to observe his models. Over time and with practice, students develop concentration skills and temperament to observe their selected site in detail.

In the beginning, student documentation reveals their lack of focus and hand skills. Their drawings, flat and lacking perspective views, are simplified and misrepresent reality. Their mark making simply fills the page. Drawing inaccuracies also are a result of the students "inability to make correct decisions about what visual information to represent and how to represent it" (Cohen 1997, 611). Auerbach's methods, scraping and re-scraping to correct false impressions, educates students to identify their perceptual errors and to rework until the rendering corresponds with reality.

As students practice Auerbach's means of documenting reality, their drawings reveal growth in observation and hand rendering skills through their mark making. The student drawings reveal, over time, their understanding of texture, form, and value through enhanced detail added to their drawings.

The student mark making identifies connection to the reality that they observe and grasp. "The form of drawing," Caroline Lavoie writes, "… is not about how to *do* but rather how to *respond* to the relationship that students

**Portrait of Sandra, 1973-4
Frank Auerbach, 1931-
mixed chalk on paper**

Source: ARTstor Collection
www.artstor.org

**Head of J.Y.M., 1984
Frank Auerbach, 1931-
charcoal on paper**

Source: ARTstor Collection
www.artstor.org

**Head of E.O.W., 1955
Frank Auerbach, 1931-
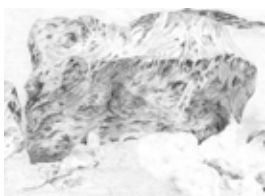oil on Canvas**

Source: ARTstor Collection
www.artstor.org

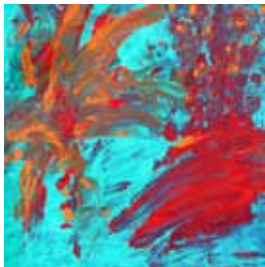**Week One Drawing Study
by Sarah Craig,**

Week Three Drawing Study by Sarah Craig

Week Seven Drawing Study by Natalie Martell

Emotional Quality of site Study by Kyle Koehler

establish with the landscape…" (2005, 26). Lavoie continues:

> …[Drawing teaches students to] communicate their perception, and thus their interpretation, without first using computer renderings or photographs. Drawing on site allows them to become part of the third (depth) and fourth (time) dimensions: they will perceive the side planes rather than unique front planes; they will see and feel how a place changes with time, sun, and shadow. The rendering may or may not be what the students had in mind or what they think of as beautiful, but their knowledge of a particular area will increase the memory of what happened to their bodies as they drew. The actions prior to design thus become *perception* at first, *interpretation* as they draw—a form of analysis— and then *reflection,* what it meant to be there" (2005, 26).

At the end of the seven week drawing exercise, student work reveals stronger hand and eye coordination and student self-commitment to the drawing. The drawings reveal a selection process by the student. Students choose to reveal or omit visual information of their site to express their visual understanding of site, their appreciation for the aesthetic and ordering principles, and desire for clarity for their composition.

An emotional connection to the environment is one of the most powerful sources of inspiration. The physical, emotional, and tangible experiences strengthen the students' relationship to and understanding of the environment. Many students revealed, through multiple means, how they were influenced by this haptic and visual experience within the site. All identified with the environment depending on the emotion that the landscape induces on the student (Nillson et al 2008). Students communicate this understanding by experimenting with other mediums to build their visual language. This experiential mark making communicates and reveals the students desire to express their understanding of the site. Students clearly demonstrated an emotional investment for their site through their renderings.

Katie Kingery-Page led two courses structured by 'looking at art' in fall, 2009. These courses, a five-credit hour landscape architecture design studio paired with a two credit hour seminar, allowed graduate students to take a specialized semester of study in "Landscape and Contemporary Art." Seminar readings and video-screenings of the work of more than twenty different artists served as a backdrop for design projects in the studio.

Two artists in particular, Kiki Smith and Gabriel Orozco, both featured in Season 2 of the Public Broadcasting Service documentary series, *Art in the Twenty-first Century (Art 21)* shared common themes of intuition, craft and play in their working processes. In the succeeding pages, these themes are defined and expanded, with supporting excerpts from the artist interviews.

Creative Process with Intuition and Craft: the Work of Kiki Smith

The late European writer Arthur Koestler described intuitive ideas as "the unearthing of hidden analogies" or " '…associations suddenly made by the unconscious mind' " (1984, 200 and Loewi quoted in Koestler 1984, 206).

Kiki Smith relies upon the internal stimuli of intuition to generate her sculptures and prints which depict "…the body as a receptacle for knowledge, belief, and storytelling" (Public Broadcasting Service). Describing her intuitive muse, Smith says, "It's like standing in the wind and letting it pull you whatever direction it wants to go….I have lots of times where my work just said, 'Make it like this.' And then it's like you're a faithful servant. I make

this meditation or give myself to this work" (Smith, Prints 2003).

Students viewed the *Art 21* interview with Smith, shown working with molds, wax forms, and metal castings at a foundry, as well as seated in her home studio. In the interview, Smith states that she is sometimes "embarrassed" by what she feels compelled to make, underscoring her reverence for internal stimuli and her willingness to follow ideas that may seem strange or absurd if considered only from a strictly rational point of view (Smith, *Art 21* 2003).

In discussing her work, Smith does not separate the intuitive genesis of a work, be it a dream or waking thought, from the product of her work, the art object. "[Art-making] is just a way to think," says Smith (Prints 2003). She does, however, acknowledge that coupled with intuition, labor completes the creative process:

> One second you have an idea to make things and then you have to actually do them, and that takes hours and hours of time to do it. A lot of it's just like scratching on things or 'smoothening' it. It's not that interesting. A lot of it is just labor. But the labor part… makes me feel free. I enjoy that the most (Prints 2003).

Sociologist Richard Sennett defines craft as a "the desire to do a job well for its own sake" (Ramljak 2009, 46). Smith's statement on labor, footage of Smith at work, and her completed pieces reveal her regard for craft within the creative process. Sennett also promotes a high regard for craft. He questions cognitive psychology's focus upon language, claiming this focus results in a 'blindness' to the significance of "physical or manual experience" (Ramljak 2009, 48). Sennett believes the result is "…poorly made objects and a degraded physical environment" (48).

Creative Process and Play: the Work of Gabriel Orozco

Play is an activity that embodies both intuition and craft. A person at play eschews logic and embraces unconscious thought. When at play, a person acts for the sake of doing— for the joy the action will bring, not for a distant reward. Mexican artist Gabriel Orozco's work is influenced by the external stimulus of his daily surroundings. He does not have a traditional studio. Instead, he assembles the teams and tools he needs, or travels to a production site in order to realize his ideas (Thinking 2003). Footage of Orozco from the *Art 21* series shows him wandering through a city, rummaging through dumpsters, picking up stray debris from the pavement, snapping pictures of his chance finds. He arranges what he finds: a plastic bottle rendered flat by traffic propped against a wall, photographed, moved, and photographed again. As we watch, he makes aesthetic play through a process of trial and error.

Orozco says his work is about "in between space" (Thinking 2003). 'In between space' can literally be seen in his work, for example, the space between leaves and the voids made by hands in clay. But the 'in between' can also be understood metaphorically as play, the part of life between work and obligations to family (Orozco *Art 21* 2003).

Orozco relates play to movement, which is central to many of his pieces, whether they are activated by the motion of the participant or because they are the direct imprint of force in motion. Like Kiki Smith, Orozco integrates intuitive thinking and the work of craft: "…the thinking process is related to the body in many ways…[kinetic energy] generates stimulus in your brain …the shape [of art] should represent what just happened before" (Clay 2003).

Artist Kiki Smith in Pace Wildenstein Gallery with Gang of Girls, Pack of Wolves installation, 1999
Thomas Hoepker,
photograph

Source: ARTstor Collection
www.artstor.org

Born, 2002
Kiki Smith, 1954-
bronze
photograph by Larry Qualls

Source: ARTstor Collection
www.artstor.org
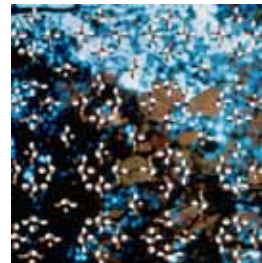
Light through Leaves, 1996
Gabriel Orozco, 1962-
photograph

Source: ARTstor Collection
www.artstor.org

Oval Billiards Table, 1996
Gabriel Orozco, 1962-
wood, slate, felt, mixed media

Source: ARTstor Collection
www.artstor.org

My Hands are My Heart,1991 Gabriel Orozco, 1962- photograph

Source: ARTstor Collection www.artstor.org

Tracing of site utilities by Kirby Barrett and Russell Ploutz

Model by Krystal Schuette

Model by Ali Gerth

Model by Ben Carlson

Creative Process in a Design Studio: Student Work

By exposing the students to Smith and Orozco's work, Kingery-Page hoped the students themselves would develop reliance upon intuition, devotion to the labor of craft, and playful reworking of ideas through trial and error.

To apply intuition, craft, and play to creative process, the fourth year landscape architecture students enrolled in the "Landscape and Contemporary Art" courses completed a five week project with artist-in residence Dan Snow.[1] Dan Snow is a master 'waller' in the dry stone tradition and an environmental artist (Snow 2001). Dan Snow planned to build a dry stone sculpture using local limestone, with the help of the students.

In the three weeks prior to Snow's arrival on the Kansas State University campus, the students became familiar with the project parameters and the proposed site, then working 'as artists,' created individual proposals for a site-specific work of art. Parameters included type and amount of material (about twelve tons of limestone) and dry stack (mortar less) construction techniques. The proposed site is a green sliver in a small quad bounded by the Beach Museum of Art and other campus building.

The site is both open and restrictive. It's setting, surrounded by heavily used campus sidewalks and directly adjacent to the museum's entrances, is ideal for a public sculpture. The site character is pleasant, including many mature shade trees, a gentle grassy slope, and the enframing architecture of the museum. But as with many campus quads, the open space above protects utility infrastructure underground. The site is criss-crossed with utilities, the most limiting being shallow irrigation and electrical lines.

The first phase of the creative process combined what landscape architects commonly call 'programming' and 'site analysis' with intuitive sensing of the site and materials. First, each student visited the site and recorded immediate, intuitive responses and ideas by sketching or taking photographs. Next, a rational process of inventorying, then analyzing, project and site data occurred.

With the first phase as background knowledge, Kingery-Page asked each student to work intuitively, generating ideas through 'play' with model building and drawing. Kingery-Page hoped her students would draw from the intuitive and playful processes of artists Kiki Smith and Gabriel Orozco. The students were asked to first create un-scaled, quick models and sketches, then later, to model the sculpture as it would be situated in the landscape.

The students worked with the knowledge that they would eventually present their ideas to Dan Snow. Snow was open to viewing the student work and considering their ideas. He also reserved the right to make his own proposal, and ultimately, to determine what would be built. The students were asked to craft a large, singular image of their proposal as well as a refined model in order to communicate their ideas to Snow.

Following an afternoon 'salon' with the students, Dan Snow created a clay model of his vision for the sculpture. The following morning, he

unfolded his idea. The sculpture of two freestanding walls served as a foil and a display for scholar stones—rocks of unique character popularized in traditional Chinese gardens beginning in the Song dynasty (Little 1999). The stones would be suspended between the two walls, creating a visual mystery of seemingly weightless mass. Immediately, the students and Dan began to work intuitively on the site, laying out the sculpture's footprint using yellow paper. Serendipitously, the location most favored by Dan and the students for site lines, views, and the right 'feeling' was also the prime location in avoidance of utilities and tree root zones.

The following Monday, the labor of craft began. Dry stone construction begins with the selection and shaping of stones. Through this laborious process, students learned what a proper stone 'face' should be. Students, working by shift in teams of four, prepared stone and wall footings under Snow's expert guidance. Next, Snow instructed the small teams in the craft of dry stack walling. The wall rose, but slowly.

For several days, the wall steadily emerged from below ground, layer by layer. Dan Snow, the master craftsman and artist, taught the students his craft, a process of precision to create the walls in a 'doubling' style. Snow worked later and longer than the students, smoothing any mistakes and bringing the wall to a point of readiness for the next day's practice. After six days of continuous building, the sculpture was complete.

Richard Sennett notes that our "degraded environment" is perpetuated through an "industrialized" model of education, in which speed is valued over craft (Ramljak 2009, 48). The Dan Snow experience was the equivalent of 'slow' design education for the students. First, the students steeped in the work and practices of contemporary artists, notably Kiki Smith and Gabriel Orozco. They proceeded to immerse themselves in the site and materials, both intuitively and rationally. They adopted the attitude of play in their creative processes, working with crude models, by trial and error. They carefully crafted not only presentation drawings and models (quite common in landscape architecture curricula), but also, with Dan Snow, crafted twelve tons of stone rubble into a site-specific sculpture.

Sennett is careful to note that craft is not only the perpetuation of dusty traditions. Sennett includes any work 'done well for it's own sake' under the umbrella of craft. He cites "…Linux programmers and their chat rooms, which involve highly focused work on a concrete project" as a contemporary example of craft (49). Art making with Dan Snow provided a concrete project for the design studio.

Although Dan Snow's craft is the long-standing tradition of dry stone walling, Kingery-Page also promoted Sennett's broad theory of craft by exposing the students to the contemporary creative processes of Kiki Smith and Gabriel Orozco. Asked for their opinion of studying contemporary art in landscape architecture classes, students replied:[2]

> The videos about contemporary artists … brought a different perspective which was more conceptual, opinionated, and free from some of our limits as landscape architecture students.

> Before taking this class I had little to no exposure to the work of contemporary artists. As a spatial designer, I will now look to art as something visionary.

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[2] Fourth year MLA students Lee Adams, Kirby Barrett, Ben Carlson, Alli Gerth, Rebecca Ingram, Emily King, Russell Ploutz, Jonathan Ryan, Krystal Schuette, Kyle Ward, and Laura Weatherholt participated in the Landscape and Contemporary Art studio and seminar.

Singular image of a site-sculpture proposal by Russell Ploutz

Laying out the sculpture

Photo: Katie Kingery-Page

Wall rising

Photo: Katie Kingery-Page

**Scholar's Rock, 2009
Dan Snow
dry stone**

Photos: Allan Goodman

The programs [on contemporary art] were extremely relevant and interesting. The Kiki Smith program really helped me to think about how I work as a designer. Kiki Smith is obviously a very intuitive designer and she allows herself to work that way. This is something that I would like to see more of in landscape architecture.

Asked for general comments on the studio course while completing an instructional quality evaluation, roughly one third of students chose to write about the Dan Snow experience, citing this exposure to craft as their favorite part of the course.

Conclusions

We developed the structure of 'looking at art' to inform creative process from the work and practices of many artists, including Frank Auerbach, Kiki Smith, and Gabriel Orozco. We applied this framework to teaching three landscape architecture courses.

Like artists, student designers are ultimately judged by their final products. In a graphics course, applying the 'looking at art' approach resulted in a steady increase in drawing skill through sustained observation, demonstrated through student work. Drawing is a foundational skill for all design. Through drawing, students learn the aesthetic and ordering principles of design. Students learn that all design is a process, a means through rethinking, reordering, and intuition, to create a well crafted final outcome.

In a design studio, 'looking at art' resulted in many skillful drawings and models of intuitively developed sculpture ideas. Although none of the student sculpture ideas were built, the students helped Dan Snow complete his *Scholar's Rock* sculpture. In the process, the students engaged in a traditional dispersal of craft, from master to apprentice. The students also demonstrated their new awareness and knowledge of themes in creative process, particularly intuition and craft, through written reflections upon their experience.

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Teaching Web Design and Design Pedagogy

Sunghyun R. Kang
Iowa State University

Haelnn Lee
St. Cloud State
University

SooYun Im
University of Wisconsin-
Eau Claire

Renee Meyer Ernst
St. Ambrose University

Panel Discussion Abstract
The advent of the web brought tremendous changes and new experiences in our every day life, not only regarding how we communicate with one another but also how we conduct our business activities. Often, great visual design is not necessarily the best or most appropriate for web design due to technical and usability issues. Also Web as interactive and virtual communication space requires deeper understanding in human behaviors, cognitive psychology, and cultural anthropology. How design education can effectively accommodate such specific requirements to equip students?

This panel will discuss how to incorporate web design into a traditional graphic design curriculum. It is the belief of this panel that both approaches are necessary to achieve a well-prepared, technologically proficient graphic designer with sufficient knowledge in web design. Panelists will discuss specific topics and approaches they have taken to integrate web design into graphic design program.

Four topics; Web Design and Design Elements; Web Design and Design Consideration; Web Design and Technology; and Web Design and Usability will be presented and discussed by four presenters who are currently teaching web design in higher education.

Panelists:
SooYun Im, Assistant Professor
University of Wisconsin Eau Claire, 4 year, Pubic
Presentation topic: Web Design and Design Elements
How do students apply graphic design knowledge to web design process?

Renee Meyer Ernst, Assistant Professor
St. Ambrose University, 4 year, Private
Presentation topic: Web Design and Design Consideration
Web as a global media, understanding target audience is very critical. How these issues can incorporate to the web design course?

Haelnn Lee, Assistant Professor
St. Cloud State University, 4 year, Public
Presentation topic: Web Design and Technology
Coding and programming to make a working website is a great challenge to graphic designers. How and what would be covered in web design in graphic design curriculum?

Sunghyun R. Kang, Associate Professor
Iowa State University, 4 year, Public
Presentation topic: Web Design and Usability
A website should be easy to understand and navigate. How to address usability issues in the web design class?

Design Thinking and The Future of Design Pedagogy

Joseph Digioia, MFA
Professor, Graphic Design
Savannah College
of Art and Design

Abstract

What is the buzz surrounding this thing called "design thinking"? Where has it come from and why should we care? All very good questions given that it is hard not to see a new publication or twitter post that does not mention it in some way or another. For many this is a familiar phrase while for others this may be the first they have heard of it. Either way, it should be something that all design educators consider as part of their teaching methodology so that our students are amply prepared to become the leaders of the next design revolution.

The past five years or so have brought about seismic shifts in the way that business is done both here in the U.S. and abroad. Old business models are no longer looked upon as ways of achieving innovation in the market place. Many of the leading companies such as Apple, Proctor & Gamble and Steelcase have achieved great success in these challenging times by incorporating the "tools" of design thinking. These companies have leveraged the ways of design: holistic thinking, collaboration, empathy, prototyping and user experience, (just to name a few) to build strong brand positions and product lines that continue to outperform the competition. But if we were to look at the curriculum of most design degrees we would hardly find any of these words. Why is that? Well, most design curriculums are built on the premise that the designer is an artist or craftsperson. This idea has lead to designers being looked upon as "other", especially when it comes to our relationship to business. Instead of designing the business model/direction, the designer is usually asked to style it.

How we, as educators of future designers, think about our curriculum, will directly impact this trend. We can continue to teach style or we can teach the redefinition of problems. The opportunity is before us; let us reconceive our definitions of design.

Questions

Two years ago I began an investigation into a direction that I felt the discipline of graphic design was heading. I had read Daniel Pink's book "A Whole New Mind: Why Right-Brainers Will Rule the Future" and was intrigued by the idea that designers will be the leaders of the next generation. Mr. Pink's premise was that the designer skill set which included story-telling, empathy, value through meaning, to name a few, were the skills needed for the next generation of business leaders. He stated that jobs that could be automated, such as computer programming, would soon lose their position as highly regarded jobs because of the fact that a computer can now write code at a speed of over 400 lines per second instead of 400 lines per day as their human counterpart can.

This led me to question what I was teaching on both the graduate and undergraduate level. Having come to teaching by way of practice, my goals were always wrapped up in the idea of pragmatism. How could I teach my students actionable skills that they

could then own and bring to the marketplace? Most of these skills were based on the basic premise of "correct"[1] formal outcomes that were based on strong conceptual positions. This concept of design and design pedagogy seemed increasingly outdated to me. I had colleagues who where quite interested in other ideas where designers needed to be moving: some were interested in postmodern ideologies such as authorship, while others were interested in the designer as social advocate, while still others were interested in the area of sustainable practices. Depending on the course, I had worked all of these theoretical constructs into my courses along with my "modern" tendencies. But there had to be something else!?

What I was really interested in was defining what would be the skills necessary for my students to thrive in the industry five, ten years from now. I became increasingly dissatisfied with the skills that I was taught and continued to teach. I had always been interested in developing their intellect, but so did every other discipline on college campuses across the country. What I wanted to give them was something different, something much more forward thinking rather than relying on past design models. Concentrating solely on formal concerns seemed so limiting and continued to position the designer as an end-of-the-rung participant in the formulation of the strategic positioning. It seems to state that a designer is a problem solver, rather than a problem seeker. The industrial designer Frank Nuovo stated, "design in its simplest form is the activity of creating solutions". If this is the case then how can designers move to the table where decisions are being made rather than placing a veneer on prescribed strategic decisions?

"Design is no longer a style attached to a project before it is handed off to marketing." –Tim Brown

Another thing that began to gnaw at me was the idea of the designer as 'maker'. How is that I could propagate the idea that what you needed to learn was how to make more "stuff"?[2] I was (am still am) constantly reading articles stating that at our present rate we will need five more planets if we do not find a way to curb our consumption/production/waste model. Designers, and the business of design, are certainly part of this problem and only sometimes creating solutions toward this pressing issue. This needed to change.

Design?
One of the things that became apparent to me was that I needed to reconceive my understanding of (graphic) design.[3] My research took me to many places and one of the most striking definitions that I came across was the following from Victor Margolin that stated:

"Design is the conception and planning of the artificial, that broad domain of human made products which includes: material objects, visual and verbal communications, organized activities and services, and complex systems and environments for living, working, playing, and learning."

Here I found a definition that does not include an adherence to the aesthetic, rather an expansion of design as a discipline that can move through different "orders" consisting of objects, communications, activities and services and systems.[4] As we move

further away from objects, toward the third and the fourth order, the designed outcome becomes less artistic and speaks less to the formal qualities of design but instead toward a practice that is much more holistic. This view expands our understanding of design as well as our responsibilities. The designer that moves into these domains must be ready to represent their ideas, not only in form but also through research methodologies that can support final outcomes. Both Margolin and Buchanan state that a designer can work in all orders/areas within the framework of one project. A wonderful example of this is chronicled in the writing of Tony Golsby-Smith, "Fourth Order Design: A Practical Perspective". Here Golsby-Smith not only speaks of fourth order design in theoretical terms but in practical terms showcasing case studies where the fourth order designer can and should practice in. By moving beyond the theoretical Golsby-Smith presents designers with the knowledge that these are areas in which they need to see their place and understand the changing landscape of design.[5]

Design Thinking

About this same time I began to see the words "design thinking" popping up everywhere in design literature. Designers were writing about it in books, journals, blogs, tweets... it seemed as if I could not go a day without bumping into this phrase. Now, whether you like the rhetoric or not, it cannot be denied that it is something that not only designers are interested in. Corporations and non-profits seem to be interested in design thinking as well. Roger Martin, in his book The Design of Business, states that in years to come, the most successful businesses will be those who can balance "analytical mastery" (or rational thinking) with "intuitive originality" to build a design thinking organization. This concept of merging the rational with the intuitive to represent "design thinking" is interesting, to say the least. One of the things that concerned me was how could designers be at the forefront of this movement. Well, if we can go back to Daniel Pink's writing and analyze the make up of the needs of this new "R-Directed" economy you will notice that the attributes are attributes that designers possess in plentitude. Now I am not saying that we own these attributes exclusively but we do them well enough and own them to the point that Mr. Martin states, "Businesspeople do not need to understand designers better. They need to be designers".

If Roger Martin is correct then why is it that so many of the design schools that are feeding the design industry today continue to be connected to art departments and not to liberal art schools[6] or even business schools? Now some, like the D School at Stanford University have taken that step and stated, for the most part, design is too important to be left to designers.[7] What is disconcerting to me is that if we do not understand the importance of design within our own ranks then how can we expect those outside the discipline to give us our just do? The expansion of the discourse of design to areas of society outside of art or form is something that we need to take hold of or someone else will take it for us. Other disciplines have waded into our "space" within the past five years claiming service or experience as their area of expertise. These have always been areas where graphic designers[8] have worked only to be pushed aside in recent years for more specific disciplines. This is an area were the educational institutes and design educators need to understand the changing face of graphic design and continue to develop curriculum that will meet this changing demand.

Design thinking is rooted in a capacity to understand the world and our relationship to it, and within it, in a different way. It is "a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity". It takes the discipline of graphic design out of the realm of surface into the realm of human-centered understanding; it relies less on the designer being told what his target audience needs to the designer truly understanding these needs through ethnographic research.

What does the "artful" designer know about people, beyond what the design brief states? It has been my observation that most of the young designers that I have been in charge of have no idea what research endeavors are. They believe by spending an hour or two on the Internet doing some key word searches that they will have all of the knowledge that they will need to design from. Or, I have seen in my travels, that practicing designers still rely quiet heavily on the focus group as a means of acquiring information about their target audience. I have to believe that it is not only the culture of the industry but also the culture of the educational institute that leads to this.

"Design thinking is a process that endeavours to solve problems and create new
 possibilities, generally by relying on empathic research (studying people to try to
 figure out what they need) combined with creative experimentation and extensive
 prototyping and refinement—all aimed at the goal of producing better, more useful
 objects, experiences, services, and systems. –Warren Berger

Daniel Pink states that those who are able to understand what makes their fellow human beings tick will prosper in the R-directed evolutionary stage. How are we preparing the designers of tomorrow to step away from their computers, into the world, to observe, first hand, how their concepts will work, or if they will work? In my classes over the past six years I have been introducing ethnography and other research methodologies that have expanded upon the usual Google search. My classes and I have been out in the field observing uses of communication and products; we have taken photographs and videos; used online surveys as well as one-on-one surveys; we have storyboarded our observations, mind-mapped, diagramed and prototyped. All of these have helped expand their research positions and knowledge and have lead to more successful strategies.[9]

"The intrinsically human-centered nature of design thinking points to the next step: we can use our empathy and understanding of people to design experiences that create opportunities for active engagement and participation". –Tim Brown

Design thinkers are most interested in "how could we, how might we,...?" This constant reframing of the question/brief is done not necessarily to come up with an "answer" but to posit what possibly could be true, i.e. abductive reasoning.[10] Most professors teach the discipline of graphic design in a linear fashion, rather than stating the interconnectedness of all that goes into any one outcome of design. Because of this particular teaching methodology many students fail to see the interconnectedness of strategy to communication to type to packaging to sustainability, etc. And most tend to forget one discipline from one quarter to the next. If exercises or proj-

ects where presented in relationship to their larger context students may retain the knowledge since all knowledge can then be applied in each and every class.

Clearly this concept presents some difficulty. How does one teach the ideas of "system" as appose to "artifact"? The challenge that we all face is to connect our teaching to this bigger picture. By not only asking, "Why is hierarchy important?" or "Why is color choice important?" but "How do these details relate to the overall position of the [package, poster] so that it is fits into the context of the society it is to be viewed?" as well as, "How will these choices effect the environment in which the outcome is to live?" Whether it is the design of a book, the design of a brand strategy or the design of a new healthcare system, if it is not looked at holistically then the details will never really matter.

By teaching our students the concept of systems and providing them with the methodologies to research and conceive of the design outcomes beyond the notion of the artifact we will be giving them the tools to prepare themselves for the coming generations. Beyond that we will be positioning the discipline of (graphic) design to take on a greater role in society.

"The need for design has never been greater." –David Butler *2009 AIGA National Conference*

Notes
1. Read Modernist ideas of form.
2. See the "Story of Stufff", www.storyofstuff.com
3. The dictionary definition of design is as follows: 1. to prepare the preliminary sketch or the plans for (a work to be executed), esp. to plan the form and structure of; or 2. to plan and fashion artistically or skillfully.
4. Margolin is not the first person to expand his concept of design. J. Christopher Jones was one of the first to do so in his book *Design Methods* followed by Richard Buchanan in his writing "Wicked Problems in Design Thinking".
5. One of the more interesting things to note are the dates of most of this writing. The Golsby-Smith article was published in 1996.
6. Again see "Wicked Problems in Design Thinking" and "Design and the New Rhetoric: Productive Arts in the Philosophy of Culture".
7. This is my own hyperbole, not the D School's.
8. One of the main issues that the discipline has is this moniker that, to me, places it at a disadvantage. The qualifier of "graphic" states that the work of the designer remains in the order of surface, or even worse, style.
9. Sorry, but I have not developed metrics for these finding to date, but will be looking for ways to quantify this position.
10. See Roger Martin's book where he refers to Jennifer Riel's writing entitled "Why you have never heard of Charles Sanders Peirce"

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Stop Teaching Design!
The Intangibles Make Great Design Leaders

William Padgett
Syracuse University

SLIDE 1 (Title slide)

Abstract

Stop Teaching Design!
The Intangibles Make Great Design Leaders

Why is it with the tens of thousands of designers graduating each year we don't have more great designers taking a leading role in business and making a valuable impact on society?

We shouldn't be just teaching the design fundamentals: the design process, typography, color, and layout but rather instill the intangibles that can propel good designers to be design leaders, not just a visual superstars. The intangibles I am referring to are the things that might be said about you in your eulogy:

> *"…having a great work ethic, a caring family member, team player, a life-long learner, self-reliant, a community leader, a passionate designer, a great collaborator, a friend and colleague, sharing knowledge, a global citizen, a true creative, a firm yet sensitive employer, a mentor, a tough but ethical competitor, and an all-round nice person."*

Rarely do you ever see any of these attributes in a syllabus yet they are the most important things that you look for when hiring a young designer to your team. The portfolio opens the door but these intangibles get you through it. Once a designer is hired the portfolio goes in the closet and it is the intangibles that are in it for the long haul.

Design educators should be more like coaches than teachers. After we teach the design basics, then allow the students to play, giving them the freedom to create their own curriculum but also having the responsibility to perform at a very high level. How do you create a culture revolving around intangibles and how can they be woven into a curriculum? What are the holistic strategies and techniques needed to implement them and how do we evaluate success? We have to stop teaching design and start building design leaders.

This paper was presented by William Padgett, Associate Professor, Communications Design, Syracuse University at the University and College Designers' Association Education Summit conference "Designing Designing: How we do what we do." on June 3, 2010 at Kansas University, Lawrence, Kansas.

SLIDE 2

SLIDE 3

SLIDE 1 (Title slide)

Welcome. Thank you for coming.

SLIDE 2 (Lead Quote)

I read this somewhere over twenty years ago, I never forgot it. I'm sure that the numbers have changed by now.

Where do the other graphic design grads go? Did they drive cab, work in their uncle's print shop, flip hamburgers, or end up in "non-quality" design jobs?" This was my first glimpse of graphic design dividing into two separate paths. One that was upper, "white collar," that lead to design strategists, managers and creative directors. The other, lower "blue collar," non-quality design production jobs.

Over the years we have also debated if graphic design is a trade or a discipline. We yearned for the professional respect that other disciplines, like architecture, have enjoyed for years and even debated licensing designers.

We all want our students to be professionals and design leaders. But what makes up a design leader?

He or she, first, should be an excellent designer. They should have a vision, the know-how to communicate that vision, and have the savvy and be driven enough to get things done. Design leaders rise to the top of the discipline and move it forward.

Am I responsible for my students getting a great job or making them great designers? Or both?

I passionately taught my students everything from asymmetrical design to Hermann Zapf. I thought that I taught them design, with a capital D, but they wanted me to, "Teach me the stuff I need to know to get a job." I realized I was just "training" them.

So here we have it: a lot of "trained" designers entering in a field that has a major identity crisis, few quality opportunities, and a short supply of potential leaders we need to affect change on design and the world. Now, what could we do about it?

I remembered something I read way back in college:

SLIDE 3 *"I hear and I forget. I see and I remember. I do and I understand."*

The first line would be my lectures. The second are any readings and demos. The third is the process, an area where the good stuff happens, the Ah-Hah moments live there. This is the place where understanding occurs and I wanted to play there.
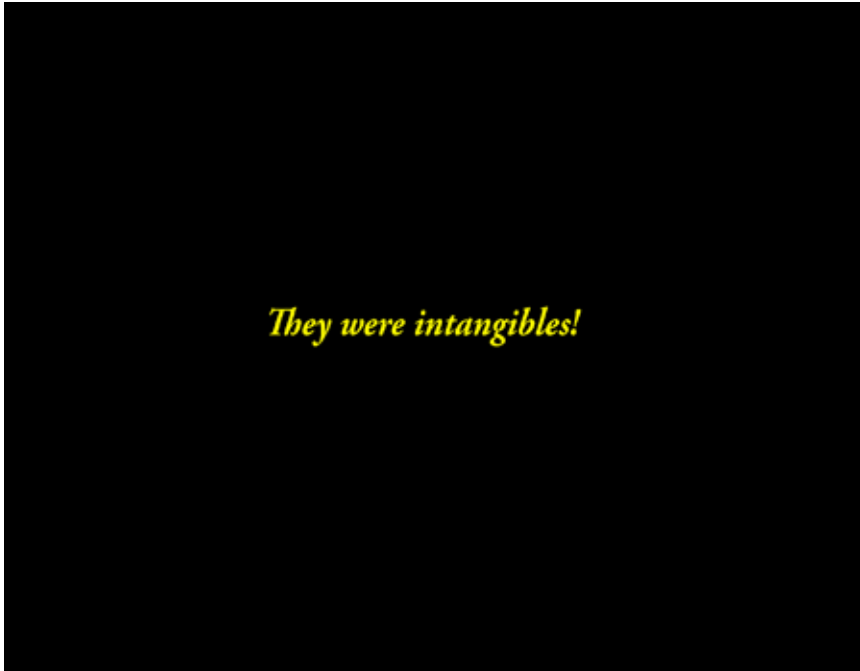
SLIDE 4

SLIDE 5

I also noticed that many students were just going through the motions and had little self-motivation. I wanted them to have an overwhelming passion to design and to learn. The drive to be a great designer should be on the DNA level.

Add to that, they weren't very professional, they were behaving like students. Training students doesn't make them professionals. You have to treat your students as professionals from day one!

Knowledge without passion is an engine without fuel. And what was that fuel?

Well, it is made up of things that were more about the person than the designer. It was things that constitute a fantastic human being who just happens to be a designer. What are these things and how do we teach them?

SLIDE 4 *They were intangibles.*

I needed more info and went to the usual place to get it…

SLIDE 5 (pix of dictionary)

 "…{intangibles} affect performance but are not readily observable. They are often cited as a reason for performance which is surprisingly better or worse than expected. An asset, an abstract quality or attribute …intangibles are hard to value."

Looking back here's how I see "intangibles." It's all those things you really can't "teach" your students but are the MOST important stuff for their success. Those are the things that we need to instill in our design students that reside near my DNA sweet spot.

