This talk was presented on April 29, 2009 at the School of Design Strategies at Parsons The New School for Design in New York. The original talk was given on February 7, 2009, as a keynote for a Conference on the Future of Art and Design Education in the 21st century in celebration of 150 years of art and design at the University of Brighton.

Design Without Designers

Anne Burdick

Hello. The talk that I'm going to do today was initially prepared for a conference on the future of art and design education in the 21st century, held at the University of Brighton, in England. While speaking to a British audience, it became clear that my talk was really a rallying cry for the American design education community, none of whom happened to be in the audience at the time. So I'm happy to be able to deliver it here today where I hope to provoke educators into action—or at the very least begin a conversation.

As the Chair of the graduate Media Design Program at Art Center College of Design, many assume that I bring a tech-oriented vision of the future. But surprisingly, the design futures that I foresee are not informed by work with alpha technologies, industry research labs, or human-centered research. Instead it is the work I do as a designer in the realms of computational linguistics, literary science, electronic literature, and media theory and criticism that has given me a glimpse of what may lie ahead. Within these scholarly communities I find myself in the role of design ambassador to fields that are undergoing transformation due to changes in technology, culture, and theory. And it is this experience that has shown me the potential for a future world dominated by design but without a designer in sight. Spurred on by both fear and curiosity, I have composed the argument I bring to you today.

I'll begin with a bit of my own history. In the early nineties, I began to specialize in design and writing projects working with novelists, linguists—anyone dealing predominantly with *texts*. At the time, digital writing was just emerging—it was called net.art because the literary world didn't know what to do with it. It was the heyday of desktop publishing and hard-coded html. The digital writers I was working with were struggling to find a critical vocabulary to address the new electronic materiality of their writing. As a graphic designer, my training was in the visible and material form of language and so I became an advocate for the expertise of design and its relevance to this new work. Nevertheless, most of the literary discussion at that time touted the new capabilities of the author—thanks to the new digital tools, the writer could be a designer too.

In the years that followed, *net.art* became *e-lit*—or electronic literature—and e-lit became multimodal scholarship. Recently, a well-funded new trajectory has appeared called the Digital Humanities.[1] In the Digital Humanities, Humanities scholars have partnered with IT departments to develop new forms of digitally-based scholarly production such as open source journals, electronic hypertexts, short films, digital archives, information visualizations, and networked writing. Projects that were once dismissed by the traditional elders as net.art have moved to the center with institutional momentum. This is due, in part, to what some have declared a crisis of relevance: English majors are in decline, jobs for PhDs are scarcer.[2] It appears that the Humanities is casting about for a new model. A 2004 policy document released by the Association of American Universities titled "Reinvigorating the Humanities" recommends that academic leaders support, among other things, digital information and technology to imbue the Humanities with contemporary significance.[3]

And yet the recognition of designers in this new domain hasn't changed. Within the Digital Humanities, most scholars continue to design their own projects or to use research assistants or IT staff to do so. But the most troubling development is that these same scholars validate their approach by theorizing visual communication modes such as visual layout, the image, interaction, and multimedia with scant reference to the existing discourse within film, design, or the arts. In fact, most of the "design theory" that I come across in the Digital Humanities is generated by professors from English Literature, History, and Cultural Studies.

Each time I am confronted by this activity, I am left with questions. What circumstances would lead a Professor of Education to develop a theory of multimodal discourse that is explicitly built around concepts from design without ever mentioning the value or expertise of an actual designer?[4] Or how is it that a preeminent History Scholar would use motion graphics that his teenage son produced in After Effects as part of a scholarly presentation at a conference about the value of visual research?[5] Surely he wouldn't trust a high school student to do historical research or co-write a paper. Is it ignorance? Disciplinary bias? Not enough grant money? Or are designers to blame? Is our theory inadequate? Are the histories we have written relevant outside of our field?

A similar shift is taking place across the Academy, a shift that mirrors a trend within the culture at large. An array of disciplines have turned to design as a stimulant or a strategy for increasing relevance. Sometimes it's named design and sometimes it's called studio-based learning, multimodal scholarship, or media literacy. Whatever you call it, it's a version of design that can now be found within the Physics classroom, Education Theory, Ethnography and the Social Sciences, and, as we've seen, the scholarly production of Literature, Philosophy, and History.

