

AIGA BOSTON PRESENTATION – APRIL 4, 2008

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Toto, I've got a feeling we're not in Kansas anymore...

Tonight I'd like to discuss the distance between where we are going in the practice of graphic design and longstanding assumptions about design education. I am not talking about the often-heard debates of skills versus concepts, theory versus practice, or professional versus liberal arts education. I'm talking about the disorienting relationship between the circumstances of twenty-first century life and what and how we teach design; about the worldview of professional practice against which we devise the content and pedagogy of professional design curricula.

To set up this discussion I'd like to offer a simple model that describes the changing experience of students as they transition to design practice.

In the middle of the twentieth century, students entered the field through technical support. Under an apprenticeship model, they earned the right to create form only after serving time in the mechanical production of more experienced designers' ideas. Designers who were successful across a lifetime of form-making occasionally gained access to strategic projects at the highest levels of business. Their preparation for such work was gained on the job.

In the later decades of the twentieth century, technology collapsed the preparation of art for print under expert software. Networked communication demanded new skills in building and managing systems that have less to do with inventive form than with understanding users and technology. And once businessmen like Tom Peters discovered the power of design to differentiate otherwise similar products and services, there was no turning back; the strategic role for design expanded and demanded more expertise than could be gained from running a design office.

Now I'm going to borrow from Sharon Poggenphol's example and invoke Habermas. The first model of practice is what Habermas calls know-how. The second is what he calls know-that. Sharon describes this as the distinction between design as a craft and design as a discipline.

This evolving transformation creates new pressures on design education – among them, higher demands for graduate study and research, loss of territory to other disciplines on campus, and the need for diversifying curricular offerings among schools. But the problem at the most fundamental level, however, is that college

design curricula, and the pedagogies through which we deliver them, are based almost exclusively on the first model of practice, on know-how, and don't acknowledge issues that drive emerging practices.

Now I've made this argument about an outdated model for a number of years and I find that few faculty dispute the evidence of change. Most counter that *their* program continues to prepare students for form-making leadership, despite the introduction of new practices and lingering questions about just how many graduates of such programs the profession can accommodate. So tonight, I'd like to come at this problem of the ostrich with her head in the sand from another direction and try to make the case that even when educating form-makers, we're hopelessly stuck in the past.

The AIGA, in collaboration with Adobe, formed something called the Visionary Design Council and charged it with describing the designer of 2015. A short-term prediction is not very useful to people who are in the business of educating designers who may practice until the year 2060. But something is better than nothing and the exercise was a great opportunity for a reality check. I'd like to share a bit of what I got out of that effort.

These are a few trends for which there is ample evidence in the year 2008. I'm not in the business of trend analysis, but it doesn't take much expertise to predict that the trajectory of these trends will mean something to how and what we design now and in the future. I'm going to come back to these, one at a time, in a minute.

- **Increasing complexity in the scale of design challenges**
- **Thinking about the people for whom we design as participants in the design process**
- **Emergent and remix technologies; designing social interaction**
- **The importance of understanding community**
- **The demand for new knowledge base that supports new practices**

This is a list of longstanding assumptions about how design is to be taught. We inculcate new faculty in these traditions through their own design education and through presentations at conferences such as this one. My goal in tonight's discussion is to interrogate these traditional assumptions under the strong light of trends; to examine what we are doing simply by habit that may not be the best way to prepare students for twenty-first century practice.

- **Students learn best through experiences that move from simple to complex**
- **Every student should be doing the same thing at the same time**
- **Individual performance and control of outcomes are among the highest priorities**
- **The computer is an extension of traditional tools and media**
- **Underlying principles of "good design" are universal**
- **Graduate education in design should follow the model of the fine arts and be about refining visual skills**

And to make this interrogation a little more concrete in terms of the academic context, I'm going to show some examples from our work at NC State, not as models to follow, but as evidence of our very real attempt to wrestle with the issues of a know-that approach.