They are best described by the words that might be spoken about you in your eulogy. "He or she was … fill in the blank."

Intangibles are most important things about you: the things you want people to remember you by, the things that drive you, define you, and affect you and everyone else. They describe the many hats you wear in life. They are you.

SLIDE 6

SLIDE 7

SLIDE 6 (my list of 140+ intangibles)

These are some of the intangibles my students take with them for life when they leave Communications Design.

Intangibles have always been around. They are ubiquitous, deep-rooted, defining, but hard to see and difficult to nail down to quantify. We don't focus on them because there are no processes, no classes, no tests, or no accurate standards for them. In academia, and the world, the measured, rules.

If you can't see intangibles, can't measure them, and can't teach them; then how can we instill them to our design students?

And what do we mean by instill? I found a great definition: "to infuse slowly into the mind or feelings." Almost a Zen thing.

It is a student's strong design portfolio that is the key that unlocks the door to the design discipline. However, I believe that it is the intangibles that propel them through that door to successes as design professionals. Once established, it is those intangibles that set in motion all the necessary attributes needed to become design leaders.

Here are a few things we have done to facilitate intangibles.

SLIDE 7 **Don't teach design!**

We shifted a lot of our emphasis from that "training" stuff, to creating class and studio environments that could better foster these intangibles. We didn't give up our design content but tried to find ways that student's would "discover" knowledge. Our students do their work entirely outside of the classroom, in classes are only presentations and critiques. Today you can learn anything you need to know about Graphic Design without ever setting foot on a college campus. You can get it just about anywhere. Create opportunities for the students to ignite that desire and the passion to find it. Information is out there, on the web, in blogs, DIY videos, online courses, in books and magazines, free lectures and even, from the person sitting right next to you. The students who want to learn, will learn no matter what. The ones that don't, have to be mentored by the good ones. They are in charge of getting their own knowledge. When you want to know something, and learn it yourself, it's forever.

SLIDE 8
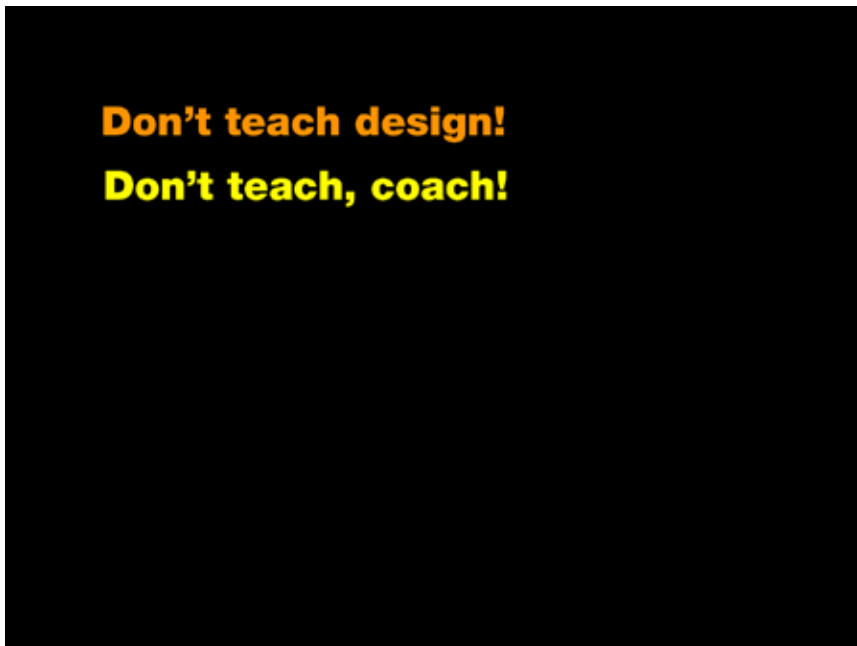
SLIDE 9

Our sophomores need to know design history. Most programs "push" the content in a semester long, snooze session in a dark room with a lot of slides, which passively involve the students. We involve our students through project-based learning in order to have the students "pull' the content.

SLIDE 8 (Design History Exhibits)

We assign our sophomores to design a major exhibition on design history. The class breaks into teams, each team focusing on a major topic research all of the content with each student responsible for their own sub topic. They have to design the space, edit and proofread all the content, build a scale model and promote the exhibit. Then they have present it to the university in an actual exhibit made up of their scale models and an accompanying publication containing all their research content. The class experiences the big picture while the individual teams and students become "experts" in their topics.

It is our responsibility to help the students find their passion. More importantly, we have to create the **opportunities** for them to succeed and insure that we instill those intangibles that will fuel that passion for a lifetime.

SLIDE 9 **Don't teach, coach!**

What I do is closer to coaching than teaching. I know, I'm in the heart of Jay Hawk country but my hero is Syracuse Hall of Fame basketball coach, Jim Boehiem.

SLIDE 10

SLIDE 11

SLIDE 10 (the Dome)

For years I've watched his "tough-love" style of coaching to make winning teams. I appreciate the way he yanks a player out of the game immediately after a dumb move, gets right in their face and tells them what they should have done, a wonderful teaching moment. He is a master at getting the most out of all his players.

In practice coaches put their **students** in situations that closely resemble the actual competition. This gives them every opportunity to mess up and learn from their mistakes, also allowing them to take risks. It is a little messy and unpredictable but so is design.

Example: We don't grade anything until the bitter end. This allows the student to redo a project that may have been trashed in a crit. They can redo a project as many times as they want. Learn by your mistakes, make better failures. We love to say and our apologies to Nike, "Just re-do it!"

SLIDE 11 **Faculty should be a team!**

I believe the entire faculty should be on the same page and work as a team. Make sure all of the faculty buy in to your program's strategies and goals that always put the students first. Students are the end-user, so make them happy.

Team-teach all of your classes in your major. This allows every faculty member to have a holistic understanding of the program, rather than their own little part of it.

SLIDE 12
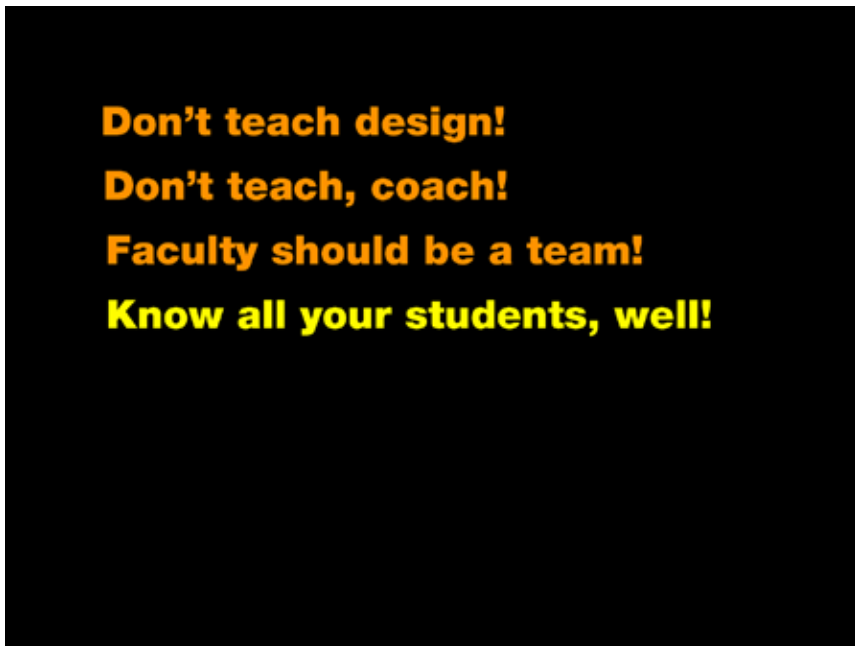
SLIDE 13

SLIDE 12 (CMD352 Presentation)

Team-teaching reveals that there is not just one answer to a problem, that there exist many alternate perspectives and solutions. There are no right answers in design, only solutions that work better than others. Team-teaching is sometimes like tag-team-wrestling, enabling us keeping the content and energy at a very high level because we constantly hand off topics and play off one another's comments. This enables us to cover much more content and our contrasting viewpoints and experiences make critiques stimulating.

We all agree to disagree, but are on the same page programmatically. You have to keep the ego in check where content is king. Our students see the faculty working as a team, it supports the team-building skills they will need when a team project appears, and we have lots of them. In fact, their first project in the major is a team project.

In that very first class in the major, we combine all our sections together in one huge class in the auditorium that is team-taught by the entire full-time faculty from the major. This reinforces that there is no **individual** ownership of a class, we **all** have ownership.

SLIDE 13 **Know all your students well!**

On our first day we take pictures of the student's and they fill out a questionnaire about themselves. I read the questionnaires and memorize each name with a face. During the second class I stand at the front of the class looking directly at each one of them so they can read my lips as I say their name.

SLIDE 14

SLIDE 15

SLIDE 14 (pix of students)

They are no longer anonymous, I know their name before they can remember mine. It is a lot of work for me but they immediately realize that if I do extra-ordinary work to learn all of their names in a week, I then expect them to work hard too. Simple gestures like this are very powerful. They never forget it, the program bond starts there.

The entire faculty must review your student's work often, by that I mean the end of every semester. We review our sophomores even at mid-term. The review sheets rate them on design skills, conceptual skills and their attitude. This document is for the student's eyes only, not to be sent home or the department and it's not a grade. It is an instrument to show the student where their problem areas lie so that they can accurately address them.

Even more importantly, it also allows the entire faculty to instantly see:
How the individual student is doing in the major
How the class is doing as a whole.
How the faculty is doing.

Their last review is before graduation when the faculty take their finished portfolios to the SU Townhouse in New York City. We invite over 2000 design professionals and SU alumni to "review" the portfolios and leave feedback for our graduates. We then place that feedback directly into their portfolio on graduation weekend. Many are already working by Monday.

SLIDE 15 **Let the students drive the truck!**

The content in our Design Strategies class is student driven by our juniors. On the first day of class, we ask the students to come up with their most important questions about design that they want answered. Anything goes, everything is fair game. We get hundreds. The class pick twelve. We assign 12 teams who will then research the problem, come up with answers and present them to the class each week. This class is about creativity and strategies for getting many answers to questions, very right-brained.

SLIDE 16

The following semester is very left-brained. The Design Project Management class is again run by the juniors and takes on the role of an actual design firm. The players are CEOs (us, the faculty), teams, managers, senior and junior designers, account execs, bookkeepers, secretaries, and, of course a real client. We have taken on design projects from small non-profits, like the Harriet Tubman House, a historical museum, to a branding project for the international financial giant, JPMorgan Chase. In this class, learning is under fire with live ammo. At the end, they present their proposals to the client. It's a win-win situation: our class learn a lot in a short amount of time and the client get 20 + designers for 12 weeks solving their problems. In the summer we follow up with interns from the class implementing the class work for the client.

SLIDE 16 (Students in class)

If you give the students the freedom to determine their own future, they will be responsible and do extraordinary things. If they know that **they** have the power, not **us**, to educate themselves, they will rise to the occasion.

Our backbone course is the 18 credit Design Problems, made up of half juniors and half seniors to encourage mentoring. The concept is simple: each credit represents a substantial design project with extraordinary depth and breadth.

But it is the students creating their own unique problems is what makes this class extraordinary. The student's select problems that inspire, arouse their curiosity and are passionate about. One thing I have learned is that students having ownership and authorship in their work, perform better. They are very proud of coming up with things innovative and entrepreneurial.

We encourage the students to define and solve their problem, then execute their solution in a form reflecting the their particular interests. It might be a publication, a packaging project, an information design system, a retail design, an advertising campaign, a website design, an integrated branding system, an exhibit design, and so on. Each project is a student's own personal independent study. Instead of a student reporting to a faculty advisor once a week as done in traditional independent studies, we put them in the classroom. Lot's of them.

SLIDE 17

SLIDE 18

The entire class will be completely involved with each project and involved on all aspects of design through the process of weekly critiques. We want them to be designers first, then to see how the design process can manifest itself through diverse media. The completed class projects make up the content of the student's portfolios, which are as different from each other as our Syracuse snowflakes. Most are renaissance portfolios, a little of everything. Others are specialist's portfolios, focused on the students' passion about an aspect of design that they feel they want to pursue.

What really makes them unique is that each student's portfolio is an example of their personal interests and passions, it is a direct reflection of them. So when a potential employer responds very positively to a portfolio, they are responding directly to who the student is, not just a design solution to a project.

SLIDE 17 **Be vague, flexible and holistic!**

Do as much as you can on a programmatic level. You know what has to be done better that anybody else. Keep those course names, descriptions and requirements generic, which gives you plenty of wiggle room to move. Our courses are Intro to Communications Design, Design Skills and Processes, Design Methods, Design Problems, Design Strategies, Design Project Management, and Design Research. We haven't changed them in 30 years yet change the content and the way we run the classes constantly.

Our students can select many academic and studio electives to get their diverse education. We tell them these are the best design courses they can take. We give them the process while the electives give them the content to use in their work.

SLIDE 18 (Faculty and students)

We approach design holistically. We don't have a course named "Typography" because we discuss typography in every class. You can't separate typography from design, it is an essential part of it, so is idea generation, layout, art direction, and so on. Design appears very simple but is a very complex layer cake of skills and disciplines that the end user never sees. When we critique projects in our classes, we slice through that layer cake revealing the ingredients that make it whole.

A designer at our portfolio review in New York recently told me, "You have one of the best packaging programs in the country." I thanked her and asked her, "How many packaging classes do you think we have?" She thought a bit and then answered, "Two or three?" I replied, "ZERO!"

SLIDE 19

SLIDE 20

SLIDE 19 **It's all about the students!**

It's crazy. Systems and processes several hundred years old are used to educate students for entry into a discipline that is changing as we speak. Academia is a huge "top-down" battleship that is very slow to turn adapting to this change. What I would love to see is a squadron of PT boats that can turn on a dime and are piloted by our students.

SLIDE 20 (Pix of juniors)

If design is going to change the world, as design educators we have the responsibility to change the way we educate designers. We have to create new strategies and build new environments that ignite the passion of learning and, of course, instill those intangibles.

SLIDE 21
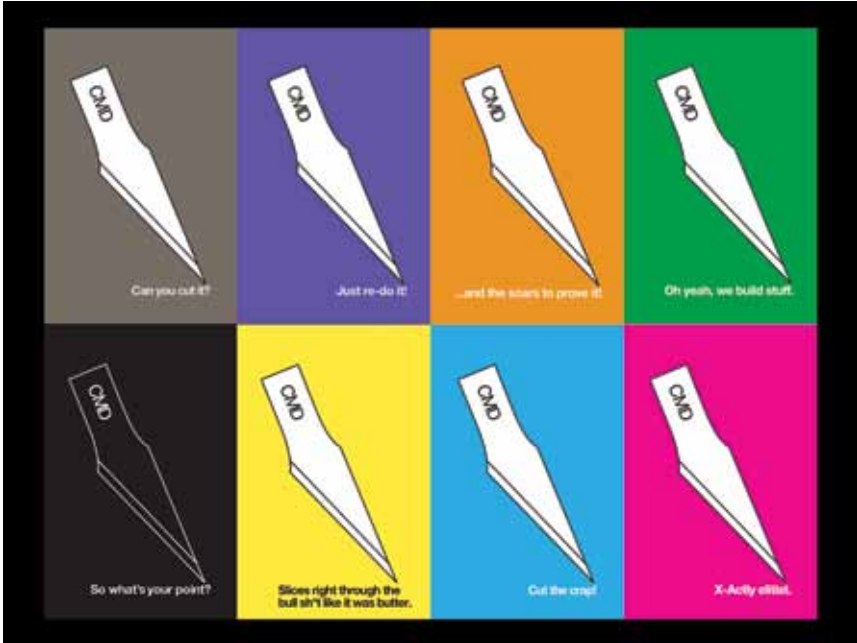
SLIDE 22

A final note…

At our graduation senior celebration night, I over heard a group of students laughing and talking about getting a ComDesign tattoo. I had no idea what they meant. Then one of my students lifted her hair to reveal a tattoo. "We're all getting this," she said, "but don't you dare tell my parents!"

SLIDE 21 Tattoo.jpg

It's very believable that some grad might get a tattoo of their alma mater but I personally have never known of anyone with a tattoo of their **major**. To be **that** passionate about **your program** speaks volumes.

At graduation I met her parents and commented that they had a very creative and hard working daughter. No, I didn't tell them about the tattoo. However, I knew it was her intangibles that now made her a design professional, we just gave her opportunities to nurture them. I believe that she and her classmates are ready to change the world, and they will have with them, both, the tattoos and the intangibles, for a lifetime.

SLIDE 22 CMD Posters (all 8 together)

And thank you Class of 2010, we now finally have a brand for the 30-year-old design program.

SLIDE 23

SLIDE 24

SLIDE 23 (my list of 140+ intangibles)

Our world needs extraordinary design leaders to tackle the "wicked" problems that are confronting us and intangibles make those great leaders. It is imperative that we continue to find new ways to instill them in our design students.

Thank you very much. Are there any questions?

SLIDE 24 "Thank you."

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Understanding How People Work. Teaching the value, practice, and integration of human factors in design.

Stacie Rohrbach
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University

Bruce Hanington
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University

INTRODUCTION

Based on the belief that designers communicate information, produce products, and provide services that are intended to improve peoples' lives, it is pertinent that designers take into account the attributes of their audiences. Observations of contemporary design practice and conversations with leading professional designers confirm the value of human-centered design tools and methods in every step of the design process. These instruments aid the identification of design opportunities, facilitate collaborative activities, inform design decisions, and guide the communication of findings (Hanington, 2003).

Design educators often strive to integrate audience considerations into existing projects. However, design studios frequently focus on teaching students critical making skills and processes, leaving little time to address human factors and principles of human-centered design. Some programs attempt to teach the topic in the context of a lecture course. Although this format provides students with vital information, it often fails to help students apply what they learn. Thus, design educators must seek ways to teach students the importance of human-centered design, provide them with tools and methods for integrating essential considerations into their design activities, and develop projects that enable them to apply what they learn to concrete design situations.

OPPORTUNITY

A course entitled, "How People Work" that is taught within the School of Design at Carnegie Mellon University provides an opportunity to explore human factors by integrating theory and practice. Through the description of the structure of this course and its final project, this paper proposes ways for design educators to effectively teach human factors to both communication and industrial design students.

BACKGROUND

The original Human Factors course began in the mid 1970s, and was renamed How People Work in the late 1980s. The course was taught as a requirement for industrial design students until 2004, when the School began requiring communication design students to take it as well. This decision resulted from a programmatic review and from input provided by the School's board of advisors, which revealed the need for both industrial and communication design students to address people in the design process (Hanington, 2006). The review also confirmed that introducing such a course during students' second year of

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study is ideal because it follows their first year of undesignated design studies with a focus in communication or industrial design. The course is therefore positioned as a requirement for all second-year design students in their third semester of study in the program. During this semester students begin considering people in the design process more concretely than they had in the past.

The structure of the course has gone through numerous changes based on the number and types of students enrolled, the physical teaching space, the ideas of the instructors, and activities conducted in current professional design practice in the context of ongoing curriculum reviews. When originally taught to a class of approximately 25 industrial design students, the content of the course focused on their specific needs, using hands-on activities to teach the use of pertinent tools and methods. This combination integrated theory and practice well. However, the expansion of the class to encompass communication design students, which changed the enrollment to approximately 50 students, presented numerous challenges that required the structure and content of the course to change. The content needed to be broadened to include points that are relevant to both communication and industrial design students and teaching methods had to be rethought to devise ways of keeping 50 students engaged for three hour stints, twice a week, in a physically small classroom setting. In addition, since the course was not a requirement for communication design students until recently, those enrolled had not yet shed their perception of it predominately focusing on industrial design topics.

METHODOLOGY

In response to the content issue, beginning in the fall of 2008, the School decided that the course should be team-taught by two design faculty members —one with a background in industrial design and the other communication design. They each teach several components of the course and supplement their areas of expertise with classes taught by other faculty and local professionals. This approach provides students with diverse perspectives and the most up-to-date information and practices. It also aids students' engagement in the course by providing them with class sessions that are unique in content and delivery.

The instructors have loosely devised five categories of content based on the tools, methods, and information that have proven essential to the study of human factors in design contexts, which students investigate sequentially and cumulatively. Additionally, the definition of "human factors" is made intentionally broad; to encompass a multivariate perspective of human-centered design. In this course, students study how an understanding of the following is essential to the process of designing:

- people's bodies
- the ways people think
- people's emotions
- people's surroundings
- design research methods and processes.

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Given the nature of the categories, the content focus continually shifts, helping *all* students see the relevance of the course to their particular field. Moreover, much of the content is specifically targeted at principles of design that are not discipline-specific, to convey the universality of human factors. For example, the study of people's bodies is demonstrated as relevant to the design and placement of exhibit spaces, kiosks and signage, pertinent to both communication and industrial design; the intersection of product and graphics are critical for the design of comprehensible interfaces; and the human emotional response to colors is equally relevant to both design professions.

The instructors tackled the teaching methods challenge by breaking the majority of class time into smaller segments. Thus, classes often begin with a presentation by one of the instructors or visiting professional, who provides information on a specific topic and often poses a problem for students to address or an issue for them to consider. Students often perform group activities based on provided instructions that require them to visualize their ideas—both as in-class and out-of-class assignments. These sessions are frequently followed by class discussions about the preceding events. Throughout the course students complete short readings that are relevant to the content addressed in class. At the close of each of the five course sections, students submit short reflection papers that articulate what they learned from specific class activities and how they propose using their new knowledge in current and future courses and in professional practice. This process combines theory and practice in ways that help students grasp the relevance of the course content and apply what they learn to concrete design problems.

Sophomore Communication and Industrial Design students enrolled in the course, How People Work, conduct design activities that solidify their understanding of human-centered design tools and methods by applying what they learn to concrete design opportunities.

03/11
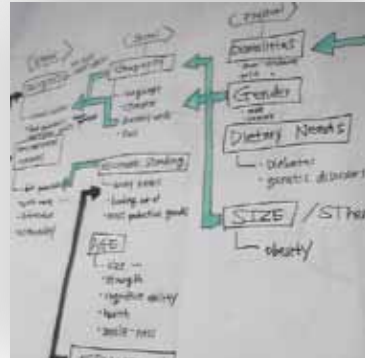
Final Project

The value of the described approach to developing and delivering human factors content is most evident in the final project that the students conduct as teams throughout the second half of the semester, which is intended to weave together all the lessons that they learn in the course. The tasks that comprise the project are broken into manageable segments that students tackle sequentially.

1. IDENTIFY A DESIGN OPPORTUNITY

    Initially, the students are asked to organize themselves into teams of three that include industrial and communication design majors. They are encouraged to look around and discover an opportunity for redesign—something that is out of balance, unresolved, or dissatisfying for people who encounter it. For example, the opportunity could be a door, a sign, a set of directions, a public seating area, even a piece of software. Essentially, they are asked to look for something that doesn't "work" as it was intended. Many of these opportunities exist in the students' surroundings and thus, are readily available. The students are given a week to conduct this stage of the project

2. DEVELOP A PLAN

    In this stage students are required to develop a research protocol for observing people's interaction with the design opportunity that they have identified, detailing the questions that they want to ask, how they will ask them, to whom, where, when, over what period of time, and why their plan is appropriate. For example, they may have people freely explore a product, interface, or environment that they have identified, or allow them to use instructions to complete a specific task. Students are also asked to describe how they will identify and record successes and failures of interaction, what materials they will use, how long the sessions will last, what roles the team members will play, and how they might analyze the results. The students must submit their research protocol three weeks into the project.

3. OBSERVE PEOPLE

    During this phase students observe people using the product, interface, or environment according to their research protocol. They are reminded to select an appropriate participant group for their research and address a range of experience levels. Students are required to have at least five participants in their total observations. They spend approximately two weeks observing, documenting, and redesigning

4. DOCUMENT FINDINGS

    Students document their observations with photography or video, audio recordings, drawings or sketches, and notes. They develop a recording method for noting successful interactions, and errors or other points of dissatisfaction.

5. REDESIGN IT

    After several stages of research, the students propose a redesign of the product, interface, or environment that addresses problems and errors that they observed in their inquiry, improving the interaction for human use.

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6. COMMUNICATE WORK

As a final step that lasts approximately one week, students prepare their research as a 17" x 22" poster that conveys the story of their work. They are required to include a listing of their teammates, a description of their design opportunity and the problems that exist, a diagram that states the steps of their research protocol, a description of the methods they employ and the participants they study, a visualization of their findings, and a proposal of a redesign that is based on their discoveries. During this stage, students are asked to consider a set of questions that deal with the visual communication of their ideas and verify that their poster design matches their answers. Students are asked:

- How much text can people read comfortably in a poster format? They are reminded that this is not a multi-page report but rather a form that is intended to communicate key points to people relatively quickly. Thus they must plan accordingly.

- What categories of information should people be able to identify? It is suggested that students think about the types of information they gathered and determine if there are pieces that people are intended to read as a set. If so, they are reminded to design them with visual consistency to convey that the elements are grouped.

- In what order should the information be read? The students are encouraged to think about the placement of text and images as tools that lead people through the poster in a logical manner. They are reminded that they are telling a story.

- What should the audience be able to read from 5 feet, 3 feet, 1 foot? Students are told that posters are read from various distances and asked how they might use design variables, such as type size and weight, to communicate key information from a distance and provide more in depth content up close. Basically, students are told to think about ways to communicate the hierarchy of their content.

- What images, diagrams, or other form of visuals, support the story that is told? They are encouraged to consider the role of non-textual elements in communicating important information about their plan and think about how these components might support their writing.

OUTCOMES

During the fall semester of 2009, the fifteen groups, each comprised of three students, conducted this project in a manner that matched the goal of marrying human-centered design theory and practice in ways that are clear, appropriate, and enjoyable. The students proposed several design opportunities to explore at the start of the final project, which provided them with content options. Following discussions with the instructors, the teams chose a single topic to investigate.

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Research protocols, each created by a team of three students, function as a framework for the design study and development of the final project in the course, which guides each step that the students take.

As students that live in the Carnegie Mellon University housing system, we are responsible for understanding and following the fire emergency protocol. The current signage posted within university residences is not clear and is not made for quick reference. The instructions posted are not concise and do not contain informative graphics or imagery. In addition to the cluttered text, the signs themselves are not always conspicuously located within the residences. Our research protocol will allow us to better understand current student and faculty dispositions to existing signage through observation of the following: their behavior in a simulated fire drill, their ability to quickly locate the fire emergency instructions, and their understanding of the instructions within various time intervals.

Protocol
We plan to include 15 to 20 participants in our study. These participants will vary in age, occupation, and gender. We will recruit the participants from all areas of our campus including, but not limited to, dorms, administrative buildings, classrooms, and recreational facilities. As compensation for their participation in our study, we will provide a small reward for each participant. For our study, we plan to incorporate the following three elements:

Fire Drill Observation
- We will film, photograph, sketch, and note behaviors witnessed during a prescheduled fire drill
- We will attempt to document more than one location beginning with Resnik and Mudge House

Sign Location Task
- We will record the time it takes participants [one at a time] to locate existing signage in various university residences
- We will then repeat the procedure with the same participants using our redesigned emergency signage located in several places throughout the room to determine its most effective placement

Sign Organization Task
- We will present the existing signage to participants and ask them to read it within a limited time period. The sign will be removed and they will be asked to communicate the instructions remembered
- We will then ask for feedback regarding the organization of information on the sign and how it can be improved
- We will then repeat the tasks for our redesigned emergency signage

Introduction
We want to research the current perceptions of helmets in biking culture in order to redesign and promote bicycle helmet usage. From our research participants we are specifically trying to understand why bicycle helmets are used or not used, and what factors (social, environmental, or economic) might be contributing to these facts. As well as researching the bicycle helmet as a product, we will also examine three user groups; bicycle store owners and employees, current bicycle helmet users, and bicyclists who do not use helmets.

Research activities
- Online survey of design students using surveymonkey.com
- Post questions on popular biking forums/websites like http://bike-pgh.org/
- Direct interviews with user groups at:
    - bike stores in Pittsburgh
    - bicycle racks on CMU and UPitt campuses, Squirrel Hill, Lawrenceville, East Liberty, Southside, and Downtown

Number of Participants
We plan to contact:
- 25 people through surveymonkey.com
- 25 people through biking forums
- 50 people through direct interviews

Our area of inquiry is the CMU Shuttle and Escort bus services – specifically, the ease of use and access to information. By interviewing participants we would like to identify what confuses them about the system and any changes they would like made.

Research Activities:

We plan to conduct a general survey of the campus community via Surveymonkey and a more thorough interview process of people who currently use the Shuttle and Escort services. We plan to consolidate and create an overview of all print and web material that we can find about the services, documenting how easy it was to find them and how informative they are. Furthermore, we also plan to ask for information at the info desk in the UC, as if we had no prior knowledge of the system. Additionally, we plan on riding the bus system ourselves.

Our target participants are the members of the CMU community, primarily students.

With regard to Surveymonkey, there is no set limit to the amount of people involved. We will interview ten people who use the shuttle. We also plan to ask for shuttle information from five different info desk attendants.

Surveymonkey participants will be recruited via Facebook and email. Current shuttle users will be approached at pick up and drop off points for the bus. The info desk attendants will

Top: Students shoot video to gather information about the street crossing behaviors of people at a particularly dangerous intersection on campus.

Bottom: Students shoot video to gather information about the steps people take in using a digital book device and the problems they encounter throughout the process.

Their research activities took various forms, which included analyzing existing and competitive products, interviewing, storytelling, card sorting, shadowing, surveying, fly on the wall observing, and analyzing findings. Their documentation consisted of video and audio recordings, notes, photographs, sketches, diagrams, maps, and semi-transparent overlays.

Throughout each stage of the project the students built connections to content covered earlier in the course and employed research processes that were discussed in class. For example, students who investigated the shortcomings of turnstiles drew on the anthropometry knowledge they acquired by pointing out the problems with the width of pass through spaces and the position of turn bars for various human physical dimensions. A group that studied IRS forms capitalized on what they learned from the course sessions dealing with cognition and perception by highlighting the problems resulting from the form's unclear language and visuals that exasperate cognitive load. Students exploring problems with bicycle helmets used information gathered from the emotional segment of the course by illuminating the unpleasant appearance of helmets as a design problem that could be resolved to influence human behavior.

The students moved through the project in a fairly consistent manner, aided by periodic scheduled meetings with the instructors, and the submission of specific deliverables at each checkpoint. This process enabled the students to use each of their steps as a guide for the proceeding stage. For example, a group of students

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who studied sanitation concerns in public bathrooms used online surveys to get a gist of problems that went beyond their preconceived notions. Next, they used this information to conduct a study aimed at discovering a hierarchical structure in the importance of responses. They achieved this goal by hanging posters in public bathrooms that included key questions about sanitation for people to provide written comments. Simultaneously, this group discreetly observed people's behaviors in public bathrooms and documented their findings in journals. Each of these steps informed the next, resulting in the redesign of key features in public bathrooms, such as flushing mechanisms and hands-free ways of entering and exiting the space.

Although the information and objects they collected and created throughout the project were interesting and valuable, the manifestation of the students' efforts in the form of a poster best articulated what they had learned from the course. Each of the groups clearly articulated the design opportunity they identified, the research methods they employed, the discoveries they made, and the solutions they proposed. One particularly compelling piece focused on emergency reference information for the campus community. They used existing and proposed redesigns of the forms to illustrate their points, making it easy for both the students and viewers to grasp the value of the project and understand what had been gained from the course.

Students exploring the shortcomings of bicycle helmets describe the tools they used in their investigation, the methods they employed, their discoveries, and recommendations via an information poster.

DEFINING THE PROBLEM
We identified **bicycle helmets** as a product that was in need of a greater aesthetic appeal and portability. There has been a steady rise in the number of bicycle accident fatalities of riders who were not wearing helmets. We believe that young adults are less inclined to wear helmets because of the negative stereotype associated with safety.

Of the **100** people we surveyed, How many wear bike helmets?
51% NO
49% YES

"I am incredibly self-centered and vain. Thus, I would rather risk potential head trauma than wear that hideous thing on my head."
- Survey Respondent

THE INTERVIEWEES
Pro Bike LLC.
Biketek
Iron City Bikes
bikers around Oakland

ONLINE SURVEY
100 participants
ages 18-30
college students

THE BIKE PROCESS
We took ourselves through the preparation and execution of biking from one destination to another. We considered aspects of portability, comfort, and environmental conditions. The process gave insight to key points of interaction with helmets.

identification   observation   interview   data collection   sequencing   data analysis   conclusion

TARGET AUDIENCE
young adults
daily commuters
urban environment

"What's your life worth?"
- Pro Bikes Expert

HELMET CONSIDERATIONS
1. dorky appearance
2. discomfort
3. portability/security
4. helmet hair
5. forgetfulness

THE PROPOSAL
Through our research methods, we have discovered plausible improvements to modern bike helmet design. These areas include a better ventilation system, affordability, portability, anti-theft and weather-proof storage, and a variety of styles to appeal to a wider consumer base. Designing upon these considerations would encourage increased use of bicycle helmets.

PHOTO DOCUMENTATION
bikers around Oakland
locking devices
bike storage

Top **3** Reasons to Ride
RECREATION 26%
EXERCISE 19%
COMMUTE 13%

Design & Research: Eric Habich, Lauren Beckwith, & Joanne Ong

EMERGENCY
Reference Information Design

the design opportunity *why did we choose this poster?*

Identify ways to improve the communication of emergency procedures to all people on campus and develop creative solutions to this issue.

Current Reference Poster

"I've never noticed this anywhere."

"These are horrifying!"
"Can you imagine an entire classroom crowded around this?"

Interview Responses

Have you seen this poster before?

Is this information helpful?

Would you use this poster in an emergency?

Primary Issues

Unsuited as a poster
- Little hierarchy
- Small text
- Uninviting
- Unnoticable

Unsuited for "quick reference"
- Little organization of information
- Too much text
- Arbitrary or hard-to-see images
- Some titles refer to the name of the emergency, others refer to how to deal with the emergency

research methods *identifying issues and how to fix them*

Storytelling
Allowing an individual to talk us through what s/he would do in the given scenario

What would you do if the power went out while you were studying on campus?
"I would just leave. I wouldn't use the poster. I wouldn't be able to see it anyway."

What would you do if you found out there was a gunman on campus while you were in class?
"I would just start to cry. I have no idea what to do. I wish I knew how to handle this before the fact."

Interviewing
Asking individuals basic to in-depth questions, to obtain general information about the poster

What do you know about emergency procedures on campus and where you live?
"If anything happens Campus Alert sends me a text message."
"Not much at all. If anything happened I would just run."