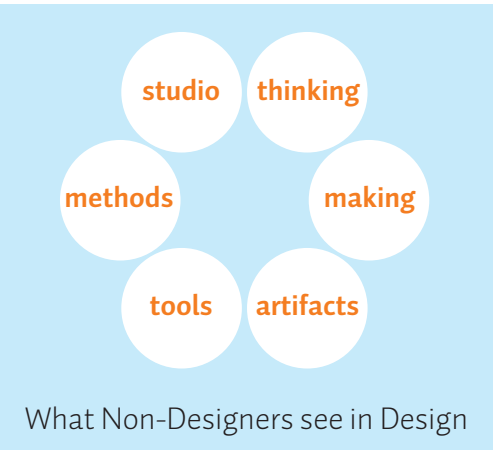
But it's in Business Education that the attention to design is the most pronounced. For some time now, academics, business leaders, and journalists have celebrated Design as the savior for failing corporations, the secret of savvy managers, and the resurrection of the MBA. In some circles, the evangelism for "Design" and "Design Thinking" is so strong that I've heard the 21st century referred to, a bit prematurely, as the "Century of Design."

But in the Century of Design, "design" is not the discipline that we know and love—that is, it's not the province of design practitioners, researchers, and educators. Instead, "Design" is variably a value-add, an everyday event, a working method, a byproduct, a literacy, and a complete abstraction. And frequently designers are nowhere to be found.

Rather than bemoan our absence, it is useful to explore what kind of future this interest in Design—but not designers—portends for design and design education. Is the notion of the practitioner steeped purely in design a thing of the past? Is our scholarship too little and too late or just in the knick time? Will a formal design education be required for fields of all kinds? And what of the act of designing itself—will it be at the center of an epistemological shift or will it be relegated to a low-level service?

What Non-Designers see in Design

Today I want to look at the confluence of forces that have brought us to this moment of spreading influence. In addition to the Digital Humanities, I will walk you through several other situations in which non-designers have incorporated aspects of design into their own fields. While I am aware that there is tremendous activity of this sort in the commercial arena, today I am focusing specifically on the work being done in the University. Design educators and practitioners who dismiss or ignore this activity do so at their own peril for each instance provides surprising insights into the power and definition of design while at the same time raising critical questions about our future.



What Non-Designers see in Design

The diagram shown here indicates the aspects of design that were identified through the case studies that I will share with you today. Starting at the top and working clockwise, **thinking** refers to the generative and propositional act of ideation; **making** is the intentioned manipulation of materials and the creation of things; **artifacts** are finished, refined outcomes; **tools** are anything from soldering irons to Photoshop; **methods** refers to the iterative design process and applied problem-solving; and **studio** is the model of collaborative working in small groups. Just to be clear, this is not my version of design, rather it represents what this particular group of non-designers have seen in design.

The case studies that follow are grouped according to how these aspects of design have been appropriated and put to use: Design as a Research Paradigm, Designing as a Way of Learning, Design as a Mindset, and Design as a Literacy. It is my hope that these frameworks will allow designers to see and understand design beyond its commercial applications.

Design as a Research Paradigm

In the Digital Humanities, design is practiced but seldom recognized as such. In contrast, there is emerging an explicit interest in design in the Social Sciences and Education.

Center for Ethnography @ UCI

The Center for Ethnography at the University of California at Irvine is currently running a discussion series called "Rethinking Ethnography as a Design Process." In a recent e-mail, the Director of the Center, Professor George Marcus wrote: "I have a personal interest in how the terms and practices of the studio process and design thinking might influence the way ethnography as a distinctive form of inquiry is taught.... In dialogues... the figure of the design studio emerges as the medium that might improve/reform the classic practice of ethnography.... But aside from this, there is quite amazing and diverse interest in design at UCI among several disciplines and programs."

In the last year, conversations like these are popping up all over the place. Frequently the interest in design marks a shift within disciplines that are reconsidering traditional methods in light of changes in theory.

Design-Based Research (DBR)

One such example is **Design-Based Research (DBR)** which has grown in the last two decades in tandem with the field of Learning Science. In order to develop more relevant and socially-based theories of learning, experimental and developmental psychologists have moved away from the isolation of the laboratory. Within the naturalistic research setting of the classroom, they are using the iterative, applied, problem-solving approaches used within design.

Learning Scientists use the word 'design' to refer to the planning and creation of learning situations whose components may include teaching materials, tools, technologies, curricula, educational

policies, social configurations, the physical environment, and specific teaching methods. A key aspect of this design-based approach is the progressive refinement of actual designs *in context* so that the outcomes are grounded in the complex and messy issues that impact learning in an actual classroom setting. While this is not a novel idea to anyone who is a professional designer, particularly for those involved in human-centered design research and co-design, it is a radical shift in the experimental science arena in which it lives.