TREND: Increasing complexity in the scale of design challenges
ASSUMPTION: Students learn best through experiences that move from simple to complex

Design methodologist Christopher Jones wrote in the 1970s about a hierarchy of design problems ranging from components, through products and systems, to something he called communities, or interacting systems. Jones' message was that the problems of contemporary post-industrial society reside at the levels of systems and communities, not at the level of components and products. Implicit in this declaration is recognition of complexity, of an increasingly intricate web of interactions among people, objects, and settings.

We don't have to look very hard to see that Jones is right. This chart shows accelerating complexity in the nature of problems tackled by emerging design practices. We now understand that logos have little value if not nested within a larger branding strategy. And the iPod succeeds over other MP3 players, not just because of its *cool* form, but because Apple invented iTunes; it positioned the object within its own economic system. Amazon.com succeeds over other online booksellers, not by how its display screens look, but by thinking of me as a lifetime buyer, as a researcher looking for related literature, as a book critic, and so forth. As we move from designing discrete objects to designing experiences, strategies, systems, and services, we expand the complexity of relationships to which we must attend.

I want to make clear that the type of work at the experience end of the continuum is not just that of big business and is not void of artifacts. Even the "social" projects that comprise so much of designers' discourse require this level of engagement. I'm reminded of an AIGA conference in which Milton Glaser and Nicholas Negroponte shared the stage, commemorating their pairing twenty years earlier at the first AIGA national conference. Glaser passed out copies of his most recent poster for ONE.org, which carried the typographic line, "We are all African". Negroponte shared his first stories of MIT's \$100 laptop, which brought the information world of the internet to children living in poverty in developing countries. I was sitting in the audience with Hugh Dubberly who commented that design had made such little real progress over the preceding 20 years in comparison to technology. In a formal, visual sense, these are equally economical solutions, but their basic perceptions of the problems of poverty and what part design can play in addressing them are quite different. Why is this the case?

I believe that design education, at the most fundamental level, views complexity as a *problem to be overcome through reductivist artifacts*, not as an inevitable and pervasive attribute of life in the post-industrial community. So if the future is about an ever-expanding web of connectedness, how are we preparing students for meaningful work in this complex world? I'd like to suggest that we're not. Despite the obvious emotional impact of Glaser's poster, he belongs to a generation in which the goal of design was to make things *simple*. Negroponte, on the other hand, is a technologist for whom the design goal is to render the complex *manageable* and to make complicated things *meaningful*.

Almost everything about today's graphic design education is matched to Glaser's worldview. We structure both curricula and projects in craft-based progressions from simple to complex, from the abstract to the contextualized. In typography classes, for example, we begin with the letter, and then advance to the word, sentence, paragraph, and page. Sequences of typography courses are built on this simple to complex progression, when opening InDesign demands that students address the formal and interpretive issues of publication design simultaneously; how do you defer a discussion of leading, of column width, of the modernist preconceptions of software, of language? The only option is default, and what kind of typographic lesson is that?

The reality is that our strategy for teaching typography is residue from how students could comp type in pre-digital times; by drawing. It is the organizational structure for every type book since James Craig's 1970 *Designing with Type*, but it holds less relevance for what students need to know about communication in a digital world. Typography today is a complex relational system that depends on the interplay of formal, technological, linguistic, and cultural variables. Yet we persist in teaching this progression of scale, isolating such variables within their own distinct conceptual frameworks and rules.

The same strategy exists for how students progress in other studies of form. Foundation lessons begin with abstraction: point, line, and plane; color wheels; and paper-folding exercises. We defer discussions of meaning and context until later levels of the curriculum and beginning students learn these abstraction principles only through patterns in what makes their teachers smile. Nothing about these studies resembles what students know about in the real world, and as a colleague recently suggested, what the clients of design see in our work. So what if we begin with the familiar and complex?