Does this poster contain helpful information?
"Yeah, I would just want to keep a copy of this in a folder or planner"
"Yes, but this would be better if they gave it to you when you moved in"

Shadowing
Observing and following a group of people to gain insight on the best locations for posters

We shadowed people in Doherty Hall, the University Center, and Margaret Morrison Hall to figure out where placing a poster would be the most appropriate. Entrances and exits of buildings were a given, considering the content of the poster; but shadowing also brought up an interesting question: Would we want this poster to be where people will read it while they are stationary (i.e. waiting in line), or for people to scan while they are moving? We would need to format the poster accordingly.

our solution *a poster and booklet redesign*

Changes to the Poster
- Obvious hierarchy of information
- 3 Step responses outline appropriate action
- Bullet-points detail information
- Sans-serif to be more legible
- Larger-sized text
- Simple iconography and color-coding for quick reference
- Arbitrary information removed
- Grid-structure and columns for organization
- Relevant titles

All detailed information not on the poster should be integrated in the student handbook that students are given at the beginning of each school year, so that the students may read through the information whenever they have time.

HELP
Emergency Guide
Campus Police 412-268-2323

	Check	Call	Care
Medical			
Fire	Beware	Evacuate	Signal
Gunman	Secure	Hide	Call
Utility Loss	Evacuate	Beware	Call
Weather	Shelter	Beware	Call

Alert Now:

Nick Abele | Sharon Kong | Alex Fischer
How People Work | Fall 2009

IRS Form 1040

Redesigning the IRS Form 1040

The Internal Revenue Service has more than 600 forms. The average person does not come in contact with most of these forms, but the few with which they do come in contact tend to do more harm than good. One of the most common forms, the IRS Form 1040 is one of those forms with apparent design flaws. For example, issues with:
- clarity of language
- organization
- necessity of information
- hierarchy
- overall understanding

Through a redesign, the form could do away with much of the information and enormous portions of the 70+ page direction packet included with the form.

Methods and Participants

We utilized two major methods in our research: surveys and video observation of users. These methods informed the research because they allowed us to reach a wide breadth of people as well as focus on individual needs regarding our form. The group of participants that we polled ranged in age from 20 to 72 years old. The large scope reflected the breadth of people who come in contact with the form.

Completion Time vs. Age

The graph shows the correlation between completion time and age; the people who have presumably had experience with the form could complete it generally faster than those with less experience, i.e. younger people.

Hierarchy
- emphasize differences between section titles and additional information
- leads eye through form to help show important information broadly

Language
- adjustments to language help to clarify exactly what each section is asking

Individual Step Hierarchy
- breaking down the different numbers into the most important sections allows people to understand the information applicable to everyone and the information that is not as common
- helping people to understand the steps quickly allows them to understand the whole quickly

Original 1040 Form
with First Redesign Call Outs

Form 1040
Label
Filing Status
Household Members/ Dependents

Organization
- breaking the information into clear sections helps expedite the process and make the form less intimidating
- creating different steps to completing the form allows people to subdivide their processes and understand in smaller chunks rather than the whole form at once

Necessity of Information
- many of the steps include references to other forms that are not necessarily applicable to most people
- forms regarding small businesses and/or pension and annuities are not applicable to most people

Fall 2009 Tommy Browne — Lauren Ciccoi — Pete Winslow

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kindle3

Allison Tran, Hansh Ho, Victor Ng

problem statement

The way we currently access printed information is changing. The demand for compact "smart" devices are replacing traditional media. Intuitive digital interfaces that seamlessly bridge the user's transition between print and the screen. Digital readers are revolutionizing the experience of reading books, however they have not yet successfully created an interface that simulates the inherent accessibility of books.

1 address problem

2 identify user group

3 data collection

4 analyze data

5 proposal

research protocol

research groups

New Kindle Users	Experienced Kindle Users	Non-kindle user

research methods

Video

Interview

Additional Research

proposal

We will attempt to design a better interface that addresses the most prevalent issues with the Kindle. In doing so, the Kindle will become a more universal reading device.

Color/Toolbar/Touchscreen

Sharing

Highlighting/Bookmarking/Notes

Text Size

HOW PEOPLE WORK | FALL 2009 | SCHOOL OF DESIGN | CARNEGIE MELLON UNIVERSITY

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The current form of the course described in this paper provides a framework for structuring courses aimed at teaching human-centered tools and methods to design students. These tools and methods are critical to the design process, regardless of professional design affiliation. In the framework presented here, course content and methods are detailed for teaching to a diverse audience of communication design and industrial design students in their second year of university study.

The framework is based on carefully balanced themes; class sessions conducted by a range of design faculty and professionals; diverse activities including lectures, labs, presentations, and traditional reading and writing exercises; and work completed both as individuals and in groups, inside and outside of class. Most critically, the students are required to synthesize course material in the form of a well-documented team project, which requires them to assess human needs through observation; record and redesign an environment, system or artifact; and communicate their process and findings through a poster, adhering to good principles of information design.

As design educators seek ways to teach students the importance of human-centered design, provide them with tools and methods for integrating essential consider-ations into their design activities, and develop projects that enable them to apply what they learn to concrete design situations, it is critical to share frameworks such as the one detailed in this paper as proposed models for review, and possible adoption by other programs in design.

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11/11

Designing Tenure and Promotion: Redefining Teaching, Research and Service

Maria Rogal
University of Florida

Matthew Gaynor
University of Illinois
at Chicago

Paul Nini
The Ohio State
University

Steven McCarthy
University of Minnesota

Panel Discussion Abstract

An academic appointment with 'indefinite tenure' is the pinnacle of acheivement for many midcareer graphic design faculty. It implies job security, a raise in salary, access to increased faculty benefits, oftentimes a sabbatical leave and – perhaps most satisfying intellectually – recognition that one's peers acknowledge their contributions to the discipline.

Institutional and departmental cultures vary, however, when it comes to tenure. While some offer developmental workshops, mentoring from senior colleagues, financial support for research and travel, graduate assistants, and release time from teaching – some just let their faculty 'sink or swim.' One challenge is the disciplinary appropriateness of those in judgment; do they have enough familiarity with graphic design's discourse, dissemination venues, pedagogical methods, and so on? Additionally, the language in relevant collegiate documents (the 'tenure code') can have a strong impact on assessing a candidate's qualifications for tenure. And what about external reviews – do they help or hurt?

Of special relevance to graphic design faculty is the varied activity that falls under the loose definition of 'research.' What are the roles and scope of creative production, design authorship, professional practice and traditional scholarship in the context of peer review and knowledge formation?

This panel proposes a lively discussion about the particular challenges that graphic design faculty face in the process of annual reappointment, promotion and tenure. Of possible interest to those attending this session will be economic considerations, issues of workload, leadership roles, interpersonal relationships, bias, value systems and academic freedom.

Steven McCarthy   Professor, University of Minnesota (panel chair)
Matthew Gaynor   Associate Professor, University of Illinois–Chicago
Paul Nini   Professor, Ohio State University
Maria Rogal   Associate Professor, University of Florida

Working with Letterpress in a Design Department

Joey Hannaford
The University of West Georgia

Katie Harper
University of Arkansas at Fort Smith

Jeff Pulaski
Wichita State University

Dawn Hachenski McCusker
James Madison University

Panel Discussion Abstract

Letterpress is a hot topic in current graphic design practice and at many universities across the country, letterpress is being incorporated into graphic design programs. This panel is made up of faculty from a number of schools with different levels of letterpress involvement. One school teaches letterpress out of the faculty member's garage, one is beginning with a single press and a few cases of type, another school purchased an entire letterpress shop from a local printer, while one has had a letterpress lab since the late '60s. This panel will discuss the challenges and opportunities of starting a letterpress program in today's university environment.

Some of the questions the panel will discuss are:
What type of equipment is needed to begin a letterpress program?
Where can equipment and materials for letterpress be found?
What benefits can students derive from letterpress?
How can letterpress be incorporated into existing curriculum?

Chair: Jeff Pulaski, Assistant Professor, Wichita State University
Panelist: Joey Hannaford, Assistant Professor, University of West Georgia
Panelist: Dawn Hachenski McCuster, Associate Professor, James Madison University
Panelist: Katie Harper, Assistant Professor, University of Arkansas at Fort Smith

Weaving Traditional Knowledge into New Practices.

Key Points from *Typographic Web Design:*
How to Think Like a Typographer in HTML and CSS

Laura Franz
University of Massachusetts Dartmouth

Plaka 101?

When I was a student, learning the tools and materials of design was never separated from concept. They were integrated.

Tools and materials change. Typographic web compositions are built from pixels of light, created with syntax.

I remember the first time I used plaka. The trepidation I felt as I pulled the brush along a curve. The rich blackness swelling around the sable hair, leaving an imperfect trail on the smooth (hot press), white, Crescent illustration board. Too much plaka, and the fluid would "break," black spreading out into the counterform of my cropped lowercase a. Not enough, and I'd have to paint the same curve again, losing the clean edge a perfect flow of plaka can create... losing the already questionable steadiness of my hand as I held my breath just a moment too long.

I don't remember what class I was in. But it wasn't Plaka-painting 101.

When *I* was in school (besides having to walk barefoot in the snow, up hill both ways between my dorm and Sangren Hall) I learned about the tools and materials of graphic design within the context of formal and conceptual projects. My teachers taught me how to make a clean cut, use rubber cement the correct way, draw a (somewhat) clean line with a rapidograph, rub down letters. They taught me how to mix the exact color I needed from my 8 tubes of gouache, never allowing me to settle for a color that wasn't right, a surface that wasn't pure velvet.

Learning the tools and materials of design was never separated from concept. They were integrated.

In design, our teaching methods are often inspired by the generation of teachers who came before us. Teachers who so thoroughly integrated their "technology" into our education it's almost impossible for us to separate those older tools and materials from conceptual and formal development.

But tools and materials change. Typographic web compositions are built from pixels of light, created by typing in syntax.

What's a web typography teacher to do?

Typographic Web Design

I'm preparing a new 15-week web typography class called *Typographic Web Design*. It will be all HTML and CSS, all the time… and taught as a blended course. Most of the class will be conducted online, meeting on campus one Saturday a month.

Part of the Graduate Certificate in Web and Interaction Design, the class is the *only* typography class in the certificate curriculum. And I have to assume that for some students, it will be the *only* typography class they'll ever take.

Excited by the prospect of teaching a typography course in which all projects are done in HTML and CSS, but a little nervous about the online component, I arranged for a handful of students to take a test-drive of the course — to help me work out the kinks while meeting face-to-face each week. Some students have no type background. Others have no web background. Others have a little of both.

Teaching Web Typographers

First, I identified what typographic skills my students need to learn. Then, I created appropriate HTML- and CSS-based assignments.

Interested in the shift from plaka to pixels, I wanted to use time-tested, classic typography assignments (e.g., word connotations, a transportation schedule, a recipe) but teach them using syntax instead of InDesign or Illustrator. The assignments result in web pages instead of plates, posters, or books.

What my students need to learn (objectives)
- Respect for readers and content
- Anatomy and Legibility (what fonts look like)
- Aesthetics and Emotions (how we "read" a font)
- Choosing two fonts to work together
- Rhythm and Tension (composition and space)
- How we read (leading, alignment, line-height, and more)
- "Chunking" information using vertical spacing and hierarchy
- Working with tabular data
- Creating multiple voices
- Creating a grid
- Building a font library (history of type)
- Historical approaches to typography

I'm preparing a new 15-week web typography class called Typographic Web Design. *It will be all HTML and CSS, all the time… it may be the only typography class* Web and Interaction Design *students will ever take.*

Web Typography assignments… based on the classics
This paper highlights some of the assignments I've developed for the web typography class. As planned, most are based on classic typography projects.

When I do deviate from a classic project, I'll explain how the new assignment continues to honor the stated objective. I'll also point out where traditional design processes need to be emphasized.

What Fonts Look Like

Painting Bodoni in gouache (print)
Students draw and paint a composition of Bodoni letters by hand. The compositions are large posters, approximately 40" × 60."

A type exercise given by Jan Fairbairn in Type 1 at UMass Dartmouth. It's similar to one I had in school (hence my fond memories of plaka). One objective is to get students to see the parts of letters, and to identify unique qualities of fonts.

Rollovers (web)
Web typography students roll over letters and words to see how two fonts differ from each other. Changes in the letterforms create motion, which draws the students' eye, and encourages them to look closer. Students roll back and forth over the letters, looking for what makes the fonts different.
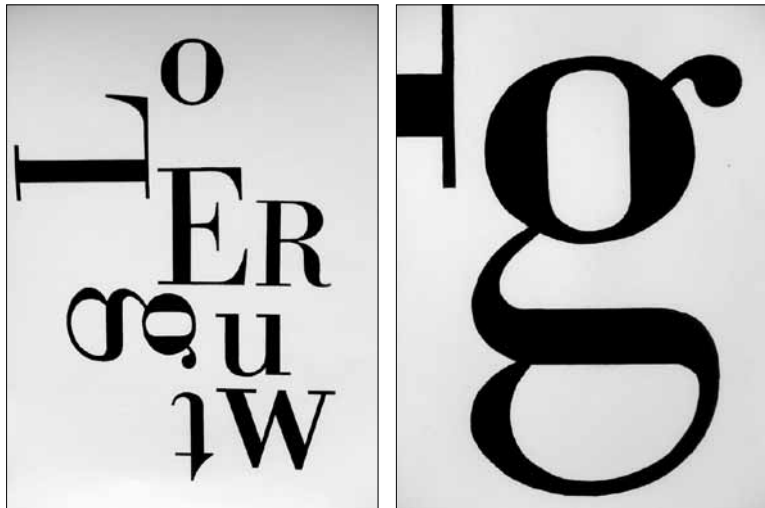
Feedback from students has been 100% positive. Even students who did the gouache assignment last year as sophomores said, "oh… now I get it. You're always talking about looking at fonts. I never understood how you could tell them apart…"

The rollovers are part of the lesson. For the assignment, students compare and contrast web fonts and write up their findings.
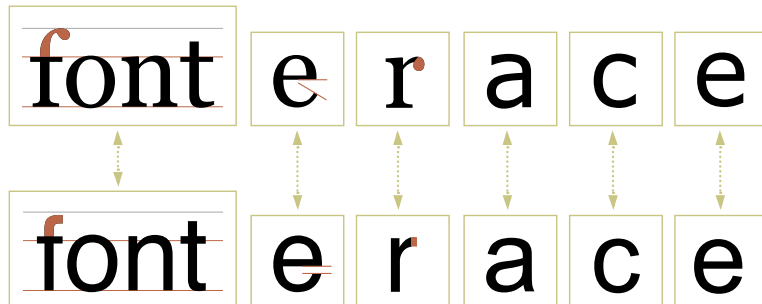
To view the actual roll-overs, go to typographicwebdesign.pdfs/legibility_twd.pdf

How We "Read" a Font

Word Connotation (print)

A classic type exercise. Students create different connotations for a word, using font, size, case, and style.

Word Connotation (web)

Re-tooled for the web.

As in the print version of this assignment, the main purpose is to create different connotations of a word.

Students also learn how to create basic HTML and CSS files, use <h1><h2><h3> and <h4> tags, and create their first div.

Composition and Space

Typographic Journey (print)

This project takes many forms. An instructor gives students a small amount of text to work with (a poem, a weather report, a letter/word/paragraph). Students are asked to use text as shape and texture, to explore composition, contrast, and space.

Connie Babian Grab gives this project to her students. Typographic Journey is inspired by a project in Experimental Typography: Working with Computer Type, *by Rob Carter.*
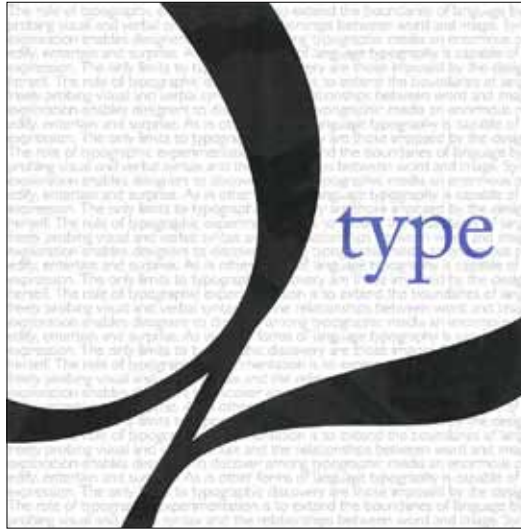
Sketching is more important than ever.

Because when students are trying to make this…

they're looking at this.

It helps to work out the composition in advance.

A is for Alignment.

Based on a print project I used to give in Type 1, *A is for Alignment* is a version of the classic letter/word/paragraph assignment above.

"Chunking" Information: Vertical Spacing and Hierarchy

Physics Lecture Series Poster (print)

In Type 2 I assign a poster… there are many objectives. One objective is to organize a series of lectures using vertical spacing (proximity) and hierarchy.
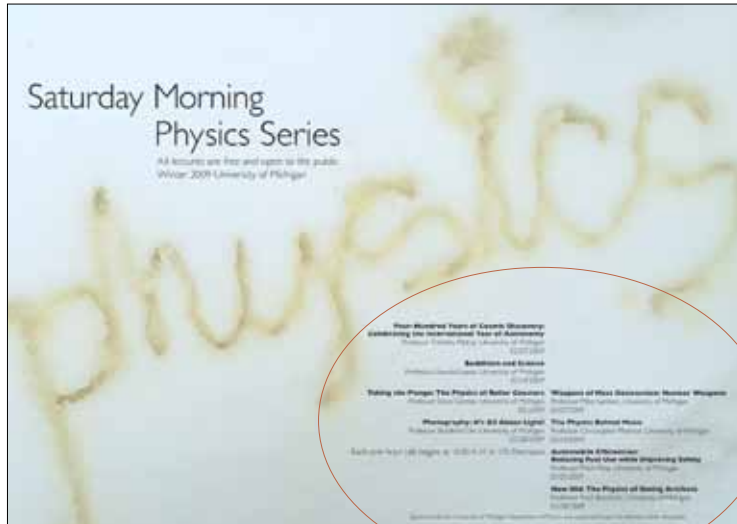
Film Series (web)

The Film Series web-type project has similar objectives.

The Film Series also gives students the opportunity to attend to details… EN and EM dashes, curly quotes, and setting acronyms slightly smaller than the text. (Zoom in for details.)

Working with Tabular Data

Tide Chart (print)

Working with tabular data is a classic typography exercise. Objectives usually include organizing information, supporting reading direction, learning how to set numbers, and respecting "boring" data.

In this lesson, students are introduced to table syntax... appropriate for tabular material. Never for page composition.

Ferry Schedule (web)

Re-tooled for the web.

Creating a Grid

Recipe (print)

Recipes are another classic type exercise. In fact, recipe layout is the common project across all sections of Type 2 at UMass Dartmouth. We all teach it, regardless of what other projects we give during the semester.

Recipe (web)

Recipes online are more complex: students deal with navigation, advertising, and real-estate constraints. Compositions are often longer than the screen.

Full composition

Digital photos can be printed out, edited down to the best solutions, and hand-colored to explore possible color palettes.

The Future (and Some History)

My independent study students and I will continue to work over the summer, ironing out the wrinkles before I officially teach the first *Typographic Web Design* class this fall.

I'm glad I followed my instincts and worked with a test group. There were kinks to work out. The primary issue was integrating typography skills and CSS/HTML in a concise, natural way. I spent over 600 hours writing and testing lectures and lessons this year. I expect things will go more smoothly when I teach the class the second time.

The remaining lessons…
This summer I'll show my students how to build a font library for font-linking (which will of course include a lesson on the history of type). And they'll do an exercise exploring typographic styles (traditional, modern, post-modern).

I purposely left the history lessons for the end.
I've taught enough web typography assignments to know students want to learn *how* to make something first. They need to get it to work.

My students will often start the class thinking they are going to crash and burn… and by the end of the first lab, they are experimenting with typing in syntax. For example, I'll teach them how to insert an image, and they'll go online to figure out how to insert a video clip.

But when they are done chomping at the bit, when they know how to build a site, when they are ready to learn more about type…
Then I'll hit them with history.

And through it all, I'll try to keep the objectives in mind.
I'll try to teach them how to think like typographers.

My goal is to be like my teachers before me: to thoroughly integrate technology so the lessons are about typography — the technology becomes a mere tool — used to achieve good type.

Additional Resources
Course materials will be available in an interactive e-book, August 2010, at *typographicwebdesign.com*

Chapters 1 and 2 are already available for download and distribution.

A hand-picked list of lively and legible web fonts for online text is available at *goodwebfonts.com*

THIS IS A WEBPAGE

Crossroads of civilization.
Refuge of all the arts against the ravages of time.
Armory of fearless truth against whispering rumor.
Incessant trumpet of trade.

From this page, words may fly abroad,
not to be silenced or censored by limitations of space or access.
Not to withhold ideas and information from those who seek them,
but to serve as a connection
from the writer's hand to the readers' minds.
Friend, you share a sacred space.

This is a webpage.

With respect to Beatrice Warde

Graphic Design Education: Are you wasting time teaching technology? Well Stop.

Troy Abel
Virginia Tech

Abstract

Visual communication and design have become increasing reliant on technology. In some cases, the need for technological instruction detracts from the creative environment of the design studio. This presentation puts forward an alternative methodology of instruction by teaching technology through a unique course designed to quickly familiarize new students to the designers' technical tools. Furthermore this pedagogy introduces new graduate students to academia and the classroom.

First year design students must quickly acclimate themselves with the tools of the industry including complex design software. By creating a separate course designed to address these issues main studio instructor is afforded more time to concentrate on teaching design.

This presentation will explore an alternative approach to teaching technology, one allowing graduate students an immediate opportunity to teach, while lifting burdens from studio instructors. The relationship between graduate student and undergrad is quickly recognized as a symbiotic one. Learning occurs on two concurrent levels, the graduate student is exposed to the rigors of teaching while undergraduates' development as designers.

The course incorporated direct instruction and demonstration while being taught in an assisted lab environment. By utilizing this pedagogical approach, the graduate student that has proven to produce highly productive students within their first year of instruction in the graphic design program.

Technology-geared design projects aid the students in understanding the industry tools as well as provide them with potential portfolio pieces that demonstrate their technical proficiency. Through engaging projects devised both to teach the technology and supplement major studies in studio, this graphic technology course allows students to immediately embrace their graphic design education. Moreover, by coupling the technology geared projects with studio projects in a cohesive manner both courses serve to build the students' to a higher level of aesthetic and technological skill.

Application of Constructivist Theory to Teach Computer Arts

Uttam Kokil
University of
Wisconsin-Stout

Abstract

This paper discusses a new method that has been conceived in line with the teaching philosophy of the author to teach 2D Digital Imaging to art and design students at University of Wisconsin-Stout. The course DES-220 focuses on the creative use of computer software skills, image generation, and problem solving of raster and vector graphics, in addition to intro to XHTML editors. It is a face-to-face classroom delivery, however, an online version of the same course has been established that simulates the traditional classroom situation. The project outcome is above expectation for this class as projects have been selected at international design competition such as Space Time Siggraph 09. The author describes how contemporary learning theories have successfully been applied at all levels of the teaching and learning process. At the same time, technology has facilitated the online delivery to a great extent.

Keywords

2D digital imaging, contextual learning theory, teaching methods, cognitive theory, constructivism

Introduction

Learning is the avowed main purpose of education. It is the goal of every learner and the task of every trainer to enhance knowledge and understanding in the classroom. Teaching is the act of imparting skills and sharing values.

2D digital imaging is an introduction to graphic technologies as a tool for graphic designers and studio artists. The course focuses on the content creation of two dimensional imagery for both printed and Digital Media. Students enrolled in the DES-220 course come from diverse concentrations like studio arts, graphic design, multimedia design, industrial design, and interior design. It is their first experience with computer technology in the classroom. The students are exposed to the following software that spans over a semester: *Adobe Illustrator*, *Photoshop*, *InDesign* and *XHTML* language. This class relies heavily on demonstration, practical, assignments and projects. At the conclusion, students gain knowledge to create vector-based illustration; create imagery using Photoshop; page-layout, and an understanding of the Web.

Teaching computer graphics courses can pose several challenges as far as teaching methods are concerned. Learning occurs most effectively through active collaboration of the learner. The purpose of education should include not only the acquisition of knowledge, but also the development and improvement of higher-order thinking strategies for problem solving and creative thinking **[2]**. Student Centered Teaching (SCT) has proven to be an effective approach to embrace in the academic arena; the emphasis is on deep learning and understanding; there is increased accountability on the part of the student; there is an interdependence between teacher and learner, thus a mutual respect within the learner-teacher relationship exists.

Theoretically speaking, a constructivist view of teaching is adopted for the importance it places on activity, discovery and independent learning. Problem based learning, which is part of the SCT, allows the student to set her own learning goals, dependent on prior knowledge.

Methodology

A learning environment has been devised to dispense the 2D Digital Imaging course online, to simulate a real classroom situation. The teaching method is based on the importance of cognitive complexity theory, and to evaluate what it has to offer in the new learning situation. This applies to a situated learning condition. The online platform is devised in such a way that it can address both the sequential and dynamic elements of cognition. Furthermore, the model can deal with the interaction of content knowledge and cognitive strategies for higher order cognitive processes (e.g. problem solving, creativity, decision-making, troubleshooting). The model may include affective elements as an integral component of the cognitive system.

According to Jean Piaget, learning is viewed as constructing knowledge from the information one receives. In order to apply the strategy of cognitive complexity theory in this scenario, the learner should have sufficient amount of knowledge base. The three knowledge base components are known as declarative, procedural and contextual knowledge **[3]**. Declarative knowledge implies awareness and a meaningfulness of content (e.g. concepts, rules, principles) and refers to the *knowing that* **[4]**. Procedural knowledge implies a knowing *how* to employ selected concepts, rules, and principles with newly encountered problems. Contextual knowledge implies an understanding of knowing *why*, *when*, and *where* to employ specific concepts, rules, and principles.

Process

The syllabus is spread over 15 weeks for the face-to-face class meeting over the spring semester. We start with Adobe Illustrator CS3, introducing all the possible tools. The first practical that the student tackles is the based on the operation of the pen tool. They are assigned several tasks to experiment with the interface. The instructor makes use of third party software like "IShowU" to create video demonstrations that are uploaded on http://blip.tv for the student can watch and study at ease. Once the student becomes familiar and confident with the tools, an assignment of intermediate level is given to the students so that they explore the mesh tool. They are required to render a 2D object to give it a 3D appearance: a sphere. In this assignment, the learner has to consider light and shade, tonal values, color and contrast, volume and dimension that they learned in prerequisite course ART 101. The requirement of a project is more complex in the sense that it demands more refinement in terms of aesthetic, conceptual value, in addition to execution (how to use the tools to achieve the desired results). Therefore in a project, we investigate the

employment of contextual knowledge while in an assignment, procedural knowledge is assessed.

A duration of a class project lasts for a period of 2.5 weeks. The objective of the Illustrator project was to morph two objects that have common shape, texture, and form. The students were required to make use of mesh tool in Illustrator to create a 2D object and give it a 3D look, without making use of 3D extrusion tool. The first week is spent on brainstorming to conceive an idea appropriate for the topic. The students are requested to submit 3 comprehensive rough sketches (Figure 1a & 1b) into the drop-box on the D2L. Desire2Learn (D2L) is a user-centric, web-based learning management system for the delivery of online learning and teaching. In this way, the instructor can keep track the date and time each project is submitted. Performing substantial amount of research on the topic assigned helps the learner to intelligently arrive at design solutions. Once the rough visuals are received, the same is discussed individually with the instructor, and if satisfactory enough, the instructor will allow the student to finalize the design. One should be able to solve a design problem in a unique way. A class critiques is conducted to conclude the final project (Figure 2) presentation. The learner develops his/her confidence and communication skills in that process. They should be able to critically analyze the content of a work of art, including the aesthetic quality. At this point, class participation is encouraged by allotting extra credits. And following the class critiques, the students are allowed to refine their design, based on the class feedback. Technology is omnipresent. The final design are uploaded on a blog (www.wordpress.com) such that each student can comment and share ideas on each artwork. Constructivism proposes that declarative and procedural knowledge are constructed as a result of the individual engaging in a particular situation, which require some behavior [3]. The contextual knowledge is tested through class projects such that how the learner can best apply the material in problem solving and creativity. The teacher acts as a facilitator in this circumstance.
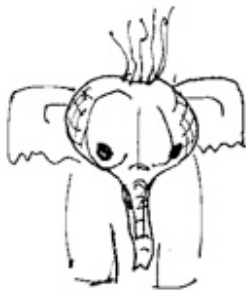
Figure 1b

Figure 2

Figure 1a

Discussion

Meta-cognition refers to the awareness that the person is consciously using his memory and cognitive system at a given time. The system interface is devised in such a way that co-operative learning occurs, with the option of video chat, discussion threads with the instructor and the classmates. The individual is in control of the situation by using all the resources from memory in order to achieve the goals that have been set to succeed in the course. The mode of learning makes use of social constructivism whereby interaction between learners and teacher take place. Distributed intelligence is promoted in such situation.

The cognitive processes of differentiation, integration, and construction of knowledge are abilities that can be improved by effective instructional methods [3]. From the Constructivism point of view, individuals organize the materials they learn, and new information is easily acquired if they can associate it with things that they have learned. . Theoretically speaking, Student Centered Learning relates to the constructivist view of learning for the importance it places on activity, discovery and independent learning [1]. Contextual learning theory puts heavy emphasis on the learning environment for learners can think more intelligently.

The learners are scaffolded by learning materials and encouraged by the teacher and motivated by peers during class discussion. By rewarding or praising the best works, other learners were motivated to ameliorate their assignments. This in turn has an affective role to the overall class since there is generation of interest to succeed. The affective domain is integral to the development of learning environments **[4]**, Motivation influences both attention and maintenance processes.

On the other hand, values and feelings would influence the criteria associated with acquisition of contextual knowledge. The teacher sets an indulgent tone of the class but at the same time ethical values are reinforced so that the students are comfortable asking questions or help. It is best for the teacher to be aware not only of what students are trying to learn but also how they are trying to learn. Thus cognitive processes affect learning.

Conclusion

It is important for the student to understand how to select the necessary knowledge by retrieving it from the long-term memory in order to restructure and elaborate the same on a project in order to construct new knowledge. People control their own learning. It is ultimately the students themselves, not their teachers, who determine what things will be learned and how. Every learner should assume his/her responsibility. We need to recognize that every learner is different and requires a specific pedagogical approach. This is where constructivist principles of teaching become a challenge.

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Author

UTTAM KOKIL is an Assistant Professor in Multimedia Design at the University of Wisconsin – Stout. He earned his MFA (Computer Graphic Design) from Rochester Institute of Technology (RIT), New York in 2004, and obtained a BFA (Graphic Design) from Sir JJ Institute of Applied Art, affiliated to the University of Mumbai, in 1997. Uttam started his career as a Lecturer in Design at the University of Mauritius in 1999. Uttam was awarded a Fulbright Scholarship to pursue his MFA at RIT in 2002, and a five-year scholarship by the Indian Government to study towards his BFA in Mumbai. Uttam won several national and international awards in various design contests, published papers for major conferences like ACM Siggraph, International Textiles and Apparel Associations, Participatory Design Conference, journal articles, and book illustrations as well. Uttam is currently pursuing a PhD in Design at the University of Minnesota. His research areas include user experience, computer games, usability studies, and exploring new avenues in HCI. The author would like to stress on the application of a combination of learning theories in this paper.

Making the Connection between research methods and design decisions.

Aaron Scott
Southern Illinois
University, Carbondale

Abstract
This paper will provide an analysis of the application of selected research methods and their connection to the design process. It will explore the process a design class undertook to find and resolve problems with an outdated environmental graphics program and how this design process may be applied in other design situations.

The research methods conducted by this group of students included directed ethnographic approaches, including direct and indirect observation, participatory research methods, focus group sampling, surveys, and questionnaires. These research methods were selected in order to provide additional understanding and insight into how the users navigate and interact with the facility. The main focus of the research addressed the usage of artifacts, traffic flow, branding, icons, the process for developing a sign message schedule, and how these methods could be used to make informed design decisions. Each of these topics were researched and developed to make this facility updated, modern, and more effective. This same process for gaining insight and direction into a clients/users needs may be adapted to fit the needs for other design projects ranging from product development to communication design.

Upon completion of the research students developed creative briefs and project guidelines that allowed them to ensure proper application of the research findings within the design decisions. These guidelines were referenced to be certain the needs of the users were being addressed. Students then develop a proposal that outlined how the facility's wayfinding/spatial layout orientation, environmental graphics, and brand identity could be redeveloped.

The basic premise of conducting such research is to more fully comprehend appropriate application of design choices allowing the designer to make informed, relevant, and applicable design decisions that shape the end product.

Making the Connection Between Research Methods and Design Decisions.

Currently design is lacking a cohesive framework required for illustrating the connection and significance of research to design decisions. This paper discusses and shares a three stage approach that clusters research methods into chronologically based usage periods, clarifies when these methods are used, and how they influence the design process. The goal of this paper is to provide the explanation of a model and illustrate its application via case study which is intended to aid practitioners when selecting between different research methods and their appropriate place and purpose within the design process.

At Southern Illinois University in Carbondale, SIUC, we have been working to develop a large D approach to our Design program. We stress the utilization of design thinking as a component of design doing, which infers an effective communication of design objectives and goals. We have worked to make it such that the research methods learned will correlate to other courses/projects/problems irrespective of discipline. We have stressed collaborative correlation between other campus departments, and encourage students to learn from other areas and illustrate the power and contribution design can make.

My own exploration into understanding and application of consumer behavior research began twelve years ago while I was working for a sales and marketing company that represented plumbing related product lines. While there, I was charged with the task of figuring out how to increase our sales through enhanced point of purchase materials and better in-store training methods. I turned to the end users and store associates for insights into these efforts. I spent many months in store isles watching and participating with customers and employees in an attempt to identify why consumers selected the products they did. This led to an interest in the utilization of many other research methods. These experiences helped shape my understanding of the significant role research plays in developing effective solutions.

My interest in the development between design research and the decisions that result from the gained knowledge was again roused during my first year teaching. I was operating under the misconception that students gained sufficient understanding of the importance of research by facing and overcoming challenges in their daily lives; that was until I noticed that some undergraduate design students displayed a disconnect between the research they conduct and their understanding of why they were conducting it. This notion became more apparent when I viewed the research results of a sophomore class project. I structured a design brief to allow the class the opportunity to explore and conduct what they considered to be appropriate research required to familiarize themselves with the outlined design problem.