On the website of the Design-Based Research Collective, a group of Learning Scientists dedicated to promoting what they refer to as "DBR," members frame their work thus:

> Design-based research views a successful innovation as a joint product of the designed intervention and the context. Hence, design-based research goes beyond perfecting a particular product. The intention …is to refine generative or predictive theories of learning. Models of successful innovation can be generated through such work—models, rather than particular artifacts or programs, are the goal.[6]

One of the most useful distinctions here, in my opinion, is success defined as "a joint product of the designed intervention and the context"—in equal measure. By considering every contributing factor in a situation as a designed aspect, whether social relationships or textbooks, DBR calls into question design pedagogy that emphasizes the artifact without adequately addressing the field of relations out of which meaning, utility, and value develop. At the same time, it demonstrates how design programs that disregard artifacts in favor of strategy and systems may have thrown out the baby but kept the bathwater. But the most significant aspect of DBR for designers is that it provides an argument for how *the act of designing can be used to generate new knowledge*—models and theories—not only within design but in other fields as well.

It is admittedly disconcerting to see terminology such as "design-based research" adopted so handily in another domain. But it is worth noting that these Learning Scientists face many of the same challenges from their more traditional colleagues that researchers in the field of design face when justifying their work to scholars from other fields: namely that design-based research is difficult to systematize and the outcomes may be so contextually-contingent that they can be problematic to generalize. DBRC members write about the difficulty of being both a designer and a researcher at the same time and the challenge of managing, isolating, and interpreting the massive amount of data provided by a real-world context. Nonetheless, Design-Based Researchers have turned to design as a direct result of changes in theory that call into question more controlled scientific methods.

Designing as a Way of Learning

Elsewhere within education, the studio-based pedagogy found within design and architecture schools has drawn attention from a range of disciplines and is being tested as a teaching approach in a number of experiments across the country.

TEAL Classroom @ MIT

Project-Based Learning (PBL)

Design-Based Learning (DBL)

MIT now houses all Introductory Physics courses within their **Technology-Enhanced Active Learning (TEAL) classroom**. In response to criticism about the poor teaching of science in the United States, MIT shut down their 50-minute, 300-student lecture classes and replaced them with smaller classes of 80 students solving problems in small groups as a way to understand the principles of Physics—with documented success.[7]

Within the field of Education Theory, the hands-on making activities of design are a natural fit with the pragmatic, applied, student-centered learning theories of John Dewey as well as the object-oriented pedagogy of Friedrich Fröbel and Maria Montessori. Building off this prior work, **Project-Based Learning**, also called PBL in the States, is a teaching approach that uses hands-on projects across a variety of subjects to engage students and build upon their pre-existing knowledge of the world. Proponents of PBL claim that it helps develop high level critical thinking by incorporating the manipulation of materials, work in small groups, complex problem-solving, and oral and language acquisition skills through discussion, presentation, and critique.

Within PBL is a strain called DBL, or **Design-Based Learning**, developed by Professor Doreen Nelson within the School of Education at Cal Poly Pomona. Nelson has been developing DBL for years, based in part on her early experience working in the office of Charles and Ray Eames and by watching her brother, Frank Gehry, in the architecture studio.

DBL emphasizes the use of everyday materials such as pipe cleaners, toothpicks, or cardboard. DBL intentionally avoids digital technology and de-emphasizes the aesthetics of the finished artifacts, focusing instead on how students use materials to solve problems and communicate their ideas. Another significant concept is NBS which stands for "Never-Before-Seen." Teachers use NBS to

encourage students to develop solutions directly from project criteria rather than through mimicry of something they already know. Within DBL, invention is key to learning.

Now I'm going to show you a short clip from a video that documents a years' worth of work by sixth-grade students at the Arts and Enterprise Charter School. The students created a Never-Before-Seen Civilization—meaning they built a scale-model city—that was integral to their work in Math, Social Studies, English, and Science. As you watch this video, you will see how the curriculum is woven throughout the projects.