At NC State we decided to take on this problem. We asked, what if we confront undergraduate students with the challenges of making things clear and meaningful, not of making them simple – with understanding and managing complexity, not reducing it – right from the beginning of their studies. So we assigned each first-semester sophomore an object, ranging from the cell phone to correspondence to punctuation to household appliances to board games. We gave them the template for a map, showing the many systems of which any object is simply a component. The specific objects and their formal potential were unimportant; analysis was the real content of the assignment. We assembled a diverse reading shelf; letterwriting by women in the Victorian era, a chronology of timekeeping technology, the gender significance of housework, the relationship between social class and table cutlery. We asked students to build large concept maps of their objects. Students had two InDesign lessons and in 4 weeks built a map like this one by Rachel Huston from professor Kermit Bailey's section. The map served to locate the subsequent projects for the semester; students saw that later investigations were *situated* within sections of the map and understood their relationships to the larger context. Form was taught simultaneously with issues of context, not as an abstract precursor to meaning and setting.

We then asked if we could integrate writing into this studio enterprise, not as critical writing about design but as part of a larger process of understanding context and informing design action. Students built timelines of the

technological lineages of their objects (the iPod is the current iteration of music listening technology, for example), then wrote analyses of the social impact of two specific technologies as preparation for the design of two posters. Liz Walters' poster on the left describes rural cultures of the past, in which timekeeping was measured by changes in nature. The one on the right reflects the contemporary, mechanical division of time into increasingly smaller increments, a condition necessary for work in industrial and post-industrial societies. It also references the distortion of natural cues by the urban environment.

What was exportable from this assignment was a way of thinking about design problems. We learned from these investigations that beginning students could both articulate sophisticated positions on the issues nested within complex systems and frame problem statements that drive their own work. Further, we could teach form within a context and while doing something else as well. In other words, there was nothing about their skills and insights that argued for beginning with the simple or abstract and deferring the complex and applied.

TREND: Thinking about the people for whom we design as participants in the design process
ASSUMPTIONS: Individual performance and control of outcomes are among the highest priorities.

Computer scientist Gerhard Fischer, in an article titled "Beyond Couch Potatoes" makes the argument that as technology expands, greater control moves from designers to the people for whom we design. Cognitive psychologist Liz Sanders describes this transition as thinking less of people as *customers* and *users*, more as *participants* and *co-creators*. And Henry Jenkins of MIT's program in comparative studies addresses the larger issues of participatory culture made possible by media convergence. Spend a few minutes on Facebook, YouTube, ebay, or Second Life, and you instantly understand who is in control.

So if our role as designers is less about crafting objects and increasingly about designing tools, systems, and the conditions through and in which others create their own experiences, what are we doing to educate design students about engaging the people for whom we design; about platforms that are adaptable and expandable as participants and social structures evolve over time; and about working in interdisciplinary teams that include human-centered experts. How much of our curriculum is devoted to collaboration and relinquishing control? And what is our model of design leadership?

I would argue that the current basis for much of graphic design education is individual performance, ownership, and a belief in control. Our frequent location within a school or department of fine arts reinforces this perspective, and as faculty, we do little in our construction of student projects to undermine the notion that the role of the designer is as the arbiter of meaning, value, and good form. We invite design speakers to our programs to share their personal portfolios and to tell war stories about what they were able to "get past" a client, inculcating students in a we/they culture. For the typical design student, clients and users are exotic *others*, understood from the student's own observations and assumptions, not through much input from real people. And even when the student is aware of different demographic groups as potential audiences for design, there is little comprehension of the uphill task of persuasion.

David Rose shared this model with several of us at an AIGA Experience Design meeting in Telluride. I've never seen it published, so I'm going from a sketch on a cocktail napkin. David's model describes the transformation necessary to take someone from *being not ready to know something* to *being an advocate* and suggests that different channels of message distribution may be more or less appropriate in reaching people at different stages of acceptance. Think about Glaser's poster, *We are All African*, or any of the social message projects that permeate today's studio classes. In what way do they demand the deep understanding of audiences so necessary for achieving this transformation? And just who is going to argue with saving the whales, so where in these "social" projects do students learn to reconcile the competing values that are so typical of today's design challenges?