This problem was structured with a hidden objective to discover how they connected research to their own design decisions. The time came to discuss insights they had learned, and to my horror three fourths of the class showed a single page with only a few images they had found online. They had overlooked listing the relevance of the images and the significance this type of online sampling and data base research may have pointed toward solving the problem if it had been conducted and documented appropriately. During the class discussing about their research, it became obvious they had gained very little additional insight and almost no new understanding. I determined to figure out why this had happened. After further discussion, it was determined that they were attempting to provide what they thought I wanted, not because they felt it would benefit their solution, but because it would meet my expectations for that component of their grade. They had not yet understood how research if conducted well could be used as a vehicle to better understand how to design for and address the needs of the user. They were missing the connection! I came to the realization that I had never stressed the importance of how conducting research would directly affect their design process, and how they probably never made the association to why designers conduct research in the first place. I also recognized this disconnect contributed to why these students were finding it difficult to develop multiple concepts. I have often witnessed students wasting their time and efforts attempting to conduct design research for the misguided reason to get the grade rather than to improve their design decisions. Educators and practitioners need to teach and demonstrate the connection between design research and design decisions to students. This is essential in order to strengthen the credibility of design fields and reinforce the significance of the design process including design thinking through the final outcome.

To begin, students need to learn the proper procedures and various methods for conducting research. This will allow them to select the proper research method required to gain applicable insight and communicate the desired results. They must know how to ask the correct question in order to get the correct answers. I'm reminded of the old adage: garbage in garbage out. Without a clear understanding and application of the connection between research and decisions a designer is left to his own intuition, and subjects the client to speculation. Research must act as a support structure for design decisions. The selection of appropriate research methods will allow designers to: 1) Develop more accurately informed designs and design decisions. 2) Clarify communication methods and meanings. 3) Illustrate the validity of design decisions. 4) Improve workflow and project management. 5) Reduce secondary guessing by identifying the proper directions that will benefit and address the client's needs.

I have categorized three main stages research methods fall into, **Pre-design**, **Active design**, and **Post-design**. These stages encompass the entire design process and incorporate more than mere research methods, but this paper only focuses on the research components of these stages. All three stages together are loosely based upon a divergent to convergent design funnel

process, and outline when and where in a complete design cycle the research is conducted. (Laurel, 147-154) This categorization is required in order to explain the areas in which the incorporation of various methods take place, thereby allowing the clarification of a framework for design decisions to be identified. It's recommended that research be scaled appropriately to match the allowable schedule and scope of an intended project.
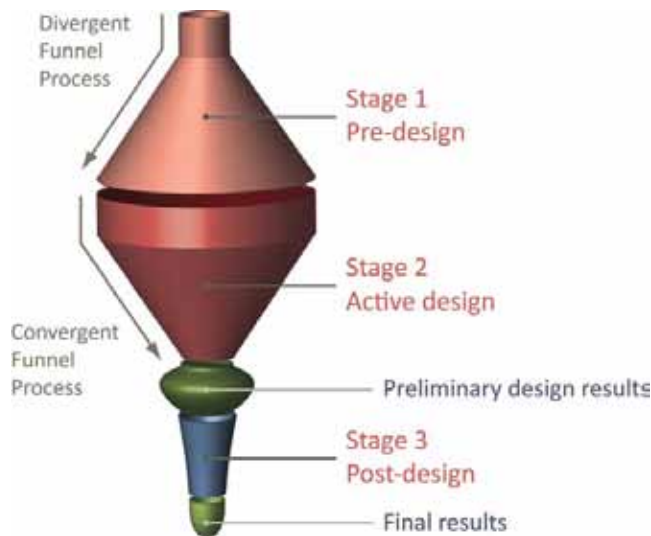
Fig. 1 Divergent to convergent funnel design process

Stage 1: Pre-design
The pre-design stage incorporates concepts such as inspiration and planning. This is usually when discovery and observations take place allowing opportunities to be identified. This stage is preparatory to any design process decisions being undertook. The research methods that may be conducted during this stage are not listed in any specific order as they may be conducted simultaneously with one another or might not be appropriate to utilize depending on the scope of the project.

They include but are not limited to the development and conducting of:
- a design brief
- online sampling and data base searches
- behavioral research such as ethnographic observation including: documentation of artifacts, activities, actors, and the atmosphere
- lifestyle analysis and cultural probes
- participatory research
- market analysis
- stakeholder analysis
- user interviews, which include: structured, unstructured, and focus groups
- questionnaires
- surveys
- playcentric research

- flowcharts
- storyboarding

The design brief is developed with the intent to outline the goals and objectives of the project. This document facilitates a framework the designer may use for evaluating the direction of the designs. The design brief should begin as statements of what is known, i.e. the client, project objectives, time frame, and other information discussed during the kickoff meeting. The brief should begin as a series of questions that need to be addressed and discussed in order to gain a complete understanding of all components and influences on the project. Preliminary research, that clarifies the objectives and obstacles, is conducted and the insights are expressed and then documented. The development of this material should aid in an understanding of the target demographic and market environment, as well as other background related information. Once these areas are listed the relevant research methods can be selected that will establish paths to achieve the goals. The paths and or process should be included within a section known as the design proposal. This document should include the outlined time frame and desired charts that establishes when and what will be conducted. The proposal should also contain the strategy and program plan. Once the proposal is in place the design brief will provide the information and directions required for the designers to develop the concepts.

There are many approaches for conducting behavioral research. Ethnographic practices are a main group with-in this style of research. "Ethnography is a qualitative research method that involves the description and study of specific peoples and places." The goal of ethnography is to enhance the understanding of what is foreign to one's own comprehension. Standard methods include casual observation, systematic observation, and participant observation, which has two types: developmental panels and in-home placement/assessments (Sommer, 363, 47-61). New product ethnography is defined as a predictive field that uses descriptive process to determine value opportunities. NPE goes beyond observation and techniques used in standard ethnography in order to deliver actionable insights. Process methods include: interviews, observations and visual stories. NPE shares many traits with anthropological modes. New ethnographic research concentrates on determining what are the artifacts, who are the actors, what the activities are, and what is the atmosphere. (Cagan, 108, 183-190)Other methods within Behavioral Research include: Behavioral mapping which centers on locations and movements, Cognitive mapping which deals with the mental images of places, and Trace measurements which tracks and identifies how every contact leaves direct and indirect traces. (Sommer 63-79)

Stage 2: Active design
The active design stage encompasses activities that take place during ideation or the design development; it is a time when identified opportunities are further explored. Research methods are utilized to aid in the selection and development of generated concepts, refinements are made, models and

prototypes constructed, and some evaluations conducted. The usage of these methods in this stage allows insight into the user demographics, competitive analysis, evaluation of branding and identity, and understanding of laws and regulations.
Research methods that may take place during the active design stage include:
   - market comparison, market segmentation
   - competitive benchmarking, differentiation matrix
   - technology probes
   - morphological matrix
   - persona development
   - velcro modeling
   - prototyping
   - form & function studies including: sketching and CAD modeling as research
   - User centric methods that include: stakeholder analysis, circulation analysis, ergonomic/anthropometric/& biometric/biomechanical analysis, task analysis, context and location mapping, interaction experience analysis, user brand and identity experience, flowchart documentation of usage/process/&procedure, story boarding
   - design improvisation/role playing (ethnography meets theater)
   - questionnaires and surveys
   - survey of codes and regulation, i.e. ADA compliance
   - journal and diary reviews

Upon conclusion of the Active design stage the fruits of all preparatory work and effort are apparent in the design solution. At this point the resulting designs are a representation of the synthesis between the selected research methods and the informed design decision. This is the stage when the connections become obvious and the research methods are focused to provide an accurate evaluation of the final results.

Stage 3: Post-design
The post-design stage allows time for the evaluation, analysis of the design, and final refinements. This ensures the design is meeting the objectives, needs of the end user, and criteria outlined by the other research methods. There are many methods that are used in the post-design stage to further refine the results. These include:
   - usability testing
   - client presentations and feedback sessions
   - refined prototypes and limited test runs
   - finalization of the program materials including documentation
   - life cycle analysis
   - criteria evaluation
   - fabrication and material refinements
   - development of the bill of materials and bidding process

Summary

The three stages, pre-design, active design, and post-design, are presented as a way to manage communication of the connection of research methods and informed design processes. Together the stages work as funnels that help shape the overall process. The different research methods and processes act as filters within the funnels and allow the information to flow through in a controllable manner. The inclusions of the methods themselves create the framework in which design decisions may take place. Although this is presented in a more ridged approach, it is ultimately up to each designer to select which filters or research method will be used within each stage. This is establish so designers are allowed the flexibility require to customize each approach in order to accomplish the most ideal solution.

Case Study

There are a lot of options designers have for gathering information and conducting research. The following case study illustrates selected methods the SIUC Graphic Design II class utilized to find and resolve problems with an outdated environmental graphics program for the SIUC Student Recreation Center. The class used *The Wayfinding Handbook: Information Design for Public Places* by David Gibson as the instructional material for the project. There were seventeen participants involved with various aspects of this ten week project that ran during the Fall 2009 semester. The participants were responsible for the implementation of the stage funneling process and for the selection and development of the research and design procedures.

Stage 1 pre-design processes - research

The research in stage 1 was executed over a one month period and was conducted utilizing many different forms of input.

The kick-off party

The project began by meeting with the clients. The problem was presented and the students discussed a series of question the instructor had developed for the meeting with the clients. They determined and outlined the goals and objectives during this meeting. A time table and foreseeable obstacles were discussed. By the end of the first meeting a working outline for a design project brief, that also listed how the project phases would be evaluated and success measured, had been developed. The brief was updated and refined throughout the pre-design and active design stages. Sequential meetings followed, and the class determined which research methods to use during the pre-design stage that would provide the required insight.

Seven students were assigned into two groups and directed to conduct new ethnographic observation analysis with emphasis on the artifacts, activities, actors, and atmosphere. They documented their observation via written journals and photos. They then discussed their observations with each other to determine correct interpretation of the observations.

Three students conducted circulation flow analysis with direction from the instructor. They participated in daily activities and recorded their insights. This analysis was conducted over a two week period. This process incorporated behavioral mapping, and identification of trace measurements.

Stage 2 active design - planning and process
The class developed a graphic strategy and program that functioned as guidelines for the development of the visual media. There is a lot of information that goes into making a wayfinding system for a facility. This section illustrated how the information was disseminated, the application of the information gained via stage 1 research, and how to read the graphs, charts, and other information system. The research select for stage 2 included: the development of a message schedule, a sign location plan, visual research for the development of icons, and determining sign types and elevations. The class was meeting with the client to review their findings and confirm directional intent.

Stage 3 Post-design - the results
This is the final stage in which all the refinements and evaluation were conducted. This stage solidified for the students the connection between the research methods and the design decisions. The final deliverables illustrated the outcome of the application of insights and information gained from appropriate research methods. The utilization of these insights allowed the designers to evaluate and achieve the outlined goals and objectives. During the final presentation the clients questioned the students about the reasoning behind many of the decisions that had been made. As a result of the process, the class was able to clearly explain their reasoning, and connect for the client how each element related to a component of research. As stated earlier, without a clear understanding and application of the connection between research and decisions a designer is left to his own intuition, and subjects the client to speculation.

The outcome of the SRC environmental graphics project has been implemented into a three year plan for renovation of the interior of the SIUC facility. The final results have gone through two more refinement/redevelopment phases and have entered the construction documentation, bidding, and implementation phases.

Conclusion
At the beginning of this paper I set out to explain how design research methodologies are connected to design decisions, and how clarifying the where and when of research method application via the stage based funnels would allow a framework for informed decisions to become visible. I believe these objectives have been achieved and application illustrated. I state this because of the response the students and others who have witnessed the application of the stages, and the feedback the clients have provided. One such student entered my office, and with a sarcastic tone, thanked me for

ruining his life. I inquired what he meant and he explained that since the class he could not go through his daily life as he once had. He now found himself evaluating everything he came in contact with; and attempting to understand why things where designed the way they were. He also explained how he now found great joy when he came upon something that in his opinion was designed well because he now understood the work and thought that was required to develop it. He gets the connection, and as do many other students involved with the case study. Now as they apply these principles they design with an understanding of the connection between what and why they design the way they do.

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Documenting Metaprocess

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Abstract

In traditional lecture-based learning, students synthesize and prove knowledge through written papers and/or exams. Because we don't usually use these tools in visual communication design, we have a more difficult task in determining that our students have learned the skills necessary to move on to the next stage of development. A final project may act as a culmination of these skills, but can prove difficult to judge and could simply show a sophisticated aesthetic. A better way to analyze these design skills often lies in not only viewing a final product, but in analyzing the process by which the designer arrived at that product.

In fact, it has long been the practice for university-level design students to collect process materials (mind maps, sketches, early mock-ups and trials) and include them for assessment when a final project is due. It has also been somewhat common for the student to assess these materials with some objectivity. However, at a few schools, the assessment is taken further with the required practice of metaanalysis,
going back to the goals of the entire semester or school year, analyzing the progress of their process, and considering their ultimate trajectory in the design field. This analysis often takes on a printed or digital book form called a Process Book, within which a designer can explore themes and conceptual links between their process and the final book structure.

This paper would include examples, case studies and practical application of Process Books for undergraduate and graduate design education, as well as possible uses in interdisciplinary workshops and courses beyond design.

Documenting Metaprocess

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PROCESS: a series of systematic actions one takes to move from the beginning of a project to a successful end. *

METAPROCESS: the process of one's own process; a self-reflective experience that involves not only considering process but also analyzing the evolution of that process throughout a period of time in order to adapt and improve it.

I begin this paper with an assumption: process, having it and following it, is critical to a designer and a necessity for the success of designing anything. It is having a strong process, which is well-honed and well-developed, that makes us excellent designers, and it is the deep understanding of our process, learning to express, control and adapt it to each individual project, that keeps us excellent designers.

Design educators recognize this and have been teaching process, as well as collecting and using process materials for assessment, for years. However, instructors often assume that, with initial guidance in and repetition of a particular process, students will recognize the importance of developing and being conscious of their own process, and that they will grow to see that process is an adaptive and evolving thing. However, while instructors often equate grade process for each individual project, we rarely look at the greater development of process throughout the semester and assess the evolution of a student's process. Without guidance and assessment, students are unlikely to learn more than a single-project perspective of process.

*We all have a process, whether it includes day-dreaming in the shower, sketching on cafe napkins, flipping through magazines, incorporating current reading, chatting with colleagues or any other of a million paths we might follow to find a solution. Good designers and design educators recognize that it is critical to think first before jumping into form-making, the inclination of most young designers. Good designers and design educators also acknowledge the mutability of process, how it often shifts or gets truncated, or falls apart midway. As much as acknowledging one's process is useful, the next step of knowing and analyzing that process is also critical. This can give a designer many insights into: what works about a process; what might work better; what the reason that a project is failing might be; how to fit a process into collaborative environments; how to help others with their processes; and how to show employers, potential employers and clients how one's creative work is conceived. In other words, while we all have a process, we also have a process of process, a metaprocess, which can be studied for further success.

This paper discusses why and how the act of analyzing and documenting metaprocess in university-level courses can be a successful method of teaching students how to use and refine their personal process and therefore work more successfully in today's complex world.

THE PROBLEM: A NEED for CHANGE in THE CLASSROOM

As the field of visual communication design rapidly changes with new materials, new media and a sharp rise in graduates and practitioners, educators have had to make drastic changes in curriculum and class content in order to prepare students to enter into this transforming field. Not only are we expected to prepare them for new platforms and software, but we must position them to succeed with companies seeking out the expected problem-solving capabilities of a designer. In addition, the Millennial generation has a greater need to adopt a global perspective and find mechanisms to deal with the vast amounts of information that are now accessible; because of these factors students need to learn good judgment and ethics much earlier in their education[1]. With so much more to teach today, it becomes all the more important to guide students along a successful path to maturity, self-awareness and self-sufficiency.

Despite this, the common design classroom environment, the project-focused studio, which has served us well in the past and still produces excellent designers, has not significantly adapted or transformed to accommodate the needs of the modern design student. One way that many design educators attempt to solve this dilemma is through collecting student process materials such mind maps, sketches, and mock-ups, along with the final result of a project. In theory, this visual data gives instructors insight into students' more complete understanding of the assignments and critique, a better method for discovering any weak links in student discovery and research and a more complete view of the ultimate visual solutions. There are many benefits to doing this, including an emphasis on the importance of revisions in the design experience and confirmation that all work is original.

However, this activity of collection and analysis in the studio environment may not be getting to the core of what a modern student needs. After all, if we look at the long-term goals of most design courses today, we find that they include being able to:

- communicate about design principles and form
- apply design principles effectively
- use materials and technology competently
- accept and use critique to develop improved iterations
- work collaboratively with others for successful results
- find strong formal and conceptual solutions to every project
- approach design projects with good judgment
- build skills in design thinking and problem solving
- adapt to industry changes and needs

While gathering process materials tells us a lot about our students' skills in the first few goals listed, it doesn't necessarily identify whether students are building long-term skills and strategies that will support them throughout their careers and prepare them for today's complex world. In a recent survey of 41 design faculty, a majority of educators (67%) who collect process materials use them exclusively to determine that students are progressing through concepts and fulfilling project obligations[2], while not considering factors like: growth, evolution and adaptation of process; skills in writing and critical thinking; or full understanding of and response to critique.

In order to build an improved version of this studio-based model with process collection for assessment, unfortunately design educators do not have the luxury of looking to traditional models of university-level studies. These lecture-based models typically involve students attending lectures, participating in various exercises and discussions, and finally proving that they have a deep knowledge of the subject through written papers, presentations and/or exams. In visual communication design, we rarely participate in this lecture-based model or use these assessment tools to evaluate deep retention of knowledge. In fact, research regarding the evolution of the lecture-based model to accommodate the needs of the modern student has included using the studio-based methods of group critique and process collection for inspiration.

However, we can certainly look to this current research in lecture-based learning models for some relevant ideas in thinking about and teaching design more effectively. For example, in "Engaged Learning: Enabling Self-Authorship & Effective Practice", writers David Hodge, Marcia Magolda and Carolyn Haynes discuss the need today for educators to abandon traditional content-centered curricula and focus on the student's need for more complete and complex instruction. They explain that because university students now need "knowledge of human cultures and the physical and natural world, intellectual and practical skills, personal and social responsibility and integrative learning"[3] to function in today's complex culture, they therefore need a more transformative learning experience, one they believe can be achieved through teaching self-authorship. If students are carefully guided down this path, the writers explain, they will cultivate a maturity and sense of self, learn to balance their own judgments with those of authority figures, hone skills in collaboration with others, discover connections with other experiences and classes, and develop a sense of self-initiated reflection[4].

The process of teaching self-authorship is described in three stages: the first is to develop assignments that lead students to the conclusion that there can be multiple solutions and perspectives to a problem (something our studio-based classes do well); the second stage is one where instructors take a diminished role and act as mediators while students move toward co-designing the learning experience; the third allows students to build their own values and views so that they can realize their roles as self-authors. To do this, the writers explain that faculty must progress from "giving answers to and exercising authority over students and toward encouraging questions from and sharing authority with students" (Hodge 4). While they suggest that developing full curricula with the goal of self-authorship should be a consideration for all programs in the future, I believe that each faculty member can incorporate the spirit of this idea in their classes by creating more complex Significant Learning Experiences (SLEs) through metaprocess analysis.[5]

L. Dee Fink describes SLEs as those which include as many of the following criteria as possible: foundation knowledge, application, integration, human dimension, caring and learning how to learn. While Fink

[3]   DOCUMENTING PROCESS

Components of Significant Learning Experiences as defined by L Dee Fink (Fink 31) and how they might apply to university-level design courses.

COMPONENTS OF SLEs	GENERAL DEFINITION	AS IT MIGHT APPLY TO DESIGN
FOUNDATION KNOWLEDGE	*learn key information and ideas, basic knowledge*	*understand basic design principles, history, typography*
APPLICATION	*apply the basics through critical, practical and creative thinking*	*apply design principles and conceptual ideation to design; critique design*
INTEGRATION	*find connections between projects, courses and personal experience*	*identify relevance of design career beyond each project; connect design projects to other classes and personal experience*
HUMAN DIMENSION	*learn about others and develop self-awareness; self-authorship*	*work in collaborative efforts; study social implications of design; participate in self-critique*
CARING	*develop an interest in the material, project or education*	*work with topics that the student feels invested in*
LEARNING HOW TO LEARN	*learn how to become a self-directing learner; develop metacognitive awareness & deep learning*	*participate in deep self-critique and analysis of process*

acknowledges that not every assignment can have all of these components, he states that with each one included in an assignment, the student is more likely to retain knowledge and therefore have an SLE [6]. While most traditional assignments in studio-based courses cover both foundation knowledge and application, and sometimes parts of integration, human dimension and caring, they very rarely involve learning how to learn.

In addition, Fink explains through a retelling of Phil Candy's 1991 research into self-directed learning, that while having students simply do an assignment certainly does promote learning, an accompanying over-arching analysis and critical reflection can engage the student further. It will enhance their learning experience, encourage a growth of understanding and move a student toward deeper, self-directed learning [7].

Finally, educational researcher Kenneth Bain notes that this is not just relevant to the educator, but also the student. In discussing the favorite classes and projects of students, he found that they preferred those that taught "multiple perspectives and the ability to think about their own thinking" [8]. It follows then that, as design educators, we should aim toward building self-authorship in order to encourage students who might be learning only on a surface (or strategic) level to shift to deep learning experiences (see sidebar for definitions).

Are we doing this in the traditional studio-based model? I would argue not. The majority of design assignments, especially those in foundation-level courses, have clearly defined parameters and are meant to replicate the work environment of the past. Educators assume that students will get to deeper learning experience through repetition and critique, but we rarely guide them to that deeper learning and reflection or require them to prove an understanding of the 'bigger picture'. Because it is easier for many students to accomplish these defined goals on a surface level through critique (and sometimes unintentional art direction), they rarely turn to a more complex analysis of the experience on their own. In addition, because so many classes follow this project-based model, new faculty often perpetuate these issues by using this model for their curricular development, and in the process fail to see the importance of the pursuit for a deeper learning experience.

LEARNING EXPERIENCES DEFINED:

surface learning experiences
those in which the student focuses on memorization and the task itself with little association outside of class; often exhibits fear of failure and is usually frustrated; often missed the point of the learning

strategic learning experience
a very well organized form of surface approach; motivated to get good grades and views learning as a game

deep learning experience
those in which the student focuses on ultimate learning and connects this with other courses and experiences; more gratifying to the student [9]

On the other hand, some educators overcompensate for these project-focused classes by building activities in the curriculum that might engage or help make connections for the students but ultimately fall short. In "Understanding by Design," Grant Wiggins and Jay McTighe explain that many educators who do this do not direct those activities to the next intellectual level, therefore losing the activity's meaning and connection [10]. In other words, we need to be identifying ways and guiding students to make connections between our projects, classes and university experiences, without connecting the dots for them.

So, how can design educators succeed in building this new design classroom? My argument is that by using the simple tool of metaprocess analysis, and the designing of Metaprocess Books, we can start to do just that.

METAPROCESS in the CURRICULUM

Using the prefix "meta" implies that within an action, you are referencing yourself in that action; therefore it stands that when I write about metaprocess, I am referring to analyzing the process of one's process. This is not only an analysis of the way one gets from the beginning to the end of a project, but a larger-scale view between multiple projects where we can see what steps we repeat, where we veer off, what we want to keep or transform, and where our process development is going.

In the past, when I have asked students to turn in work referencing their metaprocess, I have called the result a Process Book. However, in talking with other design educators, I discovered that the term Process Book has many different definitions. Most often it is defined as a pre-created binder in which students collect iterations of a concept, for submission at the end of a project. Some faculty require short writings or some designed artifact in addition, but typically these books are simply supplements to the final iteration of the project. They obviously have their benefits to both student and faculty. For the students, they become: a self-measurement of progress; a way to keep thoughts organized; an artifact of the work done if the final solution is unavailable due to scale or concept; and a portfolio supplement. For faculty, they become a deliverable that can be assessed beyond the final product, a means to identify and correct any shortcomings in process, and they can also act as proof of originality.

However, the Process Book in its most common form fails to address some of the conclusions borne out of the aforementioned educational research. The self-authorship dimension is often absent; either students are not required to analyze and write or, in cases where a project's parameters are very restrictive, they are unable to take ownership of their own concepts, content or the process itself. In addition, while by collecting process we can easily teach and assess the first two components of an SLE, and occasionally an additional one, the final component of learning how to learn is rarely included. Finally, by only using process collection as a solution to the inadequacies of the studio-based model, educators are building an environment that might encourage surface learning since we are not guiding a student toward a superior learning experience. Therefore, I argue that by redefining the Process Book to include metaprocess exploration and analysis, we would benefit from all that creating a traditional Process Book offers and also from the added level of self-authorship.

ADDING METAPROCESS BOOKS to SYLLABI

Metaprocess analysis is entirely compatible with both traditional and more progressive curricula; students can develop the same design projects and use the same process that instructors normally teach. Instructors should require that students keep and document all process materials, and at the end of each project students should be engaged in a series of writing exercises. These exercises normally include giving an overall statement about the project and then answering a series of questions (see sidebar on the following page) which ask for more detail about the student's process in that particular project. Also, instructors should supplement the coursework with any needed lessons in basic design principles, multi-page document design and binding options (for printed Metaprocess Books) or website coding and structure (for digital Metaprocess 'Books'), as well as narrative organization.

The final task of the term, the creation of the Metaprocess Book, requires a few more steps to build the book's content. First, instructors should have students bring in and spread out all of their collected process materials, sketchbooks, computer files, etc., to analyze in class. Then they should participate in some final writing exercises guided by more leading questions (see sidebar), in class and through journaling homework

assignments, that allow students to find deeper connections to their semester-long learning experience. All of this documentation: the images, the explorations and the writings, evolve into the content of this culminating project of the semester, a designed printed or digital book which becomes a self-authored piece about their process development, influences, learning and conclusions.

This metaprocess analysis seems to hit at the very core of what Hodges et al. are referring to in describing the act of self-authorship. In this experience, students are given the opportunity not only to do design projects that parallel the professional experience, but then to act as narrators in the articulation of a complex learning experience. Students are encouraged to participate in critical reflection, engage in the curriculum, take ownership over their process, and begin to see trends in their design thinking that will serve them throughout their careers. Likewise, exploring these connections and learning about their own learning fits right into Fink's description of SLEs.

Through designing the Metaprocess Book, students also develop an editorial and curatorial stance and practice visual organization and pacing. This book also gives coherence to an otherwise jumbled sketchbook or set of notes in the form of a well-designed, concrete history and artifact which can be easily integrated into a portfolio and used to educate clients about the practice of process and the complexity of design projects. The added dimensions of 3D structure and form or animation components can also reinforce revealed themes and inspire advanced students.

Finally, this experience reveals to students, who often view process as a rote and fixed experience, that there is an evolution to process. If this tool is used semester to semester, this evolution is revealed as something that happens not just during their education but that adapts and shifts throughout a design career.

ASSESSMENT of METAPROCESS

Creating clear and well-defined assessment strategies is critical to learning today. Rubrics that are unpublished, short or poorly defined have been found to promote surface learning in many students [11]. For many reasons,

QUESTIONS REGARDING INDIVIDUAL PROJECTS
- *what were the intended goals of this project (see syllabus)?*
- *did you learn what was intended? why or why not?*
- *did you learn anything that was unintended? why?*
- *what did you learn on this project that you can apply to the next?*
- *what new skills, materials, principles, etc did you learn during this project?*
- *what were your influences, design or otherwise, for the drafts and final solution?*
- *what process did you take to get to the final result?*
- *what did you read or hear or see or do that influenced your process?*
- *how would you evaluate your participation and work on this project?*
- *what were some of the comments made about your work during critique? were those comments founded? how did they change you ultimate product?*
- *what do you think you could improve in your process? what worked well?*

QUESTIONS FOR THE END OF SEMESTER
- *what were the overall intended goals of this class?*
- *did you learn what was intended? why or why not?*
- *did you learn anything that was unintended? why?*
- *how would you map your path from each part of your process to the next, all the way to the end product?*
- *look at your process through your assignments in this class. what similarities do you see in your process?*
- *where was your process successful? where could it be more successful? how might you be able to enhance your process to improve final results?*
- *how do these projects relate to each other?*
- *how do they relate to projects in other design courses?*
- *how do they relate to your experiences in other non-design classes or to your personal experiences?*
- *what possible themes do you see emerging between projects, in process, content, form or concept?*
- *how would you define your own personal process?*
- *how has analyzing your process changed your opinion or understanding of the projects assigned in this class?*
- *how has analyzing your process changed your opinion or understanding of your process?*

Millennials are naturally prone to surface/strategic learning, foremost among these are the easy accessibility to incomplete information and growing up in multi-tasking environments [12]; because of this, educators have to be acutely aware of assessment strategies, clarity and complexity.

With the addition of Metaprocess Books to a syllabus, instructors now have a wider range of criteria with which to assess. This makes it easier to identify when students have built their projects solely using a sophisticated aesthetic or have instead coupled a good eye with the skills in critical analysis, problem solving and writing that our graduates should exhibit. Students can prove an understanding of the course content while also discovering the importance of research, iteration, analysis, and writing in the context of design.

The complexity of this final product, as well as the assessment rubrics used, will depend on the content and goals of the class as well as the level of students. In an introductory class, instructors might grade only for extent of exploration and basic design skills, whereas a senior-level course might include conceptual development of form, depth of exploration and research, advanced layout skills, writing skills and readability, structure and narrative, ability to create new solutions for each problem, ability to self-critique and self-reflect, ability to look forward rather than simply chronicling and ability to critically and creatively think.

All of these criteria can help better identify deep design thinkers who will succeed in the design field. What is critical also is that we instructors provide clear and deep assessment as well, or the students may feel that their exploration is insignificant. We need to build clear expectations of process development into our rubrics, publish those rubrics, give the students tools to accomplish those goals and provide complete feedback that can be followed for improvement.

METAPROCESS in NON-DESIGN COURSES

Not only can this tool be tailored to a foundation-level or upper-division course, but it can also be employed to create SLEs in multidisciplinary environments. Kent State University, like many other schools, is looking to build multidisciplinary opportunities for their students to enhance

the educational experience. My department was engaged to join in a university-wide discussion of possible connections between courses from multiple divisions. In working with colleagues in the English and Sociology departments, we developed a triadic course proposal which would employ the use of Metaprocess Books and could thereby encourage and enhance a deeper learning experience of the primary course, Introduction to Sociology.

In this proposal, non-design students would attend the lecture-based sociology course as normal, participating in exercises and assignments that focus on investigating human social activity, social movements, gender and race. In the corresponding English course, students would be writing two kinds of assignments: research papers that focus on the information regarding sociology, and reflective writing that would focus on personal responses, analysis of their experiences in researching these topics, and relevance of these topics to other courses and life experiences. In tandem, they would be attending a design course for non-designers that teaches basic design principles, concepts, materials and software; students would spend several classes discussing and analyzing narrative form and multi-page document design.

The culminating project for this semester would be a Metaprocess Book that uses the design skills taught and incorporates the written explorations and narrative built in the English course about the assignments from the sociology course. In doing that, students not only learn about sociology, but also about how they learned what they learned in that class. This creates a perfect opportunity for students to practice self-authorship. We hope to offer this triad, or one similar to it, in the coming year.

IN CONCLUSION

While theory is all well and good, the ultimate proof must come in the practical application of these ideas. In using metaprocess analysis and the creation of Metaprocess Books, I found not only that they were great tools for assessment, but they were met by the students with interest and enthusiasm. Each student found individual satisfaction and inspiration from the experience, which they revealed in their writings and in post-semester interviews. In conclusion, I have documented comments and statements,

descriptions, excerpts and images on the following pages for readers to explore and consider.

APPLICATION of METAPROCESS

I most notably assigned Metaprocess Books to two of my classes in the past, both of which included the study of narrative and multi-page design structure as part of the syllabus. One course, an entry-level offering called Graphic Structures and Systems, used the Metaprocess Book to explore learning goals, methods and process, as well as pacing and narrative in design. Assessment beyond form and successful iterations included evaluating for a clear understanding of class objectives, writing skills and readability, and depth of process analysis.

The other, an upper/graduate-level course called Bookmaking for Designers, required that these advanced students explore their process on a deeper level. Their evaluation included an additional level of concept-driven form.

Both classes had many successful outcomes, in both analysis and form. Several students planned to include this book, or some iteration of it, as part of their portfolio. and one student, Shannon Sullivan, mentioned a recent interview experience where his metaprocess analysis better prepared him for interview questions posed. He also explained that while other instructors had assigned Process Books, that he had only been required to write: "Here's my idea. Here's how I did it. Here's why it makes sense... but this [experience] made me slow down and look at what I'm actually doing." Another student, Chris Sharon, said that this assignment allowed him to organize and catalog his process in a coherent way rather than relying solely on translating his sketchbooks to others and, in time, to himself. Student Vanessa Kraps explained that her book became a kind of journaling exercise that revealed not only how this class fits into her other educational experiences but also how she approaches problem solving both in school and in life.

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DOCUMENTING PROCESS   [8]

ALLAN KNEALE
Visual Communication Design BFA 2010, KSU

Allan, who compared creating a Metaprocess Book to when a professional golfer videotapes his swing to analyze later in order to tweak and perfect it, came to an important conclusion in his analysis. In class, he introduced a material into his early projects that continued to appear throughout the later ones as well. When he started to write and talk about his process, he then realized that most of his projects throughout school were driven by a similar obsession with a material, a technology or an art/design process. He found that he tended to discover something new, obsess about it, explore it to its fullest in every preceding project and then "burn out" on it. He then would come across another and continue the trend. This led him to understand that, with his process, he must continue to explore his surroundings for inspiring new "obsessions".

During this particular semester, Allan was obsessed with ribbon, in particular a 1/8" wide red ribbon that appeared in all but his first project (his least successful). His Metaprocess Book, therefore, took on the form of a ribbon box, from which slips of paper could be pulled to reveal analysis. He appreciated that this project allowed him to focus on analysis and writing, rather than plugging images into a template.

EXCERPT

"In my typical process, the way I tend to work is to find a new material, application or way of approaching something and run with it. I almost become obsessed in a way. As soon as I get a project to do, I will think of a way to include my new fascination, whatever that may be at the time. This time, in bookmaking, that fascination was with string [...] we had taken a field trip to the Gund Library to view some artist's books. There was a particular book that caught my eye [...] by Keith Smith and was nothing but white pages and string. The simplicity of the idea of using string to flow between pages really spoke to me. I kept reflecting back on this idea for my following book. The more I reflected back on the book, the more I began to think about using string as a line element [...] These were simple ways of using string but I was beginning to see possibilities. [...] The concept of paths could really lend itself further to paths. The more I worked out ideas and began creating mockups, the less and less excited I became. I slowly wore myself out on the string idea. I now realize that this is how my fascination process tends to work itself out. The idea of using string was beginning to dictate and overpower my piece. I had blinders on that only allowed me to see the string. I went back to my journal entries and found them to be fresh and engaging. I decided to use one strand of string in this book as an homage to my prior obsession and I was ready to move onto my next fascination with a new process, material or application."