Click on the image to play movie. (3:10)
View the full video at: http://video.csupomona.edu/DNelson/SixthGradeOpus2008-245.asx

As you can tell by the composition of the photographs, the emphasis is not on the finished artifacts but on the students' learning and the activities that make the artifacts meaningful. Design-Based Learning allows us to see one of the most powerful aspects of design: the act of designing as a way of knowing. DBL gets at things that we as designers take for granted and seldom articulate: the agency of building and making, the power of objects to embody ideas and as tools for understanding the world, and, as we saw within Learning Science, the way in which our material artifacts sit within a complex matrix of concerns and modes of knowledge.

Within DBL, high level critical thinking relies upon the manipulation of materials to address a situation-specific problem. It is learning by doing, in which thinking is integral to the act of designing.

Design as a Mindset

By contrast, I'd like to look next at "Design Thinking" which has become tied closely to the innovation trend in Business. While there are many designers and design educators in the States who have built consultancies and programs around this notion, today I'd like to focus on how this idea is being used within business education, specifically within the Masters of Business Administration degree.[8] As with the previous examples, my point here is to see what we can glean from the way in which a specific aspect of design is considered relevant to those outside of the design world.

Roger Martin is the Dean of the **Rotman School of Management at the University of Toronto** and is one of the most outspoken critics of traditional business school curricula. I am going to share a clip from an interview with Martin in which he contrasts the dominant mindset in business with his version of Design Thinking. This video was put together for a small conference called "Overlap 07: Exploring new methods for business and innovation." The clip begins with Martin responding to the question: "why is there an overlap?" which refers to the overlap between business and design.

Click on the image to play movie. (2:41)
View the full video at:
http://www.youtube.com/watch?v=vJydmtRI-Zo

Martin uses the idea of Design Thinking here to encourage business managers to shift from an analytic mindset to a generative, creative, and risk-taking one. Martin has identified within design a way of operating that he believes is more relevant to the messy realities of people, and, as a result, is more effective in the real world.

So what are the implications for those of us engaged in the field of design?

First, Martin's comments provide an argument *against* design education that attempts to move design closer to empiricism and analytics, and argues for design to be all the more design-centric. But what is "design-centric"? Which aspects of what we do are quintessentially "design"? Is it the thinking, by which Martin appears to mean a kind of brainstorming approach to problem-solving? And if so, what of the artifacts and the making, the dominant activity that designers have historically undertaken to engage with the world?

The term "Design Thinking" originated in an academic context from research into the cognition peculiar to designers.[9] In the commercial world, it has become an easily-branded turn phrase that designers have been quick to use to place themselves at the center of the innovation trend. One of the most troubling outcomes of this uncritical adoption is the way in which the term has been used within the design community itself to establish a hierarchy between designers who operate strategically—ostensibly at a *higher* level—and those who do actual making and are considered to be merely "hands" whose work takes place "further downstream," to use Martin's words.

Design Thinking sits squarely in a Cartesian world of divided minds and bodies in spite of the fact that recent advances in evolutionary theory and cognitive science point to the inseparability of what is called the "hand-brain complex."[10] Furthermore, the *embodied act* of "designing" is reduced to the *abstract concept* of "design." As such, Design Thinking misses one of the most powerful aspects of design that was brought to life in the Design-Based Learning work we saw earlier: *the hands-on creation of material culture brings a depth of knowledge and understanding that cannot be achieved otherwise.*

The second, and perhaps more promising implication of Martin's comments is the way in which he positions a design mindset in opposition to a scientific one, which echoes what we heard from the Learning Scientists using Design-Based Research. Could it be that we're seeing early indications of a larger paradigm shift with design at the center? The interest in design methods comes predominantly from those working in disciplines with a social dimension for which quantitative scientific methods are proving to be inadequate. Are we witnessing the emergence of a new approach to research and knowledge? Or simply a passing trend?

Design as a Literacy

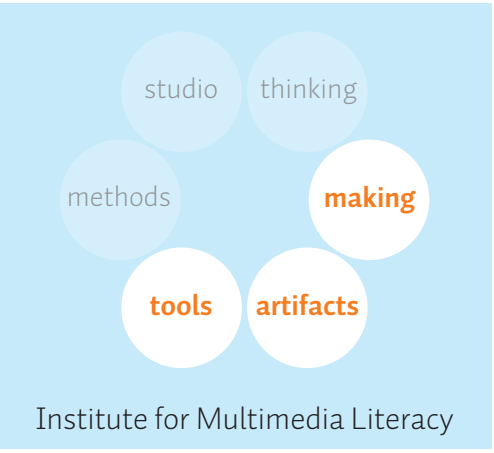
With digital technology, the tools and artifacts