Sophomores in their second semester of graphic design study at NC State focus on people, settings, and scenarios. This project, under Department Chair Santiago Piedrafita and graduate assistant Alberto Rigau, asks students to do a one-minute documentary film on a day in the life of someone in the college. The students keyframe their films and convert them to broadsheets, learning the affordances of various formats in representing user-based issues. A similar project on settings asks students to construct photographic panoramas and then annotate them diagrammatically with descriptions of activities within those spaces. These and the previous examples aren't about learning how to make a map, a poster, a film as the arbitrary vessels into which designers pour equally arbitrary content. The purpose of the assignments are to foreground the relationships between certain kinds of information and particular representational strategies.

TREND: **Emergent and remix technologies; designing social interaction**
ASSUMPTION: **The computer is an extension of traditional tools and media**

I've come to think that if I hear the phrase, "The computer is just a tool" one more time, I will shoot myself. This is the ultimate know-how viewpoint. And I am eternally frustrated by books that segment discussions of print from discussions of interaction design. And courses that isolate the design of screen displays from the larger technological systems and experiences of which they are a part. We are confronted daily with evidence of how our perceptions, intentions, reasoning, and actions are mediated and transformed by technology.

In the majority of college and university design programs, however, we have "curriculum by accrual". 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 in 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. Faculty complain that there is too much to teach, yet are unwilling to reconsider the time spent in traditional content leading to media-based work. So just as my American history teacher in high school never quite made it through World War II before the end of the school year, the technological education of graphic design students runs out before they fully understand designing for a digitally mediated world. They're left with thinking that web or interaction design is about buttons and page flipping, or about making things move.

If we understand the role of technology as the mediation of our interactions with people and the world, not just as visual representation, we design differently. Working from the original writings of Russian psychologists in the 1920s and 1930s, activity theorists describe human beings as acting to influence something; that human plans underlie human actions. This requires that the scope of analysis for interaction design be extended from the mere execution of a task to the meaningful context of people's interaction with the world. If google only thought about executing the actions of keyword searches, it would be far less successful as a company. But the ways in which google allows us to customize what we're looking for, to find meaning in the popularity of certain sources, to view concepts from a variety of representational perspectives depending on our motives and use, and to share and collaborate, acknowledges the larger context of our activity and the effects we hope to achieve.

I would argue that all design is the mediation of interaction and that we can begin teaching that concept at the earliest levels of the curriculum. Vignelli's design of the *Audubon Field Guide To Birds* is no less a database than shoes.com. The graphic instructions for assembling a piece of furniture from IKEA or using a prescription inhalant are no less interactive than the sequence of actions necessary to use computer software. And all are connected to larger social contexts and user motives to influence their world.

NC State graduate students, in a project with AIGA, designed a proof-of-concept for a design research database. Some of you may have seen them present this project at last year's *Schools of Thoughts* conference in Pasadena and it is the subject of a current article by students in the journal *Artifact*. The emergent system uses researchers and doctoral programs from around the world to curate a portal to literature, conference proceedings, and doctoral dissertations on design research. In other words, choose the right people and let *them* construct the knowledge base from a variety of perspectives, remixing already-produced material into a meaningful whole. Using a limited access wikipedia format, the site also allows users to eavesdrop on the annotated curatorial process as experts debate the meaning of keywords and the range of possible references. Interaction with the site, therefore, not only supports the task of accessing bibliographical material, but also frames the view of an emerging research culture.

The important message in this project, from a pedagogical standpoint, is that the students' design of the system design got better in direct proportion to their parallel work in thesis research. In other words, the more they understood the larger context and the motives of users with respect to the activity of research, the better able they were to design. Had Santiago and I simply stopped their work at a media-based translation of printed bibliographies, the outcome would have been less successful.