[9]　　DOCUMENTING PROCESS

CHARITY THOMAS
School of Library & Information Science, MLIS 2010, KSU

Despite not having a background in design, Charity made every effort to build her process throughout the term. While her typography and layout skills were less developed than most of her classmates, she quickly proved to have strong skills in concept-building. Her early explorations and sketches, though not always focused, were always compelling and thoughtful. However, her final iterations often fell short of her initial plans and personal expectations, seemingly because of her lack of formal skills.

When Charity explored her process, though, she discovered that the cause of her problems was actually her early over-analysis and focus on conceptual development. She found that her most successful projects were those that she created without losing sight of the initial learning goals of the assignment. She learned that going off tangent, with too much energy dedicated to concept, cost her time, money and ultimately a strong solution. She saw this as a lesson that could easily apply to other parts of her education and life experience as well.

Because her conceptual-building tends to take place in bursts, Charity's Metaprocess Book took the form of a series of pop-out Turkish Maps.

EXCERPT

"My creative process happens in bursts. I start with a concept and then sketch out many possible ideas to complete the project. I usually let those ideas float around in my head for a few days before going back to my sketchbook to further work out the concept. The results give the impression that I change my mind too often."

DOCUMENTING PROCESS   [10]

JUSTIN CLAPP

Continuing Education, Certificate of Design 2009, Rhode Island School of Design

STATEMENT on PROCESS

"Creating process books is a very important part of graphic design–design is process, and documenting is the most effective way to learn about it. Creating a process book is an opportunity to step back and view one's process from a macro level. It is a map, or guide, to how you think and work as a designer–how you arrive at conceptual directions, and how following those directions manifests the final piece.

My first exposure to process books was in design school, and I began to see how I worked as a designer. Upon creating multiple process books, I learned that my design process is very defined, and I approach projects in a very systematic manner. I begin with much research and reading. I create many lists, and lists from lists. A concept begins to emerge for me through this process. The concept becomes the lens that reveals every question and decision when designing the piece. Every decision I make is reflective and supportive of the concept I am communicating.

As a professional designer, I continue to document my process. Process books continue to be valuable tools for me to examine how a project progressed, and to see what steps and decisions I made. Documenting one's process is also important from an intellectual property perspective. Having everything well documented proves that you are the originator of your work–your ideas and representations are your creations."

CONNOR GAUGHAN

Visual Communication Design BFA 2010, KSU

Connor's work in my class was particularly open, insightful and thoughtful, but he struggled with his Metaprocess Book. He had made Process Books in other courses but had never been expected to participate in metaprocess analysis. He now had so much to comment on that he had to rewrite his content several times to hone his main arguments. Ultimately, though, he decided to create a four-part narrative that detailed the major elements of his process: conceptual development, research, organization/planning, and content building. The book, while very traditional, detailed his process successfully.

[11]   **DOCUMENTING PROCESS**
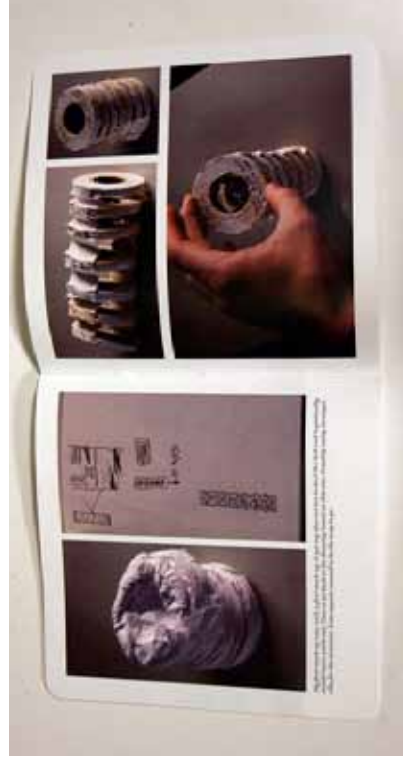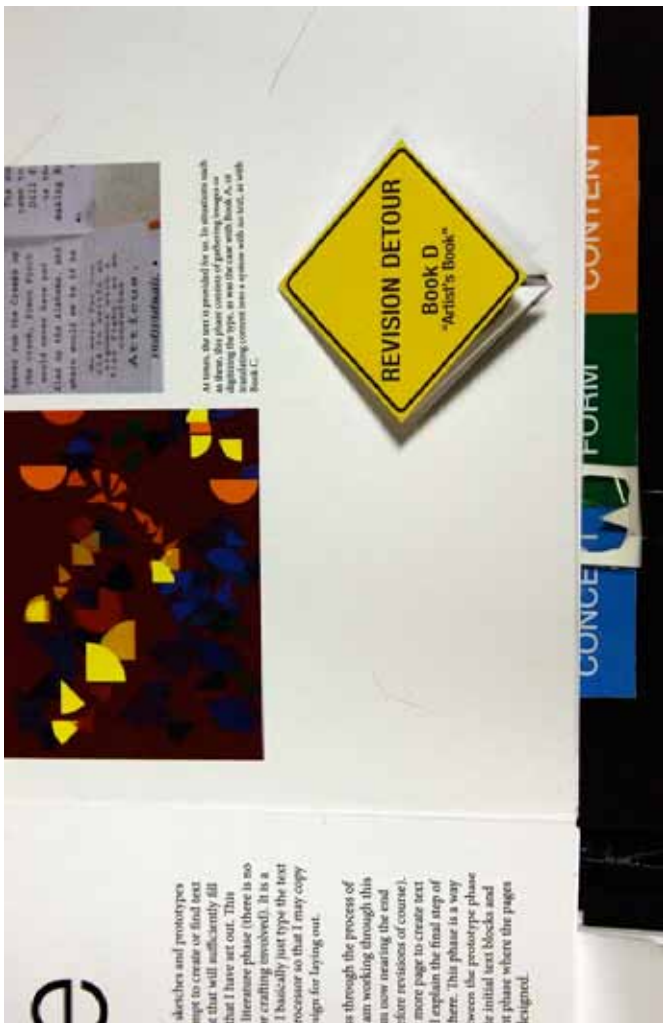
DAN MOSORA
Photo Illustration, BS exp 2011, KSU

While Dan did not find that creating a Metaprocess Book gave him new insight into his design process, he viewed this analysis as helpful and significant in two ways: he discovered issues with efficiency, realizing that he needs to better distribute time spent on each part of his process; and that in having looked at his process in a larger context (other classes), he saw that he is a programmer by nature and that this fact influences his designs.

EXCERPT

"As I stepped back to look at all of the information I have gathered about my previous projects, I noticed that my process follows a consistent path each time. Not only that, but no matter where in the process I started off, I immediately head to the beginning to progress through it all normally. [...] Through my exploration and revision of my own process I have learned a great deal about myself and how I go about completing tasks assigned to me. I discovered that I am a very meticulous person who must follow a decided amount of steps to reach a full understanding about the situation at hand. Anything short of completing the process fully results in a much inferior work. This is not a very good thing in the scope of a college course assignment, where there is a much more limited amount of time in which to create a suitable product. [...] In order to achieve the maximum amount of process completed, I must stay organized, record everything and, above all, never slow down. [...I also] noticed that my content generally lacks, so I must spend more time on content, though not less on concept, and make some allowances in the other two sections of my process."

DOCUMENTING PROCESS [12]

THERESA RUSHO
Continuing Education,
Certificate of Design exp.
2011, Rhode Island School
of Design

In Theresa's Metaprocess
Book, she chose to use the
visual language of the AAA
Triptik to map out her it-
erations and process paths.
She used language style,
form and narrative order to
analyze her work.

SHAWN SIMMONS
Graphic Design MFA 2007, Rhode Island School of Design

I was introduced to the idea of metaprocess analysis in
graduate school, where in our books we were expected to
build a narrative of our process, an analysis of our evolving
experience of connections and ideas. This book details a
semester-long series of projects revolving around a special
collection of magic-related objects and books. The idea of
"revealing" informed the binding, which includes die cuts
and folds which expose information along with additional
unexpected components.

[13]   DOCUMENTING PROCESS

Made You Look, But Can You Hear Me: Adding Value Systems Research into our Visual Communications

Eve Faulkes
West Virginia University

As the design profession expands in multidisciplinary and technological possibilities and the world shrinks in proximity and in resources, design educators must find a core set of principles to cover in the short period of a college design education. Like the design practitioner, who has taken on the roles of typographer, photo-retoucher, researcher, photo-lithographer, web designer, content manager, etc., we design educators wonder how many more ways our time can be split and still allow us to ever accomplish anything. And yet, as designers, we are also the arbiter, translator and even gatekeeper of messages that may have a long or short life and corresponding influence upon people, our environment and our culture. Because we mostly work at the behest of clients, messages pass through us and we know too much—where the skeletons are hidden. We can massage messages to make the strange or fearful seem familiar, or the familiar and unnoticed become new again. What is our responsibility toward the greater good? Who has the corner on what is good? Lucienne Roberts, one of the signatories of the *First Things First 2000* manifesto, states in her book *Good: An Introduction to Ethics in Graphic Design,* "Practically every decision we make as designers has an ethical dimension, requiring us to 'balance the forces' in our own small way as responsible individuals."[1] And finally, if we make that commitment to a stand and determine that our work will make a difference, how do we find a way to cause that message to penetrate the audience that would most benefit?

If we make them look by the power of our visual talent, will they hear us?

"THE NEXT WAR WILL DETERMINE NOT WHAT IS RIGHT, BUT WHAT IS LEFT"—this was Bertrand Russell's quote adapted to the famous Herb Lubalin stark typographic anti-war poster of 1972, in which the homonym LEFT was made clear in its interpretation as it was being crawled over by cockroaches. The poster implied that war is immoral, pointed to destruction in its wake, and made a powerful statement that I have never forgotten in all this time. I was an easy sell, however, agreeing with the sentiment. And who likes war? Well, some do, or at least war has been good business for some.

Recently several collections of posters have been published which remind us of how important it is for design to be the watchdog on issues in which we strongly believe. In the catalog for *The Graphic Imperative exhibition*, Steven Heller defines the advocacy poster as "the manifestation of a charged social or political idea designed to inform and illuminate, stimulate and inspire, agitate and attack."[2] A great many of the posters in the book *Design of Dissent,* by Milton Glaser and Mirko Illic, and of those in *The Graphic Imperative,* were works of self-commissioning—the designer feeling so impassioned that he was compelled to make the thing or burst. Acting as a responsible citizen, seeing injustice and being creative, the artist packaged dissent into a fitting metaphor.

Designers love poring through these clever and meaningful solutions. We instantly empathize with the causes and find them fully effective. How could anyone argue with them or fail to be moved? And they were *effective* for the people who carried the signs in battle and for those living the injustice represented by the messages. However, did they change the minds of the oppressors or the law-making bodies? Did we expect them to? If they serve to stimulate the solidarity of like-minded activists or to bring over those who were thinking the same thoughts but thought they were alone, was that enough? For the purpose of this paper, I will focus on design as argument of the sort in which we really desire to influence change of mind or behavior in those most resistant to our views.

We often preach to the choir as designers. Our best work in dissent may make viewers look if it is powerful, and if it is on the right channel or in the environment they frequent. We may make some converts. We may also make some people angry and dig in their heels, defending their position opposite ours. And we may be totally off the radar and unheard by some—they simply don't care. It's not their issue. My favorite ethical author, Henri Nouwen, in his book Peacework, tells us that the opposite of love is not hate; it is apathy. We designers want to shake our viewers out of apathy.[3]

Chaz Maviyane-Davies, the guerilla of graphic design, was a visiting artist at our university just before the last election. He is the master of political metaphor, and this one hits home with humor. *30 reasons in 30 days to vote for Obama* was an internet campaign launched in the last 30 days before the election.[4] His was the first design in the countdown. You could print these out full poster size and pass them on. Maviyane-Davies' *Game Over* poster (which substituted polluted water for harmless ammo) was censored by our University from being the image to announce his visit. Now with the oil spill crisis in the gulf, this 2009 poster seems more appropriate than ever.

So why don't conservative viewers love us (via our work)? Why don't people who need to live happier lives by changing their behavior act on our messages? Let's remember for a moment how we got here. We think differently as artists. We are, as a group of individuals, primarily liberal—politically, as well as in lifestyle. It is probably a matter of pride. We came through colleges and universities to acquire our design skills. The national ratio of political liberals in academic institutions is 8:1, according to a 2005 study by the George Mason University economist Daniel Klein, who used voter registration data to count Republicans and Democrats.[5] Hence, we are surprised when Barack Obama is called "professorial" as a negative characteristic when he speaks to us of issues. Americans have been lining up red and blue states and using "us" and "them" monikers for decades. The troops were rallied on the blue side and our man is in the White House, but gridlock has been the story ever since. So, the fact remains that we seriously want to change some minds when we dissent. Letting off steam and getting solidarity feels good, but our planet is in peril and our country has problems.

And by the way, why did the US vote for George W. Bush a second time and why did they lean almost 50% toward another Republican president, when at the end of FY2008 we had a 10.3 trillion dollar debt, a 6-year war costing 10 billion a month, over 4000 American lives and a hundred thousand Iraqi lives lost, and increased terrorism in the world? Something is amiss.

As we posture and fume, however, there are things we don't have quite right that we think we know. For instance, we are told so often that we believe it that the Democrats are the tax-and-spend party. Look at this chart above, which depicts of the national debt under the past seven presidential administrations from the Bureau of the Public Debt, US Department of the Treasury. The democrats actually always spent far less in office. The debt burden of World War II grew from $51 billion in 1940 to $260 billion following the war, and this chart begins as we recover from that during the Eisenhower administration. After this period, US debt generally matched the rate of inflation until the 1980s, when it more than tripled between 1980 and 1990[6]. However, as we will see, facts rarely matter in public opinion.

Liberals think of conservative right-wing extremists as being unenlightened, hypocritical, judgmental and stingy when they oppose our social justice agenda. But the fact is, that for all our liberal talk about justice and equality, it is the conservatives who do the lion's share of charitable giving regardless of their income level, as Michael Shermer says in "The Conscience of the Conservative."[7] As we have become more liberated in our culture and more autonomous at the expense of the community, our social capital has diminished so that we don't know our neighbors or help them. Robert Putnam points this out exhaustively in his book, *Bowling Alone.*[8] Conservatives have a better record of walking the walk. The real point is that we don't understand or sometimes even respect each other in ways that could lead to mutual agreement.

So, what's wrong with our picture?

The design problem-solving process, as educators know it today, has some variation close to the set of steps outlined in Jim Bagnall and Joe Koeberg's *Universal Traveler:*

ACCEPT>ANALYZE>DEFINE>IDEATE>SELECT>IMPLEMENT>EVALUATE.[9] These seven steps encompass the holistic view, set up by the new approach of service design and the familiar model of the semiotic theory. Designers are most practiced at the Idea, Selection and Implementation stages that deal with the aesthetics, meaning and purpose for our projects. Those parts are so well assimilated already that my purpose is to add more considerations to the front end of the process. A benefit of the *Universal Traveler* process is that it makes us do stretches before we begin, and assess our buy-in for passion. The ACCEPT step is so important, because the degree in which one puts his heart into the project will determine much of its success. We need to ask:
• what's in it for me?
• who can benefit?
• is it good for the planet?
• do I have time to do it right?

These can be the same questions the viewer may ask of the final message in our project.

Progressing on to the ANALYSIS stage, we research our material, do interviews with clients and our audience, and do ethnographic exercises to develop empathy for our client before defining the project and generating ideas. But what are we looking for in our observations? And through what filters of our own experiences and values are we doing it? For my students, I have borrowed some techniques from the IDEO design studio's process, such as shadowing and personas. Robert Manning's Visual Differential Theory

gives our program's process suggested amounts of graphic complexity, literalness and order to correspond with our intentions to inform, persuade or stimulate our audience.[10] We have a lot of sources to try to direct our thinking on the customer's behalf.

Our process can generate clever visualizations and powerful messages just like the ones we have seen. They can motivate some, stimulate some and miss some. Why? Back to what's amiss.

People are certainly not all alike—not in values and not in readiness to change ideas or behavior, or even to think about it. I would like to add three more resources to the ANALYSIS step of the design process to ensure we can hear each other.

MORALITY FOUNDATIONS

The first inclusion is the five foundation systems people use to determine what is moral and a value for them. If we are applying a different set of moralities than our viewer, we are the deaf speaking to the deaf (with our hands out of play).

This model comes from the research of Dr. Jonathan Haidt and Dr. Jesse Graham, professors of psychology at the University of Virginia. In their article "When Morality Opposes Justice: Conservatives Have Moral Intuitions that Liberals May Not Recognize,"[11] the authors propose that "researchers in moral psychology and social justice have agreed that morality is about matters of harm, rights, and justice. On this definition of morality, conservative opposition to social justice programs appears to be immoral." They argue instead, "the moral domain is usually much broader, encompassing many more aspects of social life and valuing institutions as much or more than individuals."[12] In this lengthy article, they present five foundations as mental preparations for reacting emotionally to issues. These are: harm/care, fairness/reciprocity, in-group/loyalty, authority/respect, and purity/sanctity. Political liberals have moral connection primarily affiliated with the first two foundations, and therefore totally miss the moral motivations of political conservatives, who use all five foundations to form opinons. One appetizing analogy Haidt made, was that "each system is akin to a kind of taste bud, producing affective reactions of liking or dislike when certain patterns are perceived in the social world."[13]

1. The harm/care system reflects a normal tendency in all individuals to dislike seeing suffering and to have compassion. However, this compassion reaction can be overturned by the four other systems.

2. The fairness/reciprocity system values virtues of altruism, fairness and justice and equality. These two systems combine to make the whole of what liberals who value the individual feel is moral. Other non-western cultures do not place such importance on individual rights, nor do they seek equality, even among the male gender. Equality of outcome or status is not a high universal priority beyond the liberal view.

3. In-group/loyalty values members of one's immediate group and those who sacrifice for the in-group, and conversely detest those who betray the group. Dissent, particularly during conflict is not only unpatriotic, but highly immoral.

4. Authority/ respect values legitimate authorities and leadership. Many societies value

subordinate virtues on the other end, such as duty, respect and obedience. This makes even civil disobedience unwelcome.

5. The purity/sanctity system is where the authors bring an interesting speculation of origin; referencing Leaky, they say, "against the background of primate evolution, the move to meat, which may have included scavenging carcasses, appear to have given humans—and only humans—the emotion of disgust." Disgust was connected with disease transmission (feces, vomit, rotting cadavers) and became a social emotion also, triggered by deformity, obesity, occupations associated with disposal of things disgusting. It later became connected to carnal passions and bodily related vices such as gluttony, greed, lust, while opposite spiritually clean and pious virtues were sanctified and valued.[14]

Our current President represents a legitimate authority, but his race puts him outside of the majority in-group, creating a conflict of values for conservatives. Perhaps this explains the fixation of the "birthers'" need to discredit Obama's legitimacy. Now, back to the 2004 Presidential campaign illustration. Haidt and Graham relate the two puzzling features of that election. In an exit poll that asked those voting for Bush their reason, they answered "moral values." Because we were already at war and talk of impeachment was in the air after the WMD were proven to be nonexistent, liberals were disturbed and perplexed at that answer. The authors explain that while the liberals used justice as one half of their evaluative principles, the conservatives only considered that one fifth of their reasoning. "Political and religious conservatives are more likely than political and religious liberals to moralize behaviors that do not involve direct harm."[15]

These authors recommend that, if liberals want to influence the electorate, then they should pay heed to which areas are sensitive to conservatives and couch their messages carefully so that their morals—even if they are not your morals—are not trounced or ridiculed. We should practice the tolerance that we so loudly tout.

So, what do we do with this information?

We can make visual analogies that draw from the loyalty/ in-group, respect/ authority and purity/sanctity categories.

CREATE SAFETY

A second inclusion brings sources which interject positive cognitive therapy that not only help give us ideas to assist our viewers in taking on change, but also help us as designers become aware of our own negative distortions. Put another way, we want to build self-esteem and sense of worth in those we would have make change for the better, and that practice will also serve us well personally. David Burns, MD, professor at Stanford University, differentiates between task-interfering cognitions and task-oriented cognitions as the TIC-TOC method of substituting positive thoughts for fears and worries in his book, *Feeling Good, the New Mood Therapy.* This method is not only useful for helping our audience embrace change, but also in helping our design students get off the starting block. Burns addresses a common misconception surrounding lethargy or procrastination: the idea that motivation is needed to begin anything. He places motivation as the second step after action. Do something, and then you get motivated and perform more action.[16] Furthermore, in describing why fear is not a good motivator, Henri Nouwen says that

"peace in the world cannot be made without peace in the heart… when peace-making is based on fear, it is not much different from war-making." Perhaps that underlies why facts don't help people change or even listen. Fear of consequences just makes people feel worse, perhaps even to the point of feeling that there is no use in trying. Focusing on the messages of peace, Nouwen says, "Many peacemakers, overwhelmed by the great threats of our time, have lost their joy and have become prophets of doom."[17] He goes further to tell us that activist peacemakers are rejected by those who don't see peace in angry and fearful people trying to convince others of their position— and that conversely, he himself has found that moments of peace in his life have been accompanied by joy.

In a book on business communication practices, *Crucial Conversations: Tools for Talking When the Stakes are High,* Kerry Patterson and four other psychologists give us a step beyond recognizing that there are other moralities than ours.[8] Writing for the business community, these authors give good preparatory groundwork to improve skills at interviewing, listening and doing more effective ethnographic research.
They recommend that we should:
• focus on mutual goals
• share sensitive topics with confidence and humility
• avoid scripts—party lines, sound bites
• avoid emotion triggers (at least negative ones)
• promote safety by avoiding finger-pointing and judgments
• contrast their position with an alternate viewpoint[18] (perhaps using a metaphor from one of the five foundations value systems).

The Crucial Conversations authors warn that when our morality buttons are pushed, it triggers emotions of the fight-or-flight variety, stopping any possibility of being heard. We get angry, get defensive, feel unsafe, and either leave, withdraw or attack. Whichever reaction we have, we are done with contributing to the 'pool of shared information," and a wall is built.

If a designed message is made carefully, you may either feel "safe" because you are affirmed in your own morality and you agree with it, or perhaps because the new idea is couched in a familiar metaphor for a morality you support, you see mutuality in goals you thought were different. As *Crucial Conversations* puts it, "the pool of shared information is the birthplace of synergy."[19]

At our university, we attempt to create our own survey questions that help identify hot spots for our market group. In developing a persona, we consider other value systems. In writing tag lines, we avoid creating a wall that is soundproof between ourselves and that audience. As we do shadowing or observing, we check for signs of these moralities.

CHANGE IN STAGES

A third resource that I find helpful addresses the idea of the "teaching moment" and timing, which can be everything. This is not the timing photographer Walker Evans talked about as the frozen moment captured perfectly, but the timing of readiness as a condition for hearing. James O. Prochaska and Carlo C. DiClemente co-conceived the *Transtheoretical Model of the Stages of Change* after fifteen years of studying successful self-changers. Prochaska determined that the magic allowing completion of a change

was not tremendous will power or personality type. Instead, success came from moving through sequential stages of change, each of which has characteristics and that can benefit by helping processes.

These stages are PRE-CONTEMPLATION> CONTEMPLATION> PLANNING> ACTION> MAINTENANCE> TERMINATION (or RELAPSE into an earlier stage)[20]. The breakthrough for applying this theory to design was in seeing that these stages of readiness for change had characteristics we could recognize in our audience, and the supporting processes recommended for each stage could literally be a prescription for designing to that stage. The key was in realizing that just as the patient can't quit smoking or become physically active overnight, our audience needs only to be moved to the next stage in their journey of accepting the new point of view.

The processes of change (those helpful techniques that go along with the stages) include consciousness-raising, social liberation, emotional arousal, self-reevaluation, commitment, countering (or counter-conditioning), environmental control, reward, and helping relationships. These processes can be applied to the experience as we target our messages.

THE BENEFIT PROJECT

An example of the stages of change can be seen in the BeneFIT program that one of our graduate students developed as her thesis project. Sponsored by a federal grant from the CDC and the Department of Community Medicine at our university, the brief asked us to create a program which would increase the physical activity level of diabetes patients by 10%. Emily Frye, the project lead, worked with a team of undergraduates to design contact points between doctors, nurses, group clinics, the patient, and the patient's family and friends, to give the patient an improved chance of success in making change.

Taking note of the helping processes for each stage of change in the Prochaska materials, Emily and her team developed and designed diagnostic tools for doctors and patients, refrigerator magnet tools for patients to track their progress, invitations for patients to give their families and friends to enlist their help and tell them how best to do it. They designed conversation maps, which were a series of group board-game, table-sized posters with places for cards to be placed as patients were encouraged to discuss questions and information pertaining to their own progress. The clinics and were also given postcards with messages of encouragement to be mailed between appointments to make contact with the patient. Artifacts for a buddy system were developed to facilitate helping relationships. A workbook was designed which translated the stages of change from the clinical language in the Prochaska references into local vernacular and familiar proverbs more understandable for low literacy populations.

The Prochaska theories are not new and have been used in clinics for a long time. What is new is the use of graphic design and service design to step in at the places patients usually fail. Fear of medicine and presumption of aloof doctors prevents patients from following through with prescriptive programs. The design in this case was careful to be friendly and to avoid triggers of morality or values that did not match the populations in which we were interested. The pilot project is in three clinics now and empirical data is being collected. While there is not a large enough sample to report findings as of

yet, Cecil Pollard, the Director of Research in Community Medicine at our University, reports that several of those in the program lost weight during the program and all of them reported an enhanced sense of well-being after increasing their physical activity. When the pilot project is finished, BeneFIT has the potential to be implemented in clinics throughout the state, affecting 30,000 people. The project also won an award in the Creativity 39 international design competition.

This Service Map for the BeneFIT project shows the Clinic Path that tracks the roles and contact points doctors and clinicians have with the patient, the Patient Path that tracks how the patient moves through the steps in the program, and a bottom layer that shows graphic design elements that are needed at specific points on each Path. [21]

VOTE INFORMED PROJECT

A second brief looked at University students in all four stages of readiness to vote and vote informed in the 2008 election. We found that our own class was a microcosm of the readiness spectrum—to the degree that when we started the project (just after the Republican convention), I found that none of my students had watched any of either convention and had no real opinion on the candidates formed by real facts. They weren't excited about a subject that was already causing me to wake up in the middle of the night worrying. I assigned them to watch speeches from both campaigns and then go to FactCheck.org. They came to the next class fired up and identifying issues that would effect their demographic (the ACCEPT stage of the process). Students were each assigned a stage of change and a liberal or conservative set of values for their persona. Then they determined an issue they thought would attract that persona. A work sheet gave some of the self-talk and excuses voters of each stage might say.

It was important that we spell out what we wanted the take home message to be, AND the desired result of the message (moving the reader to the next stage, not all the way). For instance, the contemplator is not rushed into the act of registering to vote, but instead is asked to collect information on candidates by writing down a url. Another poster will take him the rest of the way after he buys in.

Twenty-eight posters tackled a range of issues and reasons to pay attention to this election for university students. Messages were vetted for whether a hot button was pushed on any of the moralities that would close our persona's ears to us. The code at the bottom right notes which morality foundation the student used (in black) or if a button were pushed (in red) as she built her metaphor. The code is:
L=Ingroup/Loyalty
R=Respect/Authority
P=Purity/Sanctity
H=Harm/Care
F=Fairness/Reciprocity

Each student wrote up his argument, including his target student, his approach, and desired result. We presented them to the University President's office. With that office on board, these posters flooded our campus from a slide show on the University's home page, on electronic information boards on campus, and poster exhibits in the student union and a main lecture hall. Students were asked to select their favorite in a new

technology that allowed them to text message their vote into the University. The act of voting was the service design ploy to make use of the fact that far more people would cast a vote for the next American Idol than would vote in the election. We didn't care who won our contest.

We don't pretend that these posters were as powerful as those of Chaz Maviyane-Davies. But we hope these matched up to some basic truths, or nagged gently at consciences to move students a little closer to caring and taking action. Using these methods won't create posters more clever than other processes might. The difference is more about whether a few more degrees of forethought can make a good idea more effective and accessible for the particular person you want to hear you. We weren't able to collect empirical data regarding the minds that might have opened from this project, but we did get Jonathan Haidt's very favorable evaluation. We hope to work with him on a more controlled project (after his next book comes out).

As a review, then, when we look at readiness of our audience toward a change idea, we have certain goals for people in each stage:
precontemplators: make them aware of the issue;
contemplators: convince them of the issue;
planners: assist them in knowing what to do about the issue;
action-takers: reinforce their activity;
maintenance: keep them energized.

Jonathan Haidt's book, *The Happiness Hypothesis: Finding Modern Truth in Ancient Wisdom,* examines world cultures and faiths throughout history. At risk of giving away the holy grail of his research, Love and Work were a large part of the answer to happiness—love through relationships that give meaning, and work that feels more like a calling than a job.[22] If designers can help an audience improve these things, change has the best chance. If designers can look beyond the filters of fairness to reach those with other value systems, we may all come closer to communicating. And if designers feel connection to people as we follow our calling, work can become joy.

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The Twentieth Century Did Not Invent Graphic Design: Returning Book Arts and Letterpress to Design Education

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Book arts and letterpress have seen an impressive revival within the art and design community. The letterpress has once again become a popular process and represents a return to a craft-based approach to design. To understand why these seemingly anachronistic techniques are being embraced, an analogy can be drawn with the late 19th century English Arts and Crafts Movement. Formed in large part as a reaction to the factory produced objects of the industrial revolution, the Arts & Crafts Movement explicitly revived the arts of book design and the private press. Its followers celebrated the hand-printed book as a precious art object. In those books, which were a celebration of the written word, typography, paper, and ink, one can see the principles that William Morris had established at the founding of the movement—fitness of purpose, truth to the nature of materials and to the methods of production, and individual expression by both designer and worker.[1]

In an analogous fashion, today the letterpress has returned to the art and design community as a form of resistance to the pervasiveness of digital techniques. Although the computer has revolutionized the graphic design profession and facilitated new creative outcomes, it has produced forms of design knowledge that are divorced from traditional design values like craft, investigations of process, and communal studio work. The history of design component of a contemporary graphic design curriculum is sometimes approached as simply a requirement for graduation. Most students aren't even aware that basic design principles and terminology used in the profession and in computer programs are a product of letterpress printing and book design, among others.

This paper does not aim to demonize or exclude the important advances made within the profession over the last half-century. We have found numerous ways the computer can be used as a useful tool, even a useful tool for letterpress printing. Instead, following Bruce Mau

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[1] Philip B. Meggs, *A History of Graphic Design*, 2nd edition (New York, NY: Van Nostrand Reinhold, 1992), 174.

from his 2000 book *Life Style*, we must realize that an engagement with the past is a necessary step to propel the future forward.

> "Growth is only possible as a product of history. Without memory, innovation is merely novelty. History gives growth a direction. But a memory is never perfect. Every memory is a degraded or composite image of a previous moment or event. That's what makes us aware of its quality as a past and not a present. It means that every memory is new, a partial construct different from its source, and, as such, a potential for growth itself."[2]

My goal in this paper is to show that craft-based learning can, and should, coexist with pervasive digital pedagogies to develop thoughtful, multi-faceted designers prepared for the future. This paper will present a case study demonstrating the benefits of "Craft Based Learning" within graphic design education. Using examples of letterpress printing and book arts in design education at James Madison University—and incorporating historical, professional, pedagogical, and personal perspectives—visual results will strengthen the basis for my proposal.

CURRENT TRENDS OF DESIGN CURRICULUM

To make a case for letterpress and book arts in design education, one must look at current design curriculum, and consider whether the transformations of the last 10 years are sufficient. In years past advances in the profession have led to the familiar and necessary changes within a curriculum—increased typography offerings, integration of computer software knowledge, senior-level portfolio development, and a variety of special topics. These changes have kept many programs current and competitive.

The Arts and Crafts movement found a way to balance creativity with production. Today there is a big gap between a vocational, apprentice type training and the ideals of higher education. I believe that, once again, learning from the past requires striking a balance between the two with a renewed emphasis on the traditional, craft-based learning along with interdisciplinary education. In this world of instant digital gratification, attention spans have decreased in the classroom along with taking the time to create a design by hand. But why?

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[2] Bruce Mau, *Life Style*, ed. by Kyo Maclear with Bart Testa (New York, NY: Phaidon Press, 2000),.

The students' curriculum for a Bachelor of Fine Arts degree begins with studio art foundation courses and continues with fine art courses—these are all created by hand. So why has graphic design been sequestered to facilities revolving around a computer lab? Why have we been taken out of the hands on, craft-based learning arena?

Craft /kræft, krɑft/–noun

1. an art, trade, or occupation requiring special skill, esp. manual skill: the craft of a mason.

2. skill; dexterity: The silversmith worked with great craft.

–verb (used with object)

9. to make or manufacture (an object, objects, product, etc.) with skill and careful attention to detail.

The word craft makes many design professionals cringe; in today's modern world it is too often associated with scrapbooking, elementary projects and traditional home-based projects. But when one reads the definition of craft, there is no better word to describe the book making and letterpress process.

There are many types of established learning techniques already existing within design education; the most familiar of which is project-based learning.[3] One can say that getting the student out of the history of design classroom and into the pressroom is a perfect example of experiential learning.[4] But I prefer the term "craft-based learning." According to the Crafts Council, the national development agency for contemporary craft in the United Kingdom, a key strength in craft-based learning is as follows:

> It is worth noting that teaching craft in schools has been demonstrated to be very effective at promoting cross-curricular learning since it brings together critical thinking, practical making, an understanding of materials and creative approaches to Integrated Craft Teaching. Craft-based activities can bring

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[3] Project-based learning, or PBL, is the use of classroom projects, intended to bring about deep learning, where students use technology and inquiry to engage with issues and questions that are relevant to their lives. These classroom projects are used to assess student's subject matter competence compared to traditional testing.

[4] Experiential Learning is the process of making meaning from direct experience.

together learning in diverse disciplines, such as science, history, music and technology.[5]

THE BEGINNING OF A NEW CHAPTER

The graphic design curriculum at James Madison University is like most, with core requirements that provide for the optimum study of design theory, practice and criticism. Typography and page layout design are a constant, whereas courses examining the art of the book and letterpress printing are recent additions. I am in the process of developing a book arts' and letterpress facility and program at James Madison, an addition that will only strengthen an already existing multi-disciplinary practice within the School of Art and Art History. Current facilities are a bit challenging, as the presses are housed at my home in my garage.