In design schools we tend to view curriculum as a collection of content categories: we define courses by the objects made (motion graphics), segments of practice served (web design), or technical processes employed (photoshop), not by the students' developing awareness of concepts that transcend these categories, by critical or problem solving frameworks, or by the intended mediation by design. Again, such courses are about know-

how, not know-that. In this environment, technology is rarely positioned as transforming cognitive perceptions and social practices; it remains a tool, an effect, a venue.

TREND: The importance of understanding community
ASSUMPTION: The underlying principles of “good design” are universal

It wasn't until I lectured in South America a decade ago that I really understood the dilemma of globalization and designing for communities other than our own. I was part of a group of American presenters, including several who suggested that design efforts at globalization were simply a euphemism for selling American products in less developed countries. And in fact, our discussion was right next door to one by Landor on ramping up the marketing of Coca Cola in non-western nations. Later, over dinner with designers from Uruguay, we were asked “who are you Americans to say that people in our country should not have Heinz ketchup, if it is better than what we produce ourselves?” In other words, our mistake was in valuing historical consciousness to the exclusion of life goals.

This potential problem of misreading communities isn't restricted to work in other countries; it is present every time designers are asked to work in or for a culture other than their own. How do we resolve the tension between retaining cultural authenticity and a desire for change? And what do these communities tell us about the issues that really matter in design?

At NC State we recently asked design anthropologist Dori Tunstall to do a workshop for our graduate students on the concept of community. Students were about to begin a semester project in designing for online learning communities and we were looking for a deeper definition than might be evident in the typical social networking site or e-learning environment. Dori asked the students to study an existing site, first determining its charter – its tacit values – and then using a Sapient framework for describing its status as a community. The students' work in this respect appears on Dori's blog for those of you who would like to access it. In some cases, the students found that what appeared to be an online community was simply access to a collection of tools; that the group of users never rose to the level of *communitas*.

- **Historical consciousness**
- **Life goals**
- **Organizational structure**
- **Agency**
- **Relationships**

Like our undergraduates, the graduate students built concept maps to sort through these issues before constructing an online learning site. This one by Rebecca Tegtmeier for parents of autistic children, acknowledges that parents are lifetime learners about their child's condition and that information goals and relationships with other parents will change as the child progresses through life. The community evolves, and therefore, so must the site.

The message in this exercise is that to define a community simply by one dimension is insufficient if our purpose is to foster online interactions that are as rich and robust as those in the analog world. How we get students beyond the issues of cultural motifs or symbols and to the humbling work of understanding contexts, values, and behaviors other than their own is the challenge of designing for a global community.

TREND: Demand for a knowledge base that supports new practices
ASSUMPTIONS: Graduate education in design should follow the model of the fine arts and be about refining visual skills and concepts for practice

I'm going to deal with this assumption in my breakout session tomorrow where I have a little more time and the assistance of my students. But to lay the groundwork for that session, I'd like to share a few statistics from a 2005 survey by *Metropolis Magazine*. *Metropolis* polled 1051 design practitioners, faculty, and students in a variety of design disciplines, including graphic design, about their research practices. Now I will confess that what respondents think constitutes research ranges from deep investigations of user behavior to picking color swatches. But however these respondents define the activity, this is some of what they had to say about its role in their work.

- 81% of professionals said they engage in research on a regular basis in their practices
- 70% of professionals said they don't collaborate with students on research that is important to their business
- 69% of university department chairs said research is an integral and required part of their curriculum
- 35% fund faculty research through internal university grants
- 22% of practitioners don't share their research with people outside the firm
- 29% publish only at conferences
- 17% of faculty publish in books
- 4% publish online
- 80% identified sustainability as content with the highest research priority, but they ranked systems theory as the lowest priority

What these statistics tell us is that there is no consensus about what constitutes research; little engagement of schools in research that relates to professional practice; limited success in gaining external funding; and about ½ the research done in universities and design offices is never disseminated in archival form, therefore unavailable to students and other scholars. We have to do a whole lot better if, as in other disciplines, academic research is to shape thinking in the field and move it forward. And as Sharon Poggenpohl ably demonstrated at the recent AIGA conference in Denver this past fall, the US is way behind other countries in developing its design research culture; fewer than 10% of the papers submitted to an international design research conference came from Americans.

So how do we build a research culture and the *discipline* of design if the curricula in graduate programs are based only on studio models in fine art? From where will these researchers come and under what standards will their work be evaluated? And how are they prepared to accept research obligations as university faculty?

This is an enormous challenge for the field. It requires not only fine-tuning the missions of graduate programs and criteria for the tenure and promotion of faculty, but greater understanding by employers of what graduate students can bring to the table. It also means we need to re-examine the criteria by which we admit undergraduate students and build their academic competencies for later graduate study. As a field we need to support the growth of doctoral study and efforts to disseminate the growing body of research.

In my session tomorrow, I'll talk more specifically about framing researchable questions and how that activity differs at the master's and doctoral levels. Former NC State master's student Jamie Gray, now teaching at Kansas City Art Institute, will share her work on digital collecting and current doctoral student Deborah Littlejohn will address her work on situated learning in media pervasive environments.

Conclusion

The issues I've discussed this evening are only the tip of a very large iceberg, There are other traditional assumptions in design education that demand our attention: that all students should be doing the same thing at the same time; that the obligation of students is to execute the faculty brief but never to author their own; that design students don't read. It is going to take a unified effort to address these and other challenges. At a time when more students elect design for university study than ever before in history, it is easy to congratulate ourselves that we must be doing something right, and I do believe that we provide a very special college experience. And I concur that the artifact and form really matter. But I want to caution the young and future faculty in the audience that your generation will need to do more. That you cannot simply follow the patterns of your own education. That you will have to design learning for the twenty-first century.

ADDENDA TO THE PRESENTATION:

Following my presentation, two issues emerged in discussions that I think need a little clarification.

First, I am committed to the notion that making and a true regard for the power of form are the somewhat unique contributions of design to the world and essential to a design education. In fact, my teaching and writing promotes the importance of making as a way of thinking and I argue for integration of design activities with K-12 education in a variety of subject areas for this very reason. And I truly believe one role of design programs is to make clear how the specific physical and material attributes of objects transform human perspectives, values, and behavior.

But in speeches such as this one, you can't cover everything. The point I was trying to make in Boston, is that form can't be sole content of a post-modern design education if we are to truly address practice in the twenty-first century.

My purpose in this presentation was to say that form can be taught within a context, not as isolated principles with nothing but modernist aesthetics as benchmarks for determining its effects; that students can focus on more than one thing at a time and that they come to us already understanding, from their successful navigation of a very visual world, that different kinds of form produce different consequences. The issue for me is not *whether* we teach form, but *how* we teach it: first, as an abstraction to which we later assign meaning, or as situated, with its meaning informed by the surrounding context.

The second issue relates to what we mean by "systems". If we return to Jones' hierarchy of design problems, visual systems like a graphic identities and signage fall under the category of "products" that are made up of "components" such as logos, typefaces, color palettes, formats, etc. A "system", in Jones' sense, is all the communicative forms and relationships within culture, which in turn, interact with other physical, technological, cultural, social, and economic systems. Complexity in this sense is not necessarily visual, although it could be expressed or addressed through visual means, but is defined by the number and nature of relationships between communication and other aspects of life and work.

Finally, I have appended this text with slides from my presentation. There are images for which I do not have copyright permission, therefore, they are not included in the document. They include: Milton Glaser's poster for ONE.org; the \$100 laptop from MIT Media Lab; and screens from Second Life and Photosynth.