One of the many things I have learned about taking on this curriculum development is that if you are not inspired, are not passionate for the process, and don't have a lot of time and patience, than it won't become a reality. I don't know if we can call it a dedication on my part or a little insanity, but the roots of my commitment to the addition of letterpress and book arts' to our program began with a personal experience. During the summer of 2007, I lived in Rosendale, NY at the Women's Studio Workshop creating a limited edition Artists' Book. That experience was profoundly transformative and changed how I approach graphic design practice and education. As for the residency, I had no expectations, no idea of what I was getting myself into. As a contemporary graphic designer for fifteen years, an artists' residency was an entirely new experience. Moving away from the computer was another one. I entered the facilities thinking, "Is this where I belong?" The answer was definitely, yes.

Confucius once said, "Learn as though you would never be able to master it; Hold it as though you would be in fear of losing it." Reading this quote resonates with the experience I had developing my artists' book *The Prairies*. Once faced with the daunting task of completing an edition of 70 books using a foreign process, I was surprised at how difficult it was to begin.

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[5] Crafts Council, Primary Curriculum Review page, http://www.craftscouncil.org.uk/about-us/press-room/view/2009/primary-curriculum-review?from=/about-us/press-room/ (2009)

The initial development of the concept for *The Prairies* was in 1996 during my graduate studies at The University of Illinois at Urbana-Champaign. The studio assignment was to develop a unique point-of-view about the prairies and express this in an appropriate vehicle. The first book's concept centered upon a poem by William Cullen Bryant about the prairies within a challenging typographic composition as concrete poetry.[6] I used the music structure of Rondo[7] to design the piece and to add reinforcement to the sequential nature of the book. This piece was completed using the computer. It looks and feels like a student project, nice to look at but not 100% memorable.

The revised concept for the artists' book retained many of its original ideas—same poem, concrete poetry, music structure changed to Sonata.[8] As I thought further about how much the book was going to change with the letterpress and book making process, I wanted to develop the concept through a more engaging structure that would provide a clear juxtaposition between the content. *The Prairies* is a rumination of the past, and the transformation of a pristine landscape into an endangered ecosystem. I comprised the text from a timeline of historical facts describing the demise of the landscape and added stanzas from "The Prairies", William Cullen Bryant's poem celebrating the Great Plains. Production of *The Prairies* took about ten weeks, working with assistants, to complete the edition using letterpress and silkscreen printing.

When you look at each piece side by side, the working process is not the only thing that sets them apart. The book developed at the residency becomes an event for the viewer, a visual artifact that could possibly influence, inform, and educate, something to be coveted. The hands-on craft-based approach to this process forced me to reevaluate my design process

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[6] Concrete poetry, pattern poetry or shape poetry is poetry in which the typographical arrangement of words is as important in conveying the intended effect as the conventional elements of the poem, such as meaning of words, rhythm, rhyme and so on.

[7] Rondo, is a word that has been used in music in a number of ways, most often in reference to a musical form, but also in reference to a character-type that is distinct from the form. Although now called rondo form, the form started off in the Baroque period as the ritornello form, coming from the Italian word ritornare meaning "to return", indicating the return to the original theme or motif ("A"). The typical Baroque rondo pattern is ABACABA.

[8] A term given to a three-part piece, normally comprising Exposition, Development and Recapitulation. The typical sonata pattern is ABA.

allowing me to form an emotional connection to the work. In hindsight, I realized that my personal and pedagogical experience with book design and letterpress is parallel to the beliefs of William Morris. In his writings in *Aims in Founding the Kelmscott Press*, he states

> I began printing books with the hope of producing some which would have a definite claim to beauty, while at the same time they should be easy to read and should not dazzle the eye, or trouble the intellect of the reader by eccentricity of form in the letters…And it was the essence of my undertaking to produce books which it would be a pleasure to look upon as pieces of printing and arrangement of type. Looking at my adventure from this point of view then, I found I had to consider chiefly the following things: the paper, the form of the type, the relative spacing of the letters, the words and the lines; and lastly the position of the printed matter on the page.[9]

It is obvious *The Prairies* is not a book design in the traditional sense, but the ideals of Morris—the paper, the form of the type, the position of the printed matter on the page, etc.—are carried throughout the entire process.

BENEFITS OF CRAFT BASED LEARNING

Following the success of my residency, I began taking steps to returning craft to design education. It started with teaching a special topics course in book design accompanied by a gallery show of Artists' Books from the *Women's Studio Workshop*. The founding partners came to James Madison presenting their 30-year history, critiquing my student work in book design and teaching a one-day workshop in papermaking. With the Women's Studio Workshop's assistance, I initiated the development of a special collection of Artists' Books at James Madison University. The next undertaking was the development of the letterpress studio, which is now Press Girl Press. The inaugural class was held in May of 2009 and will continue to be taught during the Summer Session. This undertaking has led me to many observations, many of which reinforce the idea that returning letterpress to graphic design education would be a vehicle to help tackle a number of contemporary challenges.

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[9] *The Beauty of Life. William Morris and the Art of Design*, ed. Diane Waggoner (New York, NY: Thames & Hudson Inc., 2003), 122.

First, it would help directly challenge the growing detachment that many students feel about the design project. With the letterpress (and book arts), students must be active makers. Success depends upon their intelligence, skill, perseverance, and engagement. Success also becomes communal again. Letterpress is a studio activity. It is designed as a group engagement. Students no longer work from home on their laptops (probably in front of the television); instead they have to collaborate and stay late and ask for help and form connections. Craft-based learning requires that the student be involved in the process not just spectators. Furthermore, in working with their hands, the students form a tangible reconnection with the designers of the past. Design history becomes not some hazy slide in a lecture course, but a real and immediate ally (or adversary).

Second, whereas computer design work is outcome driven, letterpress printing and book arts are process driven. Concept is a constant between them both, however Bruce Mau states it simply "Process is more important than outcome. When the outcome drives the process we will only ever go to where we've already been. If process drives outcome we may not know where we're going, but we will know we want to be there."[10] Excellent projects, if and when they come at all, are the results of a long and wonderful journey. Letterpress invites design to become a journey again.

Third, craft-based learning offers a personal and tactile connection to design and a commitment to the execution of concept. The student becomes fully and physically invested in the piece, taking complete responsibility for its outcome. The first time you print is an exciting moment. As the paper reveals the imprint, the idea that you are responsible for that design, color and execution, produces an overwhelming feeling of pride. There is no blaming the service bureau for not understanding your instructions, the printer not working correctly, the file not opening or saved correctly, fonts not matching, or colors horribly calibrated. That printed paper is mine!

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[10] Bruce Mau, *Life Style*, ed. by Kyo Maclear with Bart Testa (New York, NY: Phaidon Press, 2000), ?.

Fourth, the potential problems that maybe encountered with the letterpress process must be addressed in a thoughtful manner and resolved during the production of the piece. The letterpress environment requires the student to work in the same room with their classmates, opening up dialogue about the process. I have observed that students are interested in watching the process unfold, whether they are actively printing or just waiting to use the press. They are excited to see the results, knowing that no two pieces would look exactly the same, relishing the imperfections of the process. While both bookmaking and letterpress require a careful sequence of pre-planned steps, there can be beauty in the certainty of glitches and mistakes.

Bottom line, the knowledge gained by the student is unparalleled when they not only design the work while becoming an apprentice who produces the final piece. And in the spirit of the Arts & Crafts, the students learn many important things when using the letterpress and examining book arts': a sense of pride and ownership in their work; attention to detail and craft; a sense of history and tradition; a unity of design and production; a respect for materials and methods; freedom of experimentation; and a complete understanding of typography terminology.

CRAFT BASED LEARNING AND THE DESIGN PORTFOLIO

If we're going to have this discussion of a case for letterpress and book arts' in design education, we must look at the development of what most consider the final product of the design students' experience—the portfolio. It is unrealistic to believe that by incorporating letterpress into design education that most students' will work in letterpress studios or start their own shop. The previous points reinforced the need for the process to coexist with modern curriculum and to diversify the student's portfolio.

It is one thing for us to discuss this among like-minded educators, but what about the real-world professional viewpoint? To gain insight into this question, I interviewed Sam Shelton—founder of Kinetik Communications, AIGA Fellow, and a well-respected design professional and educator in Washington DC. Shelton was strongly supportive of the inclusion of letterpress in a student portfolio. He described reviewing literally thousands of portfolios over

his career and celebrated the importance of distinctive elements. And although Kinetik does not have a press in their office, his take on the importance of letterpress in design education is unequivocal:

> I cannot say that letterpress will make someone a better typographer but I will be able to see the level of dedication to the project, respect for the process, team-work and collaboration involved and the attention to detail necessary to make the project a success.

Shelton admires the discipline the letterpress demands from hand-eye coordination and the reinforced attention to the details of typographic form. He admires the "slowness" of the design process and is confident that the lessons learned through book design and letterpress are not exclusive to print media but translate into new media as well. Thinking back on a visit to our program at James Madison, Shelton says,

> I will always remember the books. They are an experience for the viewer that keeps them engaged with the project and makes a lasting impression. To hold the object in ones hand, the texture of the paper, respect the binding, materials of the book cloth. To see that a student took so much care to see the solution to the end and be involved with every decision is a personal quality that would be an asset to any design firm.

CONCLUSION

So what is the ultimate goal of bringing a 15th century process into a contemporary design curriculum? Craft-based learning provides the undergraduate a reason to slow down. It connects our students with the centuries-long history of our profession. It instills a sense of pride in their work, and a respect for materials & craftsmanship. It brings students off their couches and laptops and back into the studio with their peers.

Craft-based initiatives such as book arts' and letterpress are a reminder that we must teach our students not simply for their first job out of school, but to sustain a decades-long career in the profession. Fundamental design principals and skills will always be necessary building blocks for success—whether of an individual or an entire design program. And it doesn't get

anymore fundamental than ink, paper, letterpress printing and craft-based learning within design education.

First, Class

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Old Dominion University

The secret narrative of graphic design is class. Its rationale for design activity cuts across and is consistent with all current and historic accounts. In an allegedly postmodern culture purged of metanarrative, class hangs in there, overarching like everybody's business. Perhaps the oldest of old-school thinking, it's infinitely adaptable and near impossible to eradicate—not that designers are actively involved in the attempt. No matter how inclusive a design approach is pledged to be, class eventually has its way. Class gives the marching (and merch-ing) orders in America, a country mythically free from the social scourge. Paul Fussell showed otherwise, charting nine separate U.S. classes in his 1983 book Class: A Guide Through the American Status System. If designers accept Fussell's manual, they might consider themselves members of his outlying "category X": creative, irreverent, advertising-resistant types. However, even accepting this notion, if any social set has changed radically since the book's publication, it's this one—transmogrified into yet another caste.

A comprehensive examination of graphic design must admit to a confluence of objectives and consequences— intended or not. Class may not be the dominant characteristic, but its functioning should be considered first. Graphic design is, in essence, about differentiation. However defined, high-quality design is distinctive. Few design artifacts are intended as drift-net trawls, scooping up proles and patricians alike. The finer crafted the work, the more targeted—and restricted—the audience. And even in an American Idol-ized, socially networked world, hierarchies still prevail.

Position on the graphic design class ladder is established through the interplay of clientele and aesthetic accomplishment. The utmost stature in the field is reserved for designers with regular access to substantial capital. Graphic design's highest professional focus continues to be formal achievement for its own sake, though performed behind a scrim of pragmatic and conceptual rationalizations. Currently, this ideal realization is attainable only through the benefaction of celebrity-oriented, moneyed cultures (fashion, architecture, entertainment, and the arts) on a national or international level. Fortunately, the interests of these customers coincide nicely with those of designers adept in formal indulgence. Graphic extravagance—which denotes not a specific formal approach but an uncommon attention to styling and production beyond the means of standard resources—denotes the client-desired aspects of exclusivity and being "cultured" (in both senses, urbane and pearls).

Coding for class—high, low, and between—is the predominant effort in the graphic design process. The aspects of "good design" are synonymous with representations of refinement and rarity. The graphic design "canon"—espoused informally throughout the profession and illustrated in histories like Philip Meggs's A History of Graphic Design—is built upon exceptional productions, in budget, staffing, and resources. Common stock is simply that. To a degree, class coding is a moving target. Graphic designers must be attuned to the shifting subtleties of class and how to manifest it in form. An extravagant

budget alone doesn't guarantee a high-class result. Managed poorly, the outcome will express the opposite. High-class design is ultimately contextual, though some aspects can be described and remain constant.

A crucial 1993 essay (not only because it's still rare) on the class aspect of graphic design is Keith Robertson's "On White Space/When Less is More" (republished in the first Looking Closer anthology.) Robertson derives the origin, meanings, and function of the core—and somewhat paradoxical— indicator of class: "nothing." White space within layouts—extensive unprinted areas—"is used...for values of presentation that transcend economic values by insisting that the image of what you present is more important than the paper you could be saving." Robertson directly points out the connotative class implications of design's most precious formal commodity: "Clutter has come to represent working class (just as white space identifies high class). Clutter clearly identifies a market in those who are immediately suspicious of white space and have no hesitation about what it means—that this publication is not for them/not of their class."

Upon this sparse but charged ground, graphic design constructs its narratives of class. These edifices, however, are composed of elements like typography that must be wielded with nuance to establish the proper class address. Identifying a upper-class-laden font is simpler than setting it stylishly. It's these fine distinctions that often elude and frustrate design students (and many professionals). They are of a kind with Paul Fussell's class distinctions. Perhaps a seminar on class within graphic design curricula is what's required to sensitize students to form. Revealing graphic design's professional class structure may be an enlightening first exercise.

Moneyed cultural workers have ascended into graphic design's firmament in the decades since the 1960s. Up until then, the captains of corporate identity and advertising rode high—men like Paul Rand, Saul Bass, and Massimo Vignelli. As corporations lost their societal luster (becoming associated less with efficiency than with environmental damage, social duplicity, and heedless profit mongering), "cool" migrated to exponents of youth and high culture—as did a new generation of aspiring trendsetters.

Graphic design theoreticians and critics have steered away from class-based criticisms. First, such as graphic design critics/theorists exist, they're practitioners first, and fully vested members of the upper caste described above. Intellectually, parsing class smacks of Marxist analysis and is therefore stodgy and archaic—something we exhausted and moved beyond long ago. New theorists prefer launching new theories. But constructs like "critical making" never extend to questioning how top designers inexorably migrate to servicing high-culture consumption.

Those benefiting from class will not support an oppositional stance or challenge the economic order fueling the hierarchy. Critique of the status quo is regarded by leading critical-making lights as contemptibly naïve. Confrontation is only acceptable on the job—the ostensible insertion of "critical" content into elite design products. Churn out another award winner, collect the paycheck, declare your conceptual potency, and—best of all—realize no change. A class critique is also discomforting for privileged designers, as they envisage themselves as working outside of, transcending, or besting the common commercial realm. They regard their work as idealistic, in that it derives from heavily cerebralized, abstract principles. Graphic designers need make no apology for working within commerce. The problem is defining from the extremes: making consumerism the total determinant of design activity or shunting it aside completely.

Class is an unstated, unintended component of every proposed schema of design activity. According to writer and Walker Art Center design director/curator Andrew Blauvelt (from a 2008 article, "Towards Relational Design," published on the Design Observer blog), graphic design history can be divided into three phases or waves. Though he doesn't advance the notion, each coincides with class. His first phase still shapes much of graphic design thinking, "a search for a language of form...a visual syntax that could be learned and thus disseminated...universally." It originated the creeds of white space and modernist class indicators. The second wave, beginning in the 1960s, "focused on design's meaningmaking potential." This advance caused some disturbance in the field, as its formality lacked known class markers, rendering it beyond evaluation for mainstream practitioners. But the eagerness of the high-class realm to acquire "progressive" indicators brought its exponents on board (this second wave also marks the transition period of class leaders described above).

"Relational design," Blauvelt's declared current wave (not to be confused with the "relational aesthetics" of French curator and writer Nicolas Bourriaud) is "an era of relationally-based, contextuallyspecific design." On its face, relational design's mission statement—it "explores design's...effects on users, its pragmatic and programmatic constraints, its rhetorical impact, and its ability to facilitate social interactions"—is indistinguishable from existing rhetoric about graphic design's intentions and potentials.

Blauvelt's differentiation is that relational design "[defies] conventional working models and processes" and has no set formal expression. While it's debatable whether relational design describes an actual, discrete phenomenon, class already is its main component. Since the "relations" of this design are unspecified, a long-standing one like class is ready to fill the void. In addition, the majority of artifacts Blauvelt cites as examples are unique or rarified products. It's peculiar to assert the transcendence of formal concerns—and exclude class aspiration—when a Karim Rashid artifact (the Dirt Devil Kone vacuum cleaner, which "looks so good it 'can be left on display'") is prominently cited.

Class is the oxygen of design theory: nourishing and invisible. When Blauvelt—or, for that matter, practically any design writer of repute—refers to "design" and "designers," reference is being made not to the majority but to the persons and actions of a renowned strata. It's a shorthand that shorts the greatest share of practitioners. Their role is to envy and hope design fortune trickles down. Emulation is economically unattainable and conceptually suspect.

Discussions of class are predestined to conclude with a call for revolution. A sufficient act of insurgency is to simply contemplate class when critiquing graphic design. Particular clients and works are understandably more sought after for the creative and financial opportunities they offer. And all designers aren't equal in ability. But should some design(er)s be more equal than others? Are the terms of graphic design achievement transparent and accessible to all? Of course, one could reject the class premise entirely. Or argue that it exists but plays no role in design, or has negligible effect. A positive statement on class would be refreshing. Right now, class is dismissed, and we still have much to learn.

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Understanding the Pedagogy of Undergraduate Internship

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Abstract

The UK Dearing review (1997) emphasised that graduates should possess relevant employment skills, and many undergraduate courses address this through work-based internships. Internships have long been seen as valuable learning experiences for undergraduate design students, representing first engagement with communities of practice, and are a significant threshold concept (Meyer and Land 2003) for students en-route to becoming professional designers.

However, although internships can be symbiotic, the quality can vary, and so are arguably better seen as formative experiences, as summative assessment may be unreliable. This questions how we ensure parity between experiences, and consistency in quality of employer feedback. However because internships tend to be unobserved and the 'value-added' component is rarely quantified, there is a 'paucity of literature in this area' (Gomez et al 2004).

Therefore, this paper explores the observations of the author during a monthlong secondment to a car design studio, which coincided with the first month of undergraduate internships. This research will offer observations 'from the inside', and also include 'before and after' focus groups with students and company representatives, to gain insight into mutual knowledge transfer and value added. The focus group findings and the author's pedagogic observations as an 'embedded' tutor will be presented to generate discussion about 'assessed' internships, with final post-internship conclusions offered in June.

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Designers Experience Place

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Abstract

Psychogeography research is understood as the use of intuitive, emotional, sensual, and social lenses for an individual to understand and observe a place. A 'drift' or *derive*[1] is an approach that allows one to aimlessly wonder and remove oneself from predictable paths; thus gaining a new attentiveness to a place. One is drawn by the means of attractions and repulsions through sounds, touch, and visuals. During the drift, one is encouraged to let go, discover and interpret while exploring a place. The *derive* encourages an understanding of the design process while strengthening observation, drawing, design and communication skills.

This paper presents two design studio projects based upon the *derive*. The projects were created in different courses, using varied lengths of study with different outcomes. In the first course, the documentation of the experience is an art installation built on-site with found objects, drawings, and collages. Students are encouraged to create pieces which directly respond to the immediate site context – both physically, through the use of found, on-site objects, and emotionally, through personal reflections and responses to the site.

In the second course, the *derive* inspires a short, three day project documented through digital video. Working in small teams, the students attempt to make their city 'strange' to themselves by wandering on foot through areas they have previously experienced only from an automobile. Each team documents their 'drift' through the city as a short digital video. For the students, this exercise is purely the *experiencing* of place, rather than the activity of *designing* place. While creating the video is an act of design, the exercise attempts to remove the students from their conventional methods of design and routine ways of considering place.

[1] Constant and Debord. (1958). "Theory of the Derive". Amsterdam Declaration.

Effective Design of Educational Websites for Elementary Age Children: A User-Centered Study

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Abstract

Many educational websites for elementary age students exist on the internet today, however there is a need for more research to be completed in order to determine the level of effectiveness with which these sites operate. The purpose of this research is to examine and determine the level of effectiveness of a website for elementary age students. The research presented in this paper is completed in four stages. Stage one began with literature review and analysis of existing educational websites to distinguish problems with the navigation, information architecture, and visual appearance. In stage two, a new site design was proposed based on the research and analysis of existing websites. Stage three involved testing both the existing website and the redesigned website. In stage four a second iteration of the website is proposed incorporating the recommendations developed in stage three. Twelve participants in grades two through five were recruited in this study. All participants tested both sites to complete the same objective and offered their opinions. The performance was measured by time spent on each task, number of errors, and number of assists on both websites.

Quantitative and qualitative data were collected and from data analysis a set of recommendations for effective design of educational websites for elementary age children was developed and is presented in this paper. One of the most compelling findings revealed that while the redesigned site was easier for the students to use, the ease of use did not automatically dictate the student's preference in terms of visual appearance or enjoyment. The most important conclusion drawn from this study is the need to balance preferences with ease of use to create an interface which is both appealing and effective.

Serious Play: Design as a Model for Integrated Learning

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PRELUDE: *Playscapes – Designing Play and Playing with Design*

Several weeks ago, during a six-hour program initiated by the *Walker Art Center's* Raising Creative Kids initiative, my colleagues [i] and I were nearly overrun by a small cadre of future designers and artists busily creating elaborate constructs made of gum drops, marshmallows, foam-core panels and helium-filled balloons. Sticky, spiky, colorful structures, resembling the collaborative efforts of Buckminster Fuller and Willy Wonka, quickly filled the otherwise serene spaces of Walker's lobbies and lounges creating a spectacle that went toe-to-toe with the extraordinary works of contemporary art in the adjacent galleries. Inundated and overwhelmed by the scope and scale of creative production, we knew very well that this was a predicament of our own devising. We had completely lost control, and had no one else to blame. *This* was a total success!

Several months prior, we were invited by the *Walker Art Center* to create "an opportunity for children and families to actively engage with design through *play*." In short, *meaningful play* was our charge; all we had to do was supply the materials and programming for a series of projects that would combine the infectious power of play with the productive capacities of human creativity … easier said than done.

True to any design activity, we had no way of fully anticipating the extent to which our projects would initiate *meaningful* (not to mention *fun* and *playful*) experiences for the children, adults, the *Walker* staff, or even ourselves. But, as designers, we have grown accustomed to embracing indeterminacy and have become quite nimble when negotiating the unintended consequences of our own most well-intentioned plans. In short, we relied on our collective experiences in design and education and devised a rather straightforward plan of action: *keep it simple, and get out of the way*.

So, at 10:00am on a cold Saturday in February, we simply offered up an array of tantalizing materials that would most certainly appeal to even the most discerning or reticent child visiting the *Walker* that day. In the Cargill Lounge, we peaked their interests with large containers of gum drops and marshmallows coupled with a range of everyday, loose parts suitable for free-form constructions (mainly toothpicks, skewers and notched foam-core panels), while in the Bazinet Lobby we offered up 85 helium-filled balloons with strings and thin fabrics for the construction of air-filled structures of a most fantastical nature.

Within less than an hour, *Playscapes* went *viral*, fully demonstrating the Walker's ongoing commitment to providing social spaces and open activities to foster collective experiences around art and design. In a flurry of design activity, the Cargill Lounge quickly swelled into a small city of colorful and sticky structures that created a brilliant counter point to the minimalist installation by Robert Irwin in the gallery next door (Slant/Light/Volume). And in the Bazinet Lobby, throngs of busy *space-makers* filled

the room with colorful buoyant structures that acted as perfect foils to the monolithic nature of the original brick-built *Walker*.

In hindsight, the spectacular outcomes of the day's activities should have been of little surprise. After all, *design* is, in a sense, a form of intentional *play*; and *play*, in all of its varieties, requires little more than a open access to materials, space and time to quickly initiate fanciful constructions of a *designerly* nature. But upon further reflection, it has also become clear, that there was far more occurring that day than simple, momentary flashes of free-form play and uninhibited creativity. Believe it or not, skills were developed, lessons were learned, ideas were tested and risks were taken. Play, it turns out, can be *serious business*.

Below is sampling of reflections from several of the participants who contributed to the *Playscapes* that day:

"Look, this one has triangles, squares and even a rectangle, can you see?"
-Future Mathematician

"I'm making patterns, lots of patterns with lots of colors…"
-Future Textile Designer

"My tower fell over so I just turned it into a house…"
-Future Architect

"Yes, this is my spaceship and here is the space station…"
-Future Aerospace Engineer

"I want to be four dimensional…"
-Future Theoretical Physicist

"I'm making a house for my pet bug. He has six legs and so does his house."
-Future Entomologist

"This structure is just like that one over there, but bigger and stronger…"
-Future Structural Engineer

"If I connect this one to your structure, we can make it even bigger and better…"
-Future Urbanist

"The roof is like a cloud… look, our fort hangs from the sky!"
-Future Futurist

Clearly, I offer these reflections with a *wink and a nod* and certainly don't intend to saddle these otherwise innocent and lighthearted experiences with the serious expectations of a stodgy adult. However, when read outside of the clamorous environment from which they emerged, they do suggest a range of significant cognitive processing, higher-order thinking and creative problem solving underlying the supposedly aimless *play*. Therefore, if we shift our perspectives and consider the *multiple intelligences* activated by design-based play, we may just recognize a range new opportunities for developing the critical thinking, collaboration and insatiable curiosities necessary for *life-long learning* and *twenty-first century skills;* the very types of skills that will enable future generations to critically confront the numerous challenges *they* will undoubtedly face, and *we* cannot yet fully imagine.

ACT ONE: *The Serious Business of Play*

Contrary to widely-held beliefs, *Play*, it turns out, is *serious business*. Building on the theories and traditions of developmental psychologists and philosophers of constructivist education such as Roger Caillois, Lev Vygotsky, Jean Piaget and Maria Montessori[ii], *play* has again gained increasing significance as a vehicle for providing the types of engaging experiences and embodied challenges essential for cognitive development and *life-long learning*.[iii] Of course, any singular definition of play, with its myriad formulations and multiple permutations, is as difficult to pin-down as a child rapt in the frenzied pursuit of fun and high jinks. However, as a designer and educator of design, what is most useful to the trajectory of the work presented in this paper is to examine, underscore and articulate the intersections (or misalignments) between play *and* design that offer productive opportunities for integrated learning. In the interest of space and at the risk of over simplification, what follows is an all-too brief, yet critical, reflection on play and active learning as they pertain to cognitive, social and cultural development.

Roger Caillois (1913-78)
In his rather comprehensive classification of games and a broad analysis of the social function of play, the French philosopher and writer Roger Caillois provides six essential and determining characteristics that define activities as play. Play, he writes, is an activity which is essentially:

1. *Free:* in which playing is not obligatory; if it were, it would at once lose its attractive and joyous quality as diversion;
2. *Separate:* circumscribed within limits of space and time, defined as fixed in advance;
3. *Uncertain:* the course of which cannot be determined, nor the result attained beforehand, and some latitude for innovations being left to the player's initiative;
4. *Unproductive:* creating neither goods, nor wealth, nor new elements of any kind; and, except for the exchange of property among the players, ending in a situation identical to that prevailing at the beginning of the game;
5. *Governed by rules:* under conventions that suspend ordinary laws, and for the moment establish new legislation, which alone counts;
6. *Make-believe:* accompanied by a special awareness of second reality or of a free unreality, as against real life.[iv]

While Caillois both expands upon, and delves more deeply into, each of the above criteria throughout his book *Man, Play and Games*, there are several distinct assumptions lurking beneath his theory that demand further qualification when examined in the context of education and learning. It is important, then, to identify those assumptions that contribute to the distinction of play from 'real' learning and act as an obstacle to the consideration of play (and ultimately design) as an operative technique for effective teaching and integrated learning. For example, Caillois' first characterization of play as essentially *free* contends that "one plays only if and when one wishes to. In this sense, play is free activity. It is also uncertain activity. Doubt must remain until the end, and hinges upon the denouement."[v] In the realm of test-based, facts-driven models of education there are numerous institutional biases against the seemingly unfocused and *uncertain activities* that typify much open and *free-range* play as defined above. Such biases, well founded as they may be, overshadow and mask many of the proven cognitive and social skills that are activated through play and play-like activities.

As a result, opportunities for play tend to be more frequently *separated* out from institutionally-structured learning environments (such as classrooms, library, and

laboratories) and relegated to other more-officially sanctioned spaces for play (such as playgrounds, sports fields, and theaters) where learning is left behind.

In addition to the free and uncertain nature of play attributed by Caillois, he also describes play as "a separate occupation, carefully isolated from the rest of life, and generally is engaged in with precise limits of time and place."[vi] While a dislocation from time and space is often the result in many forms of unstructured play, a clear *separation* of playful activities from the practices of everyday life will likely result in numerous missed opportunities to capitalize on the meaningful lessons that emerge from *habits of mind* that are engaged during active and exploratory amusement. This assumed "unproductive" quality of play reinforces another characteristic articulated by Caillois' when he asserts that neither "goods, nor wealth, nor new elements of any kind" are created through play. And, "except for the exchange of property among players," he adds, play most often ends "in a situation identical to that prevailing at the beginning."[vii] However, in assuming that playful activities are lacking in the creation of any "new outcomes of any kind," those participating in the planning, and creation of the play are, by extension, also assumed to be foregoing any beneficial or productive lessons that may otherwise be acquired during the act of play.

While it is clear that Caillois (and others) fully recognizes the numerous and important social functions provided by play and play-like activities, his qualifying characterizations of play as largely *free*-form, *separated*, *uncertain* and *unproductive*, hinders serious consideration of play as offering meaningful opportunities for intentional learning.   And, although it is most-likely unintended on the part of Caillois, play by such definitions, has been relegated to the ranks of the useless, the inappropriate, and the unacceptable when serious learning and important work is of the order.

ACT TWO: *Design as a Model for Reflection-in-Action*

It is widely known that many child-centered models of education, and research in developmental psychology, promote a child's construction of knowledge through their physical and bodily engagement with their environment and their ability to transform that environment through individual and collaborative actions. For example, Jean Piaget, John Dewey, Donald Schön, Maria Montessori, Lev Vygotsky and Howard Gardner[viii] (among others) - along with distinct early-education programs such as the Reggio-Emilia Approach, the Montessori Method and High/Scope - share an investment in child-centered, interactive and reflective curricula in supporting learning and development through embodied experiences and collaborative practices.

Often affiliated as *progressive* or *constructivist*, the abovementioned philosophers, educators and developmental psychologists share an emphasis on systems or methods of education that foster a child's capacity to *construct* their own knowledge through direct experiences and actions, out of which they develop a deeper understanding of their world and a higher level of adaptability to negotiate challenges there within. For example, in his book *The Experience and Education*, John Dewey views teaching and learning as "a continuous reconstruction of experience"[ix] in which experiences are educative, contribute to growth, produce sensitivity to responsiveness, connect with the past and future, and provide challenges that are accessible and yet evoke reflection. For Dewey, this student-centered, active approach differs drastically from an approach in which learning is expected to occur within a *banking model* of education, wherein content is organized and delivered, in one direction, at the sole discretion of a single teacher.

Increasingly, however, many school districts are placing a greater emphasis on outcome-based models of teaching that are designed to ensure an preparation of

students *adequate* for standardized test-taking capacities through predictive modes of content distribution. This focus on standardized outcomes, however, rarely acknowledges the fact that developmental trajectories of individual students are not nearly as uniform or predictable as testing models would assume to determine. Furthermore, a singular emphasis on outcome-based teaching often requires teachers to funnel learning through disconnected curricular silos that compartmentalize content and create barriers to integrated learning models that expand a student's multiple intelligences.[x]

As a foil, design thinking and design-based curricula offer active and reflective learning experiences that draw connections between seemingly disparate subject areas and content streams. By working through the indeterminacies of design processes, students are encouraged to continually *reflect* upon their actions in real time thus developing *problem-setting* skills that help direct and synthesize their efforts through both individual and cooperative learning experiences.

It is in the writings of Donald Schön that presents one of the strongest advocacy of design as *reflection-in-action* and the education of reflective practitioners. Schön, in the pragmatist traditions of John Dewey, endorses, for example, the architecture design studio for exemplifying "the predicaments inherent in any reflective practicum,"[xi] and champions the processes of learning-by-doing characteristic of most design curricula. For Schön, most other professional curricula simply implement rules and procedures deemed *satisfactory* for predictable outcomes within which the student (or practitioner, for that matter) is left to simply execute a predetermined set of solutions. In contrast, Schön advocates the active, open-ended processes of design wherein, "designers juggle variables, reconcile conflicting values, and maneuver around constraints – a process in which, although some design products may be superior to others, there are no unique right answers."[xii]

Though there has been much research and recent attention advocating design thinking, active-learning and project-based curricula in the future of education[xiii], currently, there remain few mechanisms in place for sustained exchanges between the respective disciplines of education and design (not to mention public policy) outside of periodic and isolated undertakings. With this in mind, a major objective for the work developed during the program presented below has entailed the establishment of a common language necessary to facilitate communication between researchers and practitioners of both education and design. These exchanges between educators, practitioners and students in design and education, have provided an infrastructure for developing, organizing and disseminating a set of skills, objectives and best practices necessary for the integration of design and education beyond the particularities of this program.

ACT THREE: *Design as a Catalyst for Integrated Learning*

Scene 01: The situation
In preparation for the partnership with Highlands Elementary School, the faculty and students in the graduate seminar at the University of Minnesota participated in various workshops, presentations and field trips with a series of educators and consultants in and around the Twin Cities of Minneapolis and St. Paul. Roger Johnson, professor in the Department of Curriculum and Instruction and co-Director of the Cooperative Learning Center at the University of Minnesota led a workshop in the seminar highlighting basic goals, techniques and assessments used for teaching a model of cooperative learning. Barbara Cox, Arts Education Partnership Coordinator at the Perpich Center for Arts Education instructed the seminar on the use of *reflective protocols* for engaging students in learning through arts education. Jim Roe, Learning Environments Consultant, led a tour of interactive exhibits in the Children's Museum of Minnesota, at which he once worked as Exhibitions Coordinator. Barbara Murphy,

Director of the Shirley G. Moore Laboratory School and Co-Coordinator for Early Childhood Education Licensure Program in the University of Minnesota's Institute of Child Development, instructed the students on the key developmental stages of early-childhood education for which their design projects were to be targeted. And, Leonisa Ardizzone, Director of the Salvadori Center in New York City, graciously shared their curricula designed to integrate architecture and engineering into the core subject areas of K-12 education.

The design program, now completed, commenced with a short design project administered to the elementary teachers themselves as a means of exposing them, first hand, to the processes of design and reminding them of the lessons learned when reentering the role of *student*. Following this initial design *charette* with the teachers, the graduate students were coupled with teachers to work collaboratively in crafting several design-based projects to be integrated into their respective curricula over a four-week period, a few examples of which will be chronicled in more detail below. It should also be noted that in response to the positive feedback following the implementation of the above-mentioned design curricula, the administration and staff at Highlands Elementary School agreed to expand upon this collaboration as part of their ongoing professional-development program through an intensive, three-day *Summer Design Camp for Educators* intended to synthesize many of the lessons previously explored through a more comprehensive design project.

In the interest of brevity only three of the eleven projects implemented during the period of collaboration with the elementary school will be detailed in this paper and the ensuing conference presentation. These projects have been chosen due to their differences in approach and method so as to highlight the range of design-based curricula piloted in this initial collaboration. The first, a three-week project with three different kindergarten classes focused their efforts on integrating design projects into their existing curricular charge of teaching the students the subjects of scale, measure, size and numbering systems. The second example comprises a series of projects that provided a set of more self-contained design-based lessons that emphasized cooperative learning skills and collaboration but remained only loosely aligned with respect to any particular curricular charge. The third case will chronicle the most comprehensive and synthetically-integrated project , a three-day Design Camp during which twenty-four elementary teachers and a group of forty elementary students worked hand-in-hand with design professionals and educators in designing and constructing a pavilion for testing, sampling, serving and consuming lemonade.

Scene 02: Measure, Model, Construct (Kindergarten)
Day one of three began the same in each of the three kindergarten rooms with students creating their own measuring devices through the arrangement of 100 objects of their choosing (crayons, pens, scissors, thimbles, etc.) serially arranged in a line. These devices were then used to measure objects in the room and portions of their body, in attempt to link the abstract notion of measure to an embodied notion of the world. Because each of the original measuring units differed, all of the calculated lengths of objects or bodies varied according to their individual measuring units. This internal crisis (built into the project) forced a conversation about the usefulness of standards in communicating measurements between users and offered a convenient segue for introducing standards of measure to the students.

Following this initial shared exercise, each of the three kindergarten class developed an independent series of projects linked only thematically around the lessons of measure and scale. Two of the classes designed scaled stage sets, one for a puppet show and one for a small live theater in their classroom. These initial stage dioramas required the students to work in a *scaled* (miniature) form of representation with the knowledge that these miniatures would be ultimately scaled-up, through measure. Again, the lessons of

measure, dimension, communication and material constraints factored into the decision-making processes for these students who were working in groups and collaborating on their stage designs.

By the end of the fourth week, these two classes had planned, designed, constructed and staged their respective performances. One group used their model stage sets as prototypes in constructing larger puppet stages while the other class scaled up their models in constructing a full-scale theater for their own in-house production.

Scene 03: Iterative Design (plan-do-review… repeat if necessary)
This next case is comprised of a series of stand alone or self-contained projects implemented over a 3 week period in one-hour periods of time. These projects engaged a group of 40 students from a range of grade levels (1st - 5th) placed in mixed groups comprising an array of ages. These projects were generally intended to introduce the design processes and terminology while encourage prototyping, risk-making and an iterative working method. More specifically, these projects were conceived as a way to teach material properties and characteristics, expose the students to basic concepts of physics and structural stability, and teach the students skills of criticism and communication that developed the collective intelligence of the larger group as it innovations emerged over time.

Each of these projects had a specific set of material and performance-based parameters that were givens from the outset. The most comprehensive of these projects asked the students to construct a series of card-towers using index cards, staples and tape without the aid of any previous instruction (learn-through-action). This project was followed by a group review and critique after which students were then immediately given a deck of playing cards with which to build again, relying on the shared knowledge gained from their discussions of their initial work. However, this second tower was to be completed without the use of tape or staples, adding to the degree of difficulty. The reduction of assembly materials forced a set of innovations and leaps of *technological advancements* across the groups in the classroom as students began to test and experiment with folding, cutting and notching their cards for added structural integrity and stability. The students learned quickly that they benefited from the collective successes of the larger group and began to share knowledge and mentor one another through the process of innovation.

The final day of this project, again added a new variable, that of weight. Once completed, the weight-carrying capacity of each structure was tested using a series of balls of increasing size. This process added to an air of excitement and anticipation that resulted in an informal *innovation race* throughout the class as each group attempted to achieve higher standards if craft and construction in their structures to achieve a higher level of performance. This model of cooperative learning comprised a highly-effective structure for achievement in that it combined three types of cooperative effort: competitive effort, individual effort, and cooperative effort.[xiv] Within each of the small groups, incremental innovations occurred through the testing of details and material transformations. These innovations, then, fed into the collective efforts of the larger group demonstrated through the competitive testing of each structure against the weight of the balls. One unintended outcome of the testing phase used to assess the structures' weight-carrying capacities, was the initiative exercised by each group to repeatedly rebuild their towers incorporating the lessons learned by their structure's failings and those of the other group's towers. The students seemed to fully understand that their failures benefited the efforts of the larger collective and carried a value beyond their individual project development.

Scene 04: When life gives you lemons… Design Camp - 2008
Beginning in early June 2008, the six-month collaboration between the College of Design and the Highlands Elementary School in Edina, Minnesota culminated in a three-day Design Camp, in which the elementary teachers and students participated in a unique learning experience that grouped the participants into five design teams led by a design professional, the elementary educators and college students from the University of Minnesota. By assembling the teachers and students within equal company, the teachers assumed the role of student throughout many of the exercises and gained a greater understanding of the processes of design-based teaching and learning from the perspective of a novice.
Through their experiences, the teachers completed the workshop with a clear understanding of key concepts in the design process and some of the skills and the tools necessary for integrating design thinking into their respective curricula. Design activities were ongoing throughout the morning sessions and the second half of each day, after the children departed, comprised a series of curriculum-development sessions, technology-integration workshops, and teacher training modules in order to facilitate the teachers' abilities to document, organize and present the work of their students throughout the school year. Additionally, one of the design teams (a journalism group with children and teachers alike) was charged with documenting the process of the Camp, creating a film to use as a teaching tool and to share with other interested schools and organizations focusing their efforts on innovative design-based teaching practices.

As mentioned above, the three-day challenge of the camp centered on the design of a lemonade pavilion, although the actual choice of lemonade is of minor significance to the overall learning objectives and integrated teaching strategies. Lemonade was simply the delivery system for a host of design-based projects and challenges. The camp was organized around five major design activities with two groups focusing their attention on the design and construction of the pavilion itself: the *Ground* group and the *Sky* group. The *Ground* team was charged with the design of the land portion of the pavilion, for which the major building material comprised twenty-four straw bales. As such, the *Ground* team was responsible for addressing the entry sequence, spaces for serving the lemonade and spaces for gathering. Basic concepts of programming, material assembly, dimensioning, geometry, sequencing and narrative structures were emphasized as a way to integrate language, math and social skills throughout the project. The second pavilion group was responsible for designing the tensile fabric roof structure over the ground-based construction. This group examined the natural phenomena that would affect their canopy structure (wind, sun, rain), and basic concepts of physics, tensile structures and geometry.

A third group was charged with *Lemonade* research and development. This group (the product designers) tested and documented the process of creating new flavors of *lemonade* that were served in the pavilion on the final day. This team was challenged to develop taste tests for which they ran surveys and created matrices of data. Based on their findings of taste preferences the group designed three flavors of lemonade and developed the proper ratios of ingredients. Basic ideas of chemistry, gastronomy, and biology (taste buds) were examined as means to refining the three final flavors. Basic advertising campaigns and branding ideas for each of the flavors were also developed by the team that relied on a range of language skills, basic concepts of sociology and group dynamics, and some marketing.

This lemonade group, was closely aligned with the *Graphics and Branding* group that was be charged with developing the graphic interface and way-finding signage for the lemonade pavilion and the final event on the last day of the workshop. Their graphic approach required the students to develop a set of standard templates which offered opportunities to teach basic concepts of scale, proportion, geometry and color theory.

By working closely with the lemonade group, the graphics team also learned invaluable communication skills, collaborative strategies for creative problem solving and narrative formation in assuming the state of mind of their multiple "customers" who may be enjoying their lemonade.

Scene 05: Looking Forward By Way of a Conclusion
The ultimate goals of this design camp was to model, first-hand, an in real time, the reflective practices of design to both teachers and students in an environment that approximates the kinds of indeterminacies facing designers and design educators in their respective disciplines. Furthermore, design as a catalyst for the integration of otherwise segregated subject matters of education (language, math, science, etc.) was a major underlying goal of the design projects and the curriculum development workshop throughout the week. The 2008 *Summer Design Camp*, with its integrated structure of disciplinary groups, also highlighted the necessity to work collaboratively across varied disciplinary boundaries and established more open-ended, cooperative teaching methods within the core curricula taught by the participating teachers throughout the regular school year. Our goal, as designers and organizers, was to demonstrate the effectiveness of design-based curricula in synthesizing a range of disciplinary lessons and instrumentalizing a set of creative engagements to prepare children for the types of future challenges and opportunities that we cannot fully conceive or predict.

Building on the successes Following the success of these efforts, the author was granted funding from the National Endowment for the Arts (NEA) to continue this work through the Summer of 2010 with a new round of summer Design projects. The *Summer Design Labs*, a partnership with Highlands Elementary Schools in Edina and the Jane Addams School for Democracy in St. Paul, will bring together professional designers and artists with elementary-grade administrators, teachers and students, along with University faculty, pre-service student teachers and community youth development leaders, all working to develop design-thinking and creative problem-solving skills through collaborative, project-based learning. Workshops will include design projects involving both students and teachers along with professional development workshops for the participating teachers,
volunteer community leaders university faculty and pre-service student teachers. Intended to be collaborative and challenge-based learning, the planning and programming for the *Design Labs* will be guided by many of the objectives stated in the University of Minnesota's College Readiness Consortium's Ramp Up to Readiness Goals (in particular Academic and Personal-Social Readiness), the current and future pedagogical goals
and curricular objectives provided by the participating teachers, and appropriate state standards and learning objectives for the State of Minnesota. Furthermore, the Summer Design Labs will be assessed by an independent evaluation group that will offer summative and formative assessment of the program as a means to more rigorously assess the impact of the program on teacher training, curriculum development, student's collaborative problem-solving skills and the use of design as a catalyst for integrated learning.

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iv Caillois, Roger. 2001. pp. 9-10.

v Caillois, Roger. 2001. pg. 7.

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viii see: Piaget, Jean. 1950. *The Psychology of Intelligence*. London and New York: Routledge. (first edition); Dewey, John. 1997. *Experience & Education*. New York: Touchstone. (orig. 1938); Schön, Donald. 1983. *The Reflective Practitioner*. London: Basic Books; Schön, Donald. 1987. *Educating the Reflective Practitioner*, San Francisco: Jossey-Bass; Montessori, Maria. 1967; Vygotsky, Lev. 1966; Gardner, Howard. 1993. *Multiple Intelligences: New Horizons*. New York: Basic Books.

ix Dewey, 1997, p. 87.

x see: Gardner, 1993.

xi Schön, 1987, p. 28.

xii Schön, 1987, p. 42.

xiii see in particular: Davis, M., Hawley P., McMullan B., Spilka G. 1997. *Design as a Catalyst for Learning*, Alexandria, VA: ASCD; and Robinson, Ken. 2001. *Out of our Minds: Learning to be Creative*, West Sussex: Capstone.; Pink, Daniel. 2005.
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American Sex: Selling Social Awareness through an Experience

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American Sex is a group project that was developed using the marketing tactics discussed in Robert B. Cialdini's book, Influence: The Psychology of Persuasion. Using these six tactics, a group of seven graduate students, who dubbed themselves the Wide-Eyed Project, sought to bring awareness through design to child sex trafficking in America. This was achieved by simply adding an element of surprise to a process starting from conception of a package design and ending with a functioning website.

Michael Cialdini's book *Influence: The Psychology of Persuasion* discusses how advertising tactics known as weapons of influence are used to control consumer behavior. Typically these weapons of influence are used to encourage consumer purchase decisions. Our challenge for this project is to take one or more of these advertising tactics and subvert the message into a meaningful visual communication device that will have the reverse effect on the consumer.

The weapons of influence discussed in Cialdini's book include reciprocation, commitment and consistency, social proof, liking, authority, and scarcity. The first tactic covered is reciprocation, the general rule states: "we should try to repay, in kind what someone has provided us."[1] Next he discusses commitment and consistency, which states that "our obsessive desire as humans to be or appear to be consistent with what we have already done".[2] The third tactic is social proof, which simply says that people do act a certain way because they see others doing the same thing. Next Cialdini discusses liking, which is a tactic employed when the consumer makes a purchase only because they like the salesperson. Authority similarly is when the consumer makes a purchase because they are complying with someone in an authoritative position whom they respect or value their opinion. Lastly, Cialdini talks about scarcity. When there is perceived scarcity it generates demand for a product using slogans such as "get them while they're hot" or "for a limited time only". These weapons of influence are used in everyday advertising to trigger an automatic response from consumers that Cialdini refers to as the "click-whirr response."

Can these tactics be harmful to the consumer you might ask? The answer to the question is yes and no, as supported by Michael Cialdini in his book *Influence: The Psychology of Persuasion*. There are different psychological, sociological, and economical outcomes where these weapons of influence are

concerned. Some of the outcomes can be positive, while others may have negative ramifications.

For example "during the Korean War an American soldier would be asked to write out a question and then follow it with a pro-communist response, if he refused to write it on his own then he was forced to copy it from a notebook, which must have seemed like a harmless enough concession."[3] According to Cialdini "these harmless concessions or other trifling commitments can lead to extraordinary further behavior."[4] This seemingly harmless form of the commitment and consistency tactic resulted in the psychological demise of American soldiers during the Korean War. Their war-related beliefs shifted in favor of their enemies and against their own forces. So yes weapons of influence can be harmful to the consumer as well as incur some incredibly heavy psychological implications.

Sociological implications are also present with these weapons of influence. Sociologist David Phillips from the University of San Diego has traced something called the Werther Effect to modern day. His research demonstrates that highly publicized stories of suicide or death often result in an immense increase in the suicide and death rates in that area. "In a morbid illustration of the principle of social proof, these people describe how they should act on the basis of how some other troubled person has acted."[5] This is another negative ramification of these advertising tactics influence. Because the act of suicide draws attention to people, others think they can reap more attention from taking the same action.

Economical effects are an additional result of these tactics. Cialdini discusses an illustration of how reciprocal obligations can reach long and powerfully into the future. He shares the story of $5,000 of relief aid between Mexico and the Ethiopia. "In 1985 Ethiopia could justly lay claim to the greatest suffering and privation in the world. Its economy was in ruin. Its food supply had been ravaged by years of drought and eternal war and its inhabitants dying by the thousands from disease and starvation."[6] However, to the surprise of many the aid went in the opposite direction. Ethiopia sent the money to Mexico to help victims of a recent earthquake. Ethiopia did so to reciprocate Mexican efforts in 1935, when Mexico gave money to Ethiopia to combat the invasion of Italy. I feel the point Cialdini was attempting to make was that these tactics can also be used as positive influencers in various.

You may also ask yourself: Is there any benefit to consumer manipulation through advertising? Yes! In the case of the Wide-eyed Project these advertising manipulation tactics have been successfully used to convey a message that visually communicates with our consumer. By using this subvert method of communication it ultimately results in a positive outcome for consumers of our product.

After reading Michael Cialdini's book *Influence: The Psychology of Persuasion* this project began with our class sitting around a table discussing different issues that could potentially be improved through visual communication. We discussed concepts where using subvert advertising tactics could have the opposite effect on a consumer. Each member of the group selected a subject area of their choice and developed questions surrounding their topic that could possibly be improved through design. We asked questions such as: Can trends and perceptions influence design? Can we bring awareness to an issue through visual communication? Can we change consumer perception of brand loyalty with design? These questions and ideas began to advance over the next few weeks of class as we brainstormed thoughts out loud. Finally after seven weeks of class we had reached a new height. We had essentially reinvented the project and the class in its entirety. As a group we decided to tackle this process as a team, a challenge that grew from a graduate class project to a world cause.

The process started with further topic exploration. This resulted in selecting the subject of exploitation of children. It was then narrowed down to the trafficking of children for sex in the United States of America. We hypothesized that social proof would be the main weapon of influence used in this project. It can be used to destabilize advertising messages that the exploitation of children is immoral based on Cialdini's theory that the major strength is also the major weakness. This tactic provides a shortcut for determining how consumers behave, but at the same time makes one who uses this shortcut more susceptible. We propose that by depicting exigent images of children it will evoke thoughts of compassion and help in the consumer that will ultimately result in the reverse effect on the consumer. This end result is becoming an advocate for helping our cause to end the exploitation of children for sex in the United States.

Welcome to the Wide-eyed Project. A diverse group of seven graphic design graduate students who aspire to better our world through visual communication. While there are many issues

troubling our culture, we chose to focus our attention on human trafficking, which is the fastest growing criminal industry in the world. It is estimated that 1.8 million children are trafficked for sex in nearly every country, including the United States. Armed with our knowledge of advertising and communication techniques along with an activist spirit, we seek to bring awareness to the public about putting a stop to exploitation of children and young adults. The purpose of The Wide-eyed Project as described in our mission is dedication to aggressively fighting the trafficking of children for sex in the United States. Our goal is to bring awareness to the anti-trafficking movement through subversive marketing and advertising tactics used to educate the otherwise uninformed public.

The project process was initiated by developing a concept for our product. It started by creating a brand under the Wide-eyed Project known as American Sex. Beneath the American Sex brand we produced a product line called the Fawn Collection. This collection consists of the five product varieties: Matthew, Brittany, Christopher, Jessica, and Ashley. Each child has their own identity and personality in order to make the experience more real for the consumer. Nathan Shedroff said, "all experiences are not created equally, all must compete for the attention of the audience."[7] Written communications are used to describe each individual and appeal to the consumer. After crafting the products we then designed a captivating package design that is carried through the brand to our other print and web collateral pieces.

Brand and logo development was followed immediately by a timeline of what additional marketing collateral would be needed to promote The Fawn Collection and what tactic coincided with that particular piece. We determined that the most urgent piece was the web component, which consists of the micro site and the educational website. It was then decided we would design the American Sex branded print pieces including posters, handbill flyers, newspaper advertisements, and direct mail pieces to support the Fawn Collection product line. Each print piece has a weapon of influence that corresponds with it. For example a professor handing out postcards to their class and encouraging them to visit our website is the authority tactic, while spreading the Wide-eyed Project name by word of mouth and on social networking sites to our friends is the liking tactic. The posters and newspaper advertisements will utilize the scarcity tactic through written content such as "limited time only" to persuade consumers to make a purchase.

Our website wideeyedproject.com is set-up with a micro site splash page that prompts the consumer to purchase one of the five products in our fawn collection. On this index page we ask the consumer how they heard about us. This is where they are required to pick from facebook, internet, postcard, poster, professor, newspaper ad, word of mouth, or other. These results are being tracked via Google Analytics so we can determine which source made the greatest impact. We use the scarcity tactic here by using phrases such as "buy one get one free" to push a purchase by the consumer. Once the consumer clicks on the "Still Curios?" button it re-directs them to our educational site where they are greeted with the message **"STOP. DID YOU KNOW THE SEX TRADE IN AMERICA WAS THAT EASY?"** The educational site has additional information about who we are, our mission, facts and statistics about the exploitation of children in the sex industry, similar causes and interest groups, sites where donations can be made to further the cause, social networking sites, other media we have available for download, our blog, and Wide-eyed Project merchandise. An objective we are striving to

achieve with the educational site is based on an excerpt called *Educating the Audience* from the book *Design Studies: Theory and Research in Graphic Design*, which states "a communication goal is to educate the audience or to persuade them to accept and interpret the information."[8]

In terms of communication, metaphors are one of the most frequently used tools when communicating every day. As cited in *Experience Design* metaphors are one way to build a cognitive model and they can be very powerful in orienting people to help them understand an experience."[9] Verbal, written, and visual metaphors are present in nearly everything we do and associate with on a daily basis. Edgar and Sedgwick state that "Metaphors have a privileged, specific role in the application of words to the world, and particularly in understanding by comparison".[10] The Wide-eyed Project is no different. Probably the most dominant metaphor in this project is the use of a packaged tin representing a child to be sold into the sex trade. This is important because "Metaphors are not required and can be crutches for poor ideas and design. Used well, however they can be illuminating for users and quickly orient them to the functions and interactions of an experience."[11] The metaphor also extends in that the child is not representative of sex in our everyday lives, but for the purpose of this project the children represent a product. The product represented is sex and demonstrates just how easy it is to exploit children for this function in our country.

We established early on that the audience for this marketing campaign would be college students. This population was chosen based on their inherent curiosity that others may not have. In addition, we have plentiful access to communication with the overall population. We believe that the average college student is attracted to bold sexy packaging, along with sex in

general. By aggressively putting the word "SEX" out there, in conjunction with our package design we assume they will be interested. We believe that we can attract students to purchase our product, a child sold for sex, based on the package design without them actually knowing exactly what they are buying up front. By using Cialdini's tactics such as scarcity in advertisements and on our posters and flyers we can attract buyers based on written content and design alone. Before they ever realize what they are actually purchasing.

We know that our audience will develop a cognitive model or a certain understanding of the experience we are providing. As stated by Nathan Shedroff in his book *Experience Design*, "new cognitive models can revolutionize an audience's understanding of data, information, or an experience by helping them understand and reorganize things they previously understood (or perhaps, couldn't understand), in a way that illuminates the topic or experience."[12] We want our audience to experience the simplicity of purchasing a child and then hopefully take it upon themselves to take a stand against this appalling crime.

According to Herre van Oostendorp author of *Cognition in a Digital World*, "massive changes are taking place in society surrounding the delivery of information to individuals and the way they process this information."[13] In addition to our print and web marketing collateral, we decided that given our college audience, social media was a necessity too. We started by creating a blog that links off of our educational website. The blog is a journal of our journey together with this project. Facebook is, of course, our biggest social media push, housing the American Sex group page consisting of 1,027 members. Eventually the Wide-eyed Project fan page will also reside on facebook. We also called upon the followers of twitter, digg, and reddit to advertise the American Sex brand and the Wide-eyed Project.

The artifact took shape in the form of a boldly packaged tin. We chose to develop sub-product lines under the American Sex brand because it is our hope that in the future we can expand the brand to encompass other areas of child trafficking such as the labor and military partitions. We determined that if we create a visually stimulating package that does not allude to what its contents truly is we can successfully sell the product based on the package design alone. After all, according to Thomas Hine author of *The Total Package,* "for manufacturers packaging is the crucial final payoff to a marketing campaign."[14]

The next step in the process was organizing two different social tests to help measure the success of the Wide-eyed Project assumptions and test our hypothesis. The first test used traditional advertising methods and the second was based purely on the weapons of influence tactic social proof, which we hypothesized would have the largest impact of the tactics. The tests took place at noon on Monday and Tuesday respectively, during the high traffic time at the campus rotunda. We set up the tests at 11:30 a.m. and took our places for a noon implementation. On Monday we handed out printed handbill flyers and verbally advertised American Sex by word of mouth. Tuesday we relied solely on crowds and pandemonium surrounding the table by staged actors to trigger that click-whirr response in passing individuals. This was set up to prove our theory that social proof does in fact work. Both events were documented with digital media, as well as written documentation of consumer behaviors by group members.

Finally after weeks of organizing, documenting, and collecting data we have reached the compilation stage. Google analytics has tracked all of our web statistics to date, while we as individuals have recorded written, verbal, and digital documentation from our social tests. We have assembled all data and documentation so we can create information graphics to visually communicate our findings and success in a gallery setting. In addition, the Wide-eyed project will be issuing a press release to generate hype in the surrounding communities about our upcoming exhibition in the Averitt Center for the Arts, Legends Gallery.

Based on the data collected thus far, the Wide-eyed Project is making a successful impact on our society and the surrounding college community. The majority of the feedback we have received from our consumers has been positive and encouraging. The big question looming over our heads is: what will be the reaction of the older local population who were not targeted in the initial testing? The traditional residents of Statesboro Georgia may come out for our show that will be hanging in The Averitt Center for the Arts during the month of January. It will be interesting to see the outcome of that event. What reactions will this population have? Will they understand the goal we're trying to accomplish after seeing our show? Overall Wide-eyed Project is in fact bringing awareness to the trafficking of young children for sex and may actually be contributing to a movement of change in our country. A result we were hoping to attain through our visual communication devices and that I believe we were able to achieve in the end.

As of December 6, 2009, 2,784 purchases were made via wideeyedproject.com. Google Analytics shows that 42.14% came from direct traffic, while 57.86% came from referring sites. We have had visitors from 20 different countries including: United States, Canada, United Kingdom, South Korea, New Zealand, Australia, Turkey, Mexico, Germany, Switzerland, Spain, India, France, Slovenia, Afghanistan, China, Malaysia, and Thailand. There is no real means to determine where these direct hits came from. Our initial assumption is that they are from internet searches populated on search engine sites such as Google or Yahoo. However, our results show only 18 customers heard about us via an internet search. The majority of the visits to our site generated from facebook. We originally assumed that facebook would be the driving force behind the American Sex brand and its Fawn Collection line. This assumption was made largely in part because social networking is completely immersed in our collegiate culture today.

The facebook component consists of an American Sex group and eventually a Wide-eyed Project fan page, once the initial promotion surge has passed. The American Sex group has over 1,000 members that stretch far beyond the confines of Statesboro, Georgia. This number was more than we could have imagined accruing in the two-month time span since the group was created. The purpose of the facebook page is to inspire curiosity about what American Sex is and encourage them to visit the Wide-eyed Project website for more information. This means of communicating has been thoroughly effective based on the data

we have collected thus far. Some of the comments we received from our friendly facebook followers include:

"This... is brilliant. Awesome job.", "You've officially blown my mind. Great job.", "You guys should come to U of Arizona some time. We would love you have you... you guys are doing some great things!", "Wow this is great. I have heard alot about this stuff from specials on msnbc but this is a better way to hit everyone.", "Wait, so you guys aren't really selling these kids? What a tease.... but for real, this is a great cause. You really put some time into this and it shows. Keep up the good work.", "Great group, spread awareness!", "Awesome, brilliant, fresh, innovational. Congratulations. Seriously, some of the best marketing/advertising I have seen, hands down.", "Wow. I saw this add in my university newspaper. I was so appalled and went immediately to look it up online to see what it was about so that I could send what was certain to be a VERY nasty letter to the editors of my newspaper. The front page, of course, disgusted me greatly! I was furious! But, I couldn't figure... out any more info, so I pressed "buy" just to see if I could get more info... WOW! THANK YOU! This is a huge issue to me, which I've been working on nonstop. There are more slaves in the world now than there have ever been, even during the height of the Atlantic slave trade; yet, this gets zero attention whatsoever. Thank you for shedding some light! You guys are truly fantastic.", "Fantastically cool. Such a great cause.", "Way to make a statement and bring the truth home. Effective. All I want to do now is help!", "Very excellent packaging work on these."[15]

These constructive comments from our group supporters lead me to believe that the positive visual impact of Wide-eyed Project is spreading across the virtual world.

Based on analytics, our print media was not nearly as effective as the viral marketing devices we employed. Sites such as facebook.com, reddit.com, twitter.com and digg.com have yielded over 2,500 hits to our site, while our print pieces such as newspaper ads, posters, and postcards yielded just over 50 hits as of December 6, 2009. Social networking is a must where advertising is concerned today. Most people use these sites on a habitual basis. They may never pick up a flyer, look at a newspaper advertisement, or stop to read the poster on some random message board. I feel that print collateral is still an integral component of marketing campaigns, yet in this case we

are trying to reach an entire country to convey a specific meaningful message. Viral marketing was far more impactful in the long run.

We were able to draw conclusions based on the results and documentation from our social tests as well. Social test number one, the advertising test resulted in quite a bit more success than social test number two, which used staged student actors to implement the social proof tactic. By handing out printed promotional items, coupled with small crowds gathered around a table we were able to successfully draw in 134 individuals to the American Sex display, while test two only brought 71 people to the table. A common assumption about college students is they will take anything if it is free; however that was not the case with the Fawn Collection tins. Some individuals would approach the table, but were hesitant to take a tin for reasons unknown to us. Other students were eager to take a tin. A frequent reaction was: what is this? Most were disappointed that the tins only contained a small slip of paper that said "still curious? Check out our website wideeyedproject.com". Some students realized what it was after reading the tin descriptions and their reactions varied. Some yelled in disgust and jumped away from the table, while others were more inquisitive and continued to ask questions about what we were doing and why. One thing we were able to track via analytics was how many people visited the website on the days we executed these social tests. The numbers showed minimal change, which we can presume means the slips of paper inside the tins weren't as effective as we had hoped they would be. We were able to prove that social proof is a viable tactic. However, when it was combined with verbal and print

advertising it yielded better results than when we relied exclusively on social proof.

You may wonder why a meaningful message is important. "People find meaning in experiences and things based on a wide variety of personal values. That people find meaning in thing, is perhaps, the only certain that is relied upon."[16] According to Nathan Shedroff "it is important to design experiences so that audiences or participants can find meaning in them by making connections to their own lives and values—that is, if we want these experiences to have lasting impacts".[17] Our consumer can make meaning connections with our product. The lone shiny tin, a visually stimulating package that actually represents a helpless child who has been forced into a horrifying life they shouldn't be subjected to. When our consumers realize what has transpired after clicking the "still curious?" button on wideeyedproject.com they can automatically make that meaningful connection we foresee by participating in the experience we are offering. According to the book *Experience Design*, "participation makes experience more meaningful because it taps into our desires to be creative and communicate."[18]

Is American Sex considered Fine Art? Webster's Dictionary defines Fine Art as visual art considered to have been created primarily for aesthetic purposes and judged for its beauty and meaningfulness, specifically painting, sculpture, drawing, watercolor, graphics and architecture. This particular project involved a lot of conceptualization and creativity. According to the International Institute for Information Design, "information design involves: defining, planning, and shaping the contents of a message and the environment in which it is presented to help users achieve a particular objective".[19] In the case of the Wide-eyed Project experience we were able to inform the uninformed consumer about an issue that is plaguing our country strictly through visual communication devices. We were able to create a design experience for our consumer.

The Wide-eyed project is far from reaching its full potential, but for the purpose of the Design and Culture class it is complete. There is a great deal of potential for the Wide-eyed Project. The opportunities are endless; grant funding, gallery exhibitions, design competitions, future conference presentations, and the chance to continue spreading awareness about the exploitation of children on so many different platforms. In my mind it would be extremely unfortunate to stop this undertaking now. In terms of achieving the goals set for the assignment, I feel they were met. I also think new goals

will continue to develop and grow as time passes. I do not think any of us anticipated the success of Wide-eyed Project and its ability to move forward in the future.

The majority of our country, including the Wide-eyed Project audience, has no idea this is such a pressing issue in our society. They all had a minimal amount of consciousness, but many, even those of us who started the Wide-eyed Project group were left asking how something like this happens in the United States. But our audience/consumers now know just how imperative it is to support this cause and bring awareness to the issues surround child exploitation. No one can turn a blind eye to this issue in hope that one day it will disappear. The Wide-eyed Project followers are now able to make that awareness connection in their minds due to the visual communication experience we created for them.

In conclusion the Wide-eyed Project is a thriving idea. Our group successfully subverted advertising tactics traditionally employed to promote purchasing decisions into a meaningful communication device that was capable of having the opposite effect on our consumer. We took a controversial topic, the trafficking of children for sex in the United States and spun it in an innovative way. At the end of the day it helps our audience to understand our cause through visual communication and design. It is our hope that the Wide-eyed Project will flourish in the future and continue to raise awareness regarding the exploitation of children in our. As a designer I feel proud to be a part of such an unbelievably creative project that will have such a positive impact on our community, country, and world!

Wide Eyed Project: American Sex Notes

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The diagrams cookbook: Matching Information with Perception

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Abstract

In the past, decision makers faced a major problem– the information they needed did not exist. Today, people face the opposite problem– they are drowning in a sea of information, overwhelmed by complex data sets and thousands of individual statistics. Design can make a huge difference, allowing us to find facts, make comparisons, spot trends, and draw inferences. Smarter design can lead to smarter decisions, but only if our students graduate knowing the principles of information design.

This presentation introduces *The diagrams cookbook*, an online tool for teaching visual hierarchy, based on principles codified by Jacques Bertin. Bertin, a French cartographer, introduced *Semiologie graphique* in 1967. (An English translation, *Semiology of graphics,* was published in 1983.)*

Bertin's book is the first and perhaps most comprehensive attempt to provide a theory underlying information visualization. The theory categorizes data in a way that correlates to 'visual variables'. This correlation is an extension of *Gestalt* principles of perception, and a sophisticated way of modeling visual hierarchy. Since Bertin presented his theory, cognitive science has validated major parts of it. While Bertin's theory focuses on diagrams, it also applies to typography and user interface design.

Bertin's writing is very dense (at least in translation), and undergraduate design students can't decipher it. *The diagrams cookbook* is an interactive, online teaching tool that visually explains basics of Bertin's theory. It defines multidimensional data sets and explains how to categorize them. Then it catalogs visual variables corresponding to data categories and provides examples showing the principles in practice.

As a result, student can devise visual hierarchies that an audience finds much easier to understand. Perceptually, the coding is 'in the world' rather than 'in the head', freeing readers to concentrate on subject matter rather than the language of design.

* Madison: University of Wisconsin press. Translation: Berg, William J.

Imitation, and its Legitimate Usage in Graphic Design Education

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When I was in junior high school in China, I went to a long-term art foundation training class to improve my drawing and painting skills hoping one day I could get into the Fine Arts Academy to pursue my dream in art. I must mention that the acceptance rate in art and design colleges during the 90s was very selective and competition often started in the art training classes a few years before college application.   In a painting class, I had a friend who did not have as much painting experience as I did. His realistic paintings were so awkward that I never put him on my competitor's list. Surprisingly one day, his painting suddenly became remarkably better than before and sometimes even began to overshadow my own work. As the learning curve of realistic painting is considerably long and, as I always believed, that constant practice is the only way to success, such quick progress in this friend's work was a mystery to me. When I eventually found out his trick, I was shocked. He simply imitated some published, well-painted model works in every detail and used this imitation experience to guide him to reach a good result in other practices. That sounded like a shortcut, as I never thought imitating other artist's works could help one's talent grow so much. It is almost as if a complicated disease could be dramatically cured by a simple medicine. Later on, we both got into the fine art academy. And since then, I have never thought about imitation as a learning method again.

When I began to teach graphic design at Central Connecticut State University many years after, a very interesting phenomenon came to my attention. Every year, there is always a good number of students who choose graphic design as their major and have a rather thin visual creative background or none at all. On another hand, the initial learning curve of graphic design is also long since it is not only a new experience that challenges students about their inveterate and inherent habits of thinking and seeing, but also a process that requires the cooperation among sight, thought and creation, which involves tremendous researching, sketching, and practicing using computer software and craftsmanship. As a result, many design students still could not produce any solid design work even when their third school year approaches. Willingly or unwillingly, few students even have to drop out of the design program and change into other majors. As design students are held accountable for the quality of portfolio, this situation will eventually put these students in a very negative position in the job market and in their career investment.

According to the survey from the American Institute of Graphic Arts (AIGA), which is the largest design organization in the United States, "as many as 50 percent of their own B.A. and B.F.A. graduates or certificate holders actually quit design within a year after graduation." One of the professors recently from the UCDA (University and College Designers Association) Design Summit believes the number is even getting bigger.

Keeping such situation in mind, I suddenly recalled the story of my friend imitating quality paintings. It came to my attention that maybe imitation could be applied to the design learning experience, which would help design students to grow faster. But, I was not sure. It was just a thought. Then, one day, an article published in *The English Journal* caught my attention. The article is entitled "*The Art of Imitation.*" It is about how a high school English teacher, J. Scott Shields, also the author, cultivates students' original writing by using imitation based instruction. Through this imitative approach, students learn verse-narratives by mimicking masterpieces in the literature field. As it is commonly known, imitation has been explored not only in literature but also in many other fields such as science, industry and even politics and sociology.

However, in graphic design education, the great value of imitation seems not to have been well noted as yet. Maybe because design is too sensitive to copyright infringements or maybe it is considered against innovation and creativity. Or maybe it decreases the value of human genius? But no matter what, the possibility of the usefulness of imitation in graphic design study should not be ignored, especially when it facilitates design learning and makes students grow in a timely fashion during the most important stage of graphic design -- the foundation period.

What is imitation and how it has been applied in related areas?

Initiation is a complicated and broad topic. There are many imitation theories providing research in multiple perspectives such as "identification, social facilitation, modeling, observational learning, matching behavior, and choice-marching dispositions" (Yando, Seitz, and Zigler, 4). Each theory focuses on a different perspective and the definition of imitation may vary. According to G.E. Speidel and K.E. Nelson, imitation can be viewed as, "consisting of two components: (1) the observation of the modeled behavior and (2) Its reproduction" (23). Another definition is "the motoric or verbal performance of specific acts or sounds that are like those were previously performed by a model" (Yando, Seitz, and Zigler, 4). Even though the first definition

focuses on the language-learning process and the second one targets the imitation in human cognitive development, both definitions seem clear that models are needed for the purpose of imitation. And study based on imitating models can be seen in broad areas. As an example, the shark-skin racing suit that was used in the most recent Summer Olympics was an imitation of natural adaption of cross-biological conditions. Using the shark's skin as a model, swimming suit manufacturers created competition suits that broke records. By imitating Xerox's business format, Canon became a major corporate entity and achieved remarkable success in the electronics market marketplace. By mimicking Europe's industrialization of 19th century, Japan became a major manufacturing power with limited resources in early 20th century.

Using masterpieces as models, students of English literature and the fine arts can succeed when employing imitation. For example, in the study of English literature, Scott Shields, finds that the imitative learning technique is not new but that "ancient Romans taught writing a seven–step process of imitation, believing that this method provides students with the tools necessary to develop their independent compositional style" (Shields, 56). In his own classes, Scott allowed students to mimic the writing style or format of Dante's I*nferno,* a part of the fourteenth-century epic poem by the poet Dante Alighieri. As a result, students made noticeable progress and become very productive in narrative writings. For arguing the universality of imitation in the field of literature, Scott himself stated that "many successful writers will freely admit that much of their early work was characterized by an attempt to mimic other writers who they admired, and it took this period of imitation for them to develop the skills necessary for them to find their literary voice" (Shields, 60).

Interestingly, in an ancient Chinese art theory known as the "Six Methods", imitation was also noted as one of the essential ways to improve painting skills. The theory was edited by Xie-He (479-502 AC), a well-known ancient Chinese artist. In the "Six Methods", Xie-He believes that "imitation" is a method to study ink paintings and that artists should be familiar with it as a method of learning basic painting techniques. This method has been well preserved in Chinese painting history and has passed down in the traditional painting field. Many Chinese traditional painters after him continued to imitate masterpieces as mandatory foundation training to improve their own art skills and acquire profound insight. Mogao Grottoes, the historical remains of a temple located in the west of China, retains many ancient mural paintings on its walls. Many Chinese traditional artists and college art students visit the Grottoes each year, using traditional art tools, duplicating these masterpieces as a way of seeking artistic enlightenment.

Imitation in graphic function training/Methodology

In graphic design foundational studies, imitation can work similarly to the way it is used in English writing and fine arts in terms of learning from model works. Taking logo design practice as an example, it is a good format that trains students who are learning design principles. The following tips briefly demonstrate the suggested application of imitation in learning design principles through logo format:

1. **Choose design models.**

    First, the instructor should choose a good amount of well-designed logos (approximately 50 -100 logos) as models. One must make sure that the models present different formal varieties such as letter initials, crest, typography, illustration, etc. These logo models need to be printed in a decent size to allow details of each logo to be traceable with pencil or fine point pen. Color is not a concern, as it is relatively secondary to shapes.

2. **Divide selected logo models to two sections: comprehensive imitation section and intensive imitation section.**

    Comprehensive logo models will cultivate students to acquire the sensitivity of different logo types or formats and understand how information is embedded in different types of logos (crest, initial letters, stack, typography and illustration-driven logos). By preparing 2 or 3 logos in one type will allow students to have enough imitative work to follow. Otherwise, student's works will tend to reproduce "the same look".

    • Trace logo with pen or pencil: prepare some tracing paper and pencils. Lay a piece of tracing paper on top of logo for intensive imitation purposes. Pencil or pen should be sharp enough to catch the details of logo. When tracing the logo, students need to make sure the tracing is as precise as possible. Then fill the positive space with ink or pencil. (For an enhanced practice, trace the logo one more time and fill the negative space with ink).

    • After the logo is traced, then scan the tracing paper with the traced logo into a computer (most often using "Illustrator") to have the students use the pen tool to duplicate it again. On this step, absolute accuracy should be also noticed. For the typography used in the logo, students should use the type tool to imitate rather than use the pen tool to trace it again.

Intensive imitation is the most critical section here. This practice will drive students to observe and feel the microscopic details of logo design such as; curves, spacing, and closure. This leads to a high-end sophistication of logo design.

Assign a message: find 3 -5 different logos as models, and then integrate the message creatively into the new forms imitated from the model work.

3. **A check list.**

A checklist should be provided from the instructor. Based on the provided examples of logos, the check list should contain some questions such as: what kind of design principles have been applied in each logo? How many different type fonts? Is the tracking space of the type noticed? How much contrast you can find from each logo? What shape is the negative space in each logo?

Why imitation works in graphic design.

The following reasons will help explain why imitation based study will work in graphic design.

1. **Digest and remember sample work longer.**

First, students will physically trace model works and, therefore, have a longer impression of model work in their mind for future reference or guide.

2. **Acquire a deeper insight from observing details of model works which helps create sophisticated graphics in future practice.**

Undoubtedly, graphic design is a visual art which makes seeing a key point and priority action. In most design schools, when design activity starts, seeing some well-designed examples to trigger inspiration is suggested. Based on the definition of "observational learning" quoted from *Imitation, A Developmental Perspective*:

> [it is] the ability to delay any overt imitative response until sometime long after the initial observation implies the ability to form some kind of internal representation for maintaining memory across time and to employ such a representation rather than the modeled act itself for guiding behavior. (Yando, Seitz, and Zigler, 6)

The method of seeing visual examples shall fall into the category of "observational learning." Because seeing visual examples can "form some kind of internal representation", but all details, especially some subtle parts from examples, by just seeing them one would not be able to keep

these details and subtle parts in the "internal representation". While in many cases, it is the details and subtleties that create the ultimate beauty. In order to follow the "internal representation" as a guide formed from observation, the "internal representation" generated in learners' mind should be clear and precise enough to work as a guide behavior and provide instruction. In the case of graphic design, a simple scanning of example works (seeing visual examples) could not provide an active, accurate "internal representation" for a future design guide.   During foundational design training period, just because students have "seen" typographic elements, spaces, and images from design examples does not mean they consciously "realize" and clearly remember the details they have seen. How many entry-level students notice the variation of typographic tracking space when they see typographic examples? And how many of them notice the weight contrast in design works when they flipp through a typographic portfolio book? These details are critical to generate a clear "representation" in the mind and, without it, students will not receive a concrete guide to lead toward further guided design activities. This analysis also explains the phenomena in which students admit that they can feel and see the beauty from design samples but often have no clue on how to carry the beauty from examples over to their own design projects. It is simply because students' "internal representation" does not have these details recorded.

By tracing model design works, students will have to physically go through each detail of the model work and are forced to pay attention to these details, as they have to accurately duplicate these details with traditional materials and computer tools. It forces students to see the microscopic perspectives of designs that most of design students otherwise would not realize. Being able to see these details and become sensitive to them will equip students with a sharp insight from observation in a timely fashion, which normally take years to acquire from self practice.

What should be noted here is that the purpose of imitating model design work during foundational study is not to deny the value of the regular method of refereeing design examples. Imitating model works is more active and purposeful compared with traditional visual references.

3. Become more diverse and creative.

Many designers may disagree and criticize that imitating model works will restrain personal creativity in exploring new ideas and visual forms. I do see the point of the criticism.

But if one changes the perspective to rethink imitation, one may see its value of inviting more diversification and creativity in design activities.

Graphic design is not just to create visual forms but a process to creatively combine assigned messages with appropriate visual forms. Through imitating model works, students will be set free from having the pressure of constructing unique but appropriate visual forms. They can then focus on seeking diverse and creative solutions to organically integrate assigned messages with great visual forms based on the model works. It will open a gate for greater exploration of creative solutions within an appropriate visual parameter. Taking a similar field as an example, in English composition classes, students often have difficulty harmoniously combining writing forms and content together. With a given form/model to imitate, students feel more flexible in finding diverse contents or ideas and make it creatively fit with the form/model that works well as a guideline for a successful composition. As Butler stated in his article "Imitation as Freedom: ((re)Forming Student Writing":

> As a new academic writer, I found that these sample "themes" helped me give form to my ideas, to construct essays that were organized, clear, and coherent….they [forms] gave me the freedom to develop ideas by offering a form for me to imitate, a model from which to **structure** my own essays. (25)

In graphic design education, I don't see it any difference from English composition study. Similarly, design students also encounter problems of how to match an assigned message with appropriate visual forms. By imitating model works as a guideline, students will not only be able to create sophisticated, high-end visual forms, but also be able to figure out more diverse and creative solutions to "organizing", "clearly", and "coherently" integrating assigned messages with appropriate visual forms inspired by appropriate model works.

It should be noted that imitating and knowing model works does not mean students will duplicate exactly the form of the model works. Instead, due to different cognitive capacities or subjective initiatives derived from different life styles, early education, family, and social circles, etc., each student will unfold many formal varieties based on the model works. As Piaget said in his language theories, "to my way of thinking, knowing an object does not mean copying it -- it means acting upon it"(Flanigan, 213). The theory can be used to suggest that design students will also be "acting upon" the model works and eventually will find their own solutions and personal styles. Thinking of calligraphy as an example, many people start by tracing that curvy writing style using a template. But eventually everybody develops a unique writing style, which

sometimes is used for the purpose of identification. Whether the writing style is beautiful or clumsy, it is only original to each individual and always visually different from each other.

4. **Help students grow in a timely fashion by filling the gap between design theory and reality.**

Design principles are important in foundational studies. It is a basic and universal theory that guides to create better graphics. But after design principles are taught, many lower-level students soon ignore design principles when they execute a concrete design job. Consequently, their design outcomes are often pale and visually tedious. Often students have no idea what to do to change it.

I always believe that there is a distance between theory and reality. Inevitably, there is a gap between design principles and actual design execution. Knowing design principles and how to use them to produce high-end, sophisticated designs are two completely different levels. After seeing examples, participating in design lectures, and doing some exercises instructed by professors for the sake of learning design principles, students often have an illusion that they have truly learned design principles. However, truly mastering the knowledge or skills, especially in the graphic design area, is not measured by how much you have taken into your mind but how much you can take out from your mind and make happen in reality. A person who can read and understand Shakespeare's work does not mean he/she can write as well as he does. A good designer should be a designer who has already filled the gap between theory and practice, a person who can connect intangible ideology with concrete reality. Traditionally, more and more practice will work but it is a time consuming process for those students with a thin background of only four years.

To bridge that gap between design theory and practice during foundational study and to lead students into a design regime in a timely fashion, imitating selected model works will provide students with a guideline and have the student physically executing the design process in the same way that experienced designers do. It creates an illustrative environment in which students can see how design principles are flexible and professionally transformed and fabricated into professional works by physically following the model works step by step. Then imitating models becomes a process neither focusing on what are design principles, nor what is good design, but the process of how design principles can be integrated into professional design works. It provides

students with an opportunity to "see" and "do" the transition work and be able to use it in their own future works rather than having figure out by themselves through countless practice which may be an unnecessary investment of time.

Some notes.

Imitation should not be confused with plagiarism and copyright issues. It is also not to deny innovation. It is "takeism". It is to take advantage of research and experience from those "developed" designers and use advanced design experience to enhance learning. It also helps students receive shaper visual sensitivity and insight.

College students, as adults, may not appreciate the imitative activity in learning design foundation since scientists have proven that imitation behavior remarkably decreasing with age. (Yando, Seitz and Zigler, 12). But as long as imitation as one of many learning methods is applied, students shall see its great function and the difference it will make in their design study at college.

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Beyond the Walls: Using the outdoors as an innovative classroom for design fundamentals.

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A changing demographic of design students in today's classroom calls for innovations in design education. This paper outlines the theories behind and development of a card-based system to aid instructors teaching design fundamentals in an outdoor classroom. Using the natural world as a classroom provides opportunities for design students to develop a concern for the natural environment, while creating expansive thought process and developing their understanding of the fundamentals of form.

Design educators have a long, well-established tradition of teaching the fundamental principles of form. The elements and principles of design are the basis of ubiquitous visual language. While many theorists approach the specifics of this language differently, they all acknowledge its importance as a foundation for the education of visual communicators. Early 19th century Gestalt theorists such as Max Wertheimer, Wolfgang Kohler and Kurt Koffka have been lauded for their studies that inform the perceptual aspects of visual language. Their studies of perception brought understanding to unique physical and psychological aspects of sight. Through their research, they developed seven Gestalt Principles of Perception: figure ground, equilibrium, isomorphic correspondence, closure, proximity, continuation, and similarity. These principles form much of our understanding of visual thinking and perception and are the underpinnings of design education.

The Bauhaus (*Das Staatliches Bauhaus*) and Basel School (*Allegemeine Gewerbeschule*) are two schools recognized as cornerstones of design education. Walter Gropius established the Bauhaus in 1919 at Weimar, Germany. Several Bauhaus instructors published books on design education that emphasized the premise of design elements and principles. Wassily Kandinsky published *Point and Line to Plane* in1926. Kandinsky saw his book as a systemization of his theoretical ideas in which he sought to establish certain analytical methods while taking relational or compositional values into account. His goal was to illuminate how the basic elements are viewed. Johannes Itten wrote *The Art of Color*, *The Elements of Color* and *Design and Form*. In his writings, he recognized the basic laws of color and form, proportions and texture, and rhythm as the foundation of his concept of art education.

The Basel School's (*Allegemeine Gewerbeschule*) graphic design program was developed from the rich heritage of the Swiss graphic design scene of the 1950s and 1960s. Two revered instructors from this school also produced books that underscored the importance of foundational elements and principles of design. Armin Hofmann published *Graphic Design Manual Principles and Practice* in 1965. Hofmann believed line, plane, surface, color, material, space, and time should be presented to students as a coherent whole. His addition of this new dimensional view called for an extension of the principles of design.

In 1967, another instructor from the Basel School of Design, Emil Ruder, released *Typography—A Manual of Design*. In his book, Ruder illustrates the elements and principles of design through examples of his work, student work and historic reference. He illustrates through typography design elements and principles such as: point, line and surface, form and counter-form, proportions, contrast, color, unity, rhythm, spontaneity and fortuity, variations and kinetics.

Instructors from these established schools have not been the only ones to promote the elements and principles of design as the essential basis for design education. In 1972, Wucious Wong authored *Principles of Two-Dimensional Design*. He hoped to develop a visual logic by which students could be led to understand the elements of design, the possibilities of organizing them and the limitations. In 1973, the MIT press published *A Primer of Visual Literacy* by Donis A. Dondis. The goal of Dondis' book was to examine the basic visual elements and the psychological and physiological implications of creative composition. Dondis parallels visual literacy with verbal literacy, stating that visual literacy must operate within the same boundaries. One of the more recent editions to this list of foundational design books is Christian Leborg's 2006 release of *Visual Grammar*. Leborg pulls from the theorists and authors before him such as Wucious Wong and Donis A. Dondis and develops his own unique perspectives of syntax. Each of these books builds upon the premise of a visual language based on the elements and principles of design. This tradition of design education has stood the test of time and laid the foundation for contemporary design education. The way in which this visual language is taught, however, should be considered for a changing demographic of design students.

While contemporary graphic design students benefit equally from a solid understanding of the elements and principles of design, they are very different from the students of the 1920s—or even the 1970s. Whether they are labeled the 'Net' generation, 'Boomerang' generation or the 'Millennials,' pundits all agree there has been a cultural shift with the current generation populating college classrooms. In Jean M. Twenge's book, *Generation Me*, she provides not just speculation but validation that this generation is different from those of the past. Her research compares the results of personality trait and attitude questionnaires designed by academic psychologists. These questionnaires had been used thousands of times since they were written in the 1950s, 1960s and 1970s. Twenge's book presents the results of over twelve studies on generational differences based on data from 1.3 million young Americans. Many of the studies found that when you were born, has more influence on your personality than the family who raised you. Her research provides some of the first quantitative data of a generational attitude and personality change.

One of the largest shifts in the field of graphic design has been the introduction of the computer. The computer has not only changed the way design is produced and practiced, it has also had a large role in shaping the individuals that now fill the seats of classrooms. The aforementioned

generation has only known a life embedded with technology. They've had access to super-realistic video games, the Internet, e-mail, instant messaging, online communities, videos, and music that can be downloaded at will since they were toddlers. This level of interactive technology is shaping their culture, values, and world outlook. In teaching, it is important to consider the information that needs to be delivered as well as the nature of the audience receiving it.

This is where the natural world as an outdoor classroom provides not only a unique arena of presentation for current design students, but one that can deliver value as well. The Bauhaus and Basel schools used nature in their foundation courses, but only as the subject matter for form studies. The natural world's beauty is also full of meaning. At a time when many are seeking emotional reach from their computers, exposure to the natural world is essential.

In Last Child in the Woods Richard Louv states today's 'Net' generation is aware of global threats to the environment, but their physical contact and their intimacy with nature is fading. Louv's book investigates the increasing divide between youth and the natural world and the environmental, social, psychological, and spiritual implications of that change.

In The Green Imperative Victor Papanek theorizes that deeply embedded in our collective unconscious is our intuitive awareness of our relationship to the natural world. This awareness has gone through drastic pendulum swings throughout human history. However, mankind seems more distant now than ever. As Papanek points out, during the last century two major changes have occurred that contribute to the human disconnect from the natural world. First, we have nearly all—at least in the northern half of the globe—moved indoors. There are still jobs that take us outdoors, but even farmers plowing their fields sit in air-conditioned cabs, and most of us spend our time in homes, cars, workplaces, or public buildings. The second change is that we have now attained the power to change the natural order of the earth and throw it out of harmony.

Bringing the design classroom outdoors provides opportunity at many levels. Students have the chance to experience the natural world, as they never have before. They are removed from not only the classroom, but also the computer. They're asked to use traditional hand skills such as drawing and sketching. Finding the fundamentals of form in the natural world reinforces their understanding and creates a conceptual connection. Students are able to experience first hand a relationship between design and the natural world—this unexpected relationship opens students to an expansive thought process. As they observe and better understand nature, an inherent concern and respect develops. It is hopeful that this will create a design approach based on value and a deeper respect for the environment.

The Fundamentals in Nature Card System:

Educators are introduced to this system through a booklet accompanying the cards. The booklet contains six topics: descriptions of card categories, suggested use of the cards, suggestions for inclement weather, a complete supply list, bibliography, and discussion topics for possible outcomes.

The card system contains four card categories: task cards, element cards, composition cards, and Gestalt Perception cards.
Each circle in the following diagram represents a card in the system.

TASKS	ELEMENTS	COMPOSITION	GESTALT PERCEPTION
Soundscape	● DOT	● DIRECTION	● FIGURE GROUND
● STEP 1			
● STEP 2	● LINE	● BALANCE	● EQUILIBRIUM
● STEP 3			
	● SHAPE	● RHYTHM	● SIMILARITY
Natural Collection			
● STEP 1	● COLOR	● MOVEMENT	● ISOMORPHIC CORRESPONDENCE
● STEP 2			
● STEP 3	● TONE	● CONTRAST	● CLOSURE
Micro-Macro	● TEXTURE	● EMPHASIS	● CONTINUATION
● STEP 1			
● STEP 2	● SCALE	● CONCENTRATION	● PROXIMITY
● STEP 3			
	● DIMENSION	● HARMONY	
Garden Observation			
● STEP 1	● SURFACE	● SEQUENCE	
● STEP 2			
● STEP 3	● VOLUME	● RADIATION	
	● LETTER FORM	● TRANSPARENCY	
	● FORMAT	● WEIGHT	
		● POSITIVE/NEGATIVE	

Each task card details a task on the front and provides a visual of design precedent on the back, along with interesting facts and details of the artist or designer. On the front side of the elements, composition, and perception cards the formal aspects of visual communication are introduced along with a visual example. The reverse side of the card provides context for the example in the natural world, providing natural facts and learning points.

It is intended that the student begin with a task card. Each task card has three phases that lead the student from an intuitive approach, to a theoretical approach, to an application of graphic design. For example, in the 'soundscape' task, the student is instructed with the first 'soundscape' task card to go into their natural world and visualize sound. Afterwards, they return with their classmates, share their work, and view their classmates' compositions. It is at this point the students receive the rest of the cards (elements, composition and Gestalt Perception cards). The element cards are used to define the fundamental elements of design. The composition cards define and illustrate aspects of composition (or design principles as they are often called). Gestalt Perception cards introduce students to the Gestalt Principles of Perception. On the front of each of the element, composition and Gestalt Perception cards are definitions and a visual representation of the element or principle. On the back of each card is an image from nature that provides context and an opportunity for environmental education. Through co-construction, the class uses these cards to begin to understand the theories and formal aspects at work in their compositions.

With the second task card in the 'soundscape' series, they then apply what they have learned from the elements, composition and Gestalt Perception cards through addition, or recreation of their composition. In the final part of the 'soundscape' task, the students are asked to create a poster promoting the area where their 'soundscape' was created, while applying typography and the fundamentals of form learned.

Instructors are the primary dispenser of the cards, with the students gaining access to particular cards in specific phases of the project. The cards and an accompanying booklet are a teaching tool that provides project structure, references, discussion points and visual aids for the instructor in the outdoors. During certain points of the projects, students may receive specific cards or photocopies of specific cards for task directions or definitions of elements, compositional aspects or Gestalt Principles of Perception.

The goal of this system is for students to have a greater interest and respect for the natural world as they learn the fundamentals of design. This approach adds value and conceptual connection to the teaching of graphic design. At the time of this paper, initial testing of the card system was commencing.

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Meaning, Messaging, and the Visual Representation of Ideas

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Poster

As graphic designers we often use the power of image to persuade, convince, reveal or to construct a contextual stage for messages. A great deal of consideration goes into this process of deciding what type of imagery will best convey our ideas. As visual thinkers we are accustomed to deciphering the distinctions created by color, form, scale, etc. By cropping away information or altering color we can more accurately represent our ideas. All of this assumes that our decisions will effectively communicate with an audience. But how often do we evaluate these visual decisions after the creative process has concluded? What happens to our work after it is released for public consumption?

In regard to politics the use of image is used to associate personalities with issues, display concern, patriotism, as well as create negative associations. How well do these efforts succeed? More importantly, how visually literate is the general public in terms of detecting and interpreting what they see?

This project is an effort to raise awareness to the use of images in messaging. Given the choice, what images would the general public associate with specific ideas or words? How can one image be more meaningful than another similar image? This project asks viewers to make decisions as to images that best represent their visual definition of political terms or ideas. During this process it is hoped that viewers will begin to develop a better understanding of how visual imagery can influence meaning. By placing the responsibility of making these visual decisions with the viewer they get to experience a part of graphic design.

The H-words in Graphic Design Education: The Hand, Head and Heart in Haptic and Heuristic Learning

Jessica Barness
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Poster

Development of a personal voice is often regarded as evidence of a graphic design student's knowledge, maturity and confidence. This is more than just style; it's a deeper conviction connecting sense of self with greater social, political, economic and cultural meaning. In contrast, focusing on career anticipation and professional sensibilities may suppress personal voice. As a result, the learning environment may be compromised by turning education into job training.

With electronic interfaces potentially diverting the focus from hands-on processes, an additional tension is established between hi-tech and low-tech. Paradoxically, the more synthetic digital environment has its analogue in direct and transparent low-tech methods long associated with manual training (paper craft, drawing, letterpress printing). Emerging software presents a means to work with the visual, conceptual, and participatory with (almost) immediate fulfillment. Nonetheless, a classic cut-n-paste collage assignment addresses more than the principles of design; it also speaks to digital sampling and exploration of creativity, ownership and copyright issues.

Facility with varied media enables students to create hybrid designs—flexible, accommodating, transformative. This collection of skills is not unlike a toolbox, or ingredients in a recipe, allowing the student to select appropriate elements with fluidity. As an emphasis on heuristic learning shows, problem solving becomes infinitely more complex and engaging.

Do hi-touch (hand) and personal voice (heart) instinctively go hand-in-hand? Similarly, does mastery over hi-tech (head) deny the voice while preparing for employment? Could low-tech be considered hi-touch (haptic), and how might it integrate with hi-tech?

Our poster proposes to take these two polemical topics – personal voice and professional sensibility, merged with hi-tech and low-tech – and create more nuanced relationships. By grouping along objective/cognitive and subjective/emotional axes, we hope to demonstrate the value of an integrated approach to graphic design education, one that embraces the future's fuzzy borders.

Communicating With Characters: Character-Based Graphic Design, Illustration, and New Media

Marius Valdes
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Poster

Jimmy Carter once said, "Mickey Mouse is the symbol of good will, surpassing all languages and cultures". Proving that some characters are so well designed and so well circulated in culture that they become icons in their own right. This trend continues today in not only print design but new forms of media from video games to mobile phone applications.

My work as a graphic designer and design educator has led me to investigate creatives that focus on character-based work as their primary means of visual expression. Designers and illustrators are taking their character-based work from commercial applications and exhibiting in traditional fine art galleries. My research shows that there is significant character-based approaches being developed and applied in fine art, commercial endeavors, and in a synthesis of the two.

Character design has become a fast growing trend in modern graphic design, illustration, and new media. Much like any pictogram or symbol, character design can be a powerful visual language that cuts across cultural barriers. We are no longer separated by geography and it makes communication without language barriers even more important. New media allows this to happen quickly.

While these unique characters can be appreciated for their formal qualities and artistic originality, there are many potential uses for them to help improve communication for a variety of meaningful purposes. To me the most interesting aspect of creating art and design is the process of solving visual problems in an imaginative way. Communicating with character-based design merits continued exploration.

This poster will introduce design educators to emerging forms of character design, their imaginative creators, companies that demonstrate ideas for the future, original methodologies of character design, and some of my own character based design.

Letterforms and Literacy

Carol Fillip
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Poster

We as design educators spend a great deal of time with students teaching, enforcing and reinforcing typographic principles. We inform our students on the importance of legibility and readability when selecting a typeface, emphasize factors such as appropriate text size, characters per line and many other considerations inherent to good typographic practice. Should one use serifs or sans serifs? Uppercase or upper and lowercase? Established "rules" of typographic selection and application are sometimes taken for granted without any critical analysis or evaluation.

When our students are faced with a project that requires designing for children, all the typographic rules our students have learned must now be re-evaluated and approached differently. Many considerations arise.

For example, when observing an early reader, one notices that the following characters after often confused: b with d; p with q; n with u; m with w; uppercase I with lowercase l. How can designers help early readers learn the differences more quickly and easily?

Letters such as the one story a and g, compared to the two story a and g can be very confusing to the early reader. Designers need to evaluate which are the easiest to identify and write and why?

Certainly, reading specialists and teachers are concerned with these details, but generally they are more concerned with sight words and other reading comprehension skills than the typographic component of reading and writing, as these researchers have found when visiting rural and suburban schools. For example, these researchers have documented several different typefaces, styles and approaches used in one classroom on various materials where early readers are trying to learn how to read and write.

This poster seeks to identify many of these issues and present possible scenarios to alleviate some of the confusion by way of a more systematic, graphic, holistic approach to the presentation of letterforms for early readers and the role the designer must play.

Brand Vacancy: Room for Change

Andrea Marks
Oregon State University

Nancy Froehlich
Oregon State University

Poster

As the economy continues to suffer, businesses are shutting down and more and more buildings are left vacant. How could these empty buildings be repurposed? Senior graphic design students at a state University stood up to this challenge, envisioning resourceful and creative ways these vacant buildings could service needs within the local community. The project focused on responsibilities as a designer, designer as an entrepreneur, as well as traditional design issues such as branding and corporate identity.

The parameters for this ten-week project were to propose an innovative, dual-purpose organization or business, that could occupy an existing vacant building. The space needed to service the community while also considering issues of financial and environmental sustainability. The location of the college is within a small town with a population of 55,000. Its downtown area is dotted with small, locally owned businesses. The economic crisis has left many storefronts vacant and the question of how to revitalize the area with new and innovative businesses seemed like a perfect question to pose to the students.

This course was a perfect jumping off point for discussions on the impact designers can have in helping create local change, both from a visual and social perspective. Pragmatic discussions about logos, icons and systems, were intermingled with discussions about sustainability, compassion and responsibility. The individual projects ranged from a collaborative music organization that restores instruments and supports local musicians to an organization that provides ethnically diverse food to the elderly. The project culminated in a class book, with each student's project highlighted. Collaboration played an important role, as students jointly developed the cover and structure for the book. Each student left the class with a book in hand, and a better understanding of how they can utilize their design skill to impact change locally.

In design education there are difficulties and limitations in engaging students with complex real-world problems. Although this project was hypothetical, the goal was for students to recognize the impact innovative design solutions can have on their local community.

The poster will define the goals of this project while highlighting several of the final projects.

American Sex: Selling Social Awareness through an Experience

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Poster

The arena of advertising social awareness is saturated with stagnant images and bland content, all of which is captured on a relatively small piece of paper. These attempts at communication are often lost to a visually-jaded public passing by a multitude of overcrowded bulletin boards. How then can the consumer who is already visually overtaxed hear a worthy call to action?

ANSWER: Reverse their perception of the anticipated experience.

If you understand what the viewers are expecting from an experience and how they will act when confronted with strategic marketing ploys, then it is a logical assumption that a designer can capitalize on their expectations while delivering an unexpected experience.

ANSWER: Give the message form and perceived value.

Understanding current advertising tactics used for promoting social awareness—an analysis of what is successful and unsuccessful—is imperative for communication. But it is much more important to look outside of the realm of tactics used for social awareness. For example, if the consumer is willing to pay $150 for a beauty product, how can those same advertising tactics that generate perceived value of an overpriced beauty product be applied to a social awareness campaign?

The Process

In a collaborative effort, seven graduate students endeavored to bring awareness to the issue of child trafficking in America by creating tangible products that sold an idea but were developed using altered advertising tactics to increase allure and high marketability. This resulted in a consumer interaction and experience that led to education, awareness and action.

This presentation will document the process and success of this project: the in-depth research behind the concept, the concept development, the execution of the product, and the national and international success of the project.

Making the Connection Between Research Methods and Design Decisions

Aaron Scott
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Poster

This poster visually explain the process a design class undertook to find and resolve problems with an outdated environmental graphics program. Research methods conducted included directed ethnographic approaches, including direct and indirect observation, participatory research methods, focus group sampling, surveys, and questionnaires. These research methods were selected in order to provide additional understanding and insight into how the users navigate and interact with the facility. The main focus of the research addressed the usage of artifacts, traffic flow, branding, icons, the process for developing a sign message schedule, and how these methods could be used to make informed design decisions. Each of these topics were researched and developed to make this facility updated, modern, and more effective.

Upon completion of the research students developed creative briefs and project guidelines that allowed them to ensure proper application of the research findings within the design decisions. These guidelines were referenced to be certain the needs of the users were being addressed. Students then develop a proposal that outlined how the facility's wayfinding/spatial layout orientation, environmental graphics, and brand identity could be redeveloped.

Throughout the process students met with various members of the facility to receive feedback and evaluate progress. The results were summarized in a formal presentation presented to the facility's staff, and are currently under evaluation for implementation and effectiveness.

Design Pedagogy:
An International Approach

Aidan Rowe
University of Alberta

Poster

"And what should they know of England who only England know?"
Rudyard Kipling, *The English Flag*

Design education is at a crucial crossroads. Caught between trying to grow out of a service industry based on a model from the early 20th century and a world that has embraced technologies that drastically change how we relate to and with each other, many design education programs are at a defining moment. Additionally as design moves further into academia many institutes are faced with the challenge of growing (or establishing) and qualifying research and research degree programs in design.

Design educators are left with the challenge of further developing programs that educate designers that: are as skilled at asking questions as designing artefacts; will place design within a larger holistic context; and, most importantly, are able to see and articulate the larger role that design needs to play in the 21st century. In short how can we develop programs that enable design students to pursue what Tony Fry terms the "qualitative over the quantitative".

This poster proposes that one means of addressing these issues – and re-examining our design pedagogic practices – is by using the lens of the International. The poster documents a variety of projects that use the International as a means of production, presentation and collaboration. Examples include larger undertakings – exhibitions that brought together work from staff and students at five art and design schools – to smaller, more individual projects that paired students up with international collaborators on short intense projects.

Finally the poster examines the benefits, and challenges, of using the International as a reexamining focus for our current pedagogic practice, proposing some key concepts, practices and possibilities required for the design programmes of today to ensure that we are educating the designers that we need tomorrow.

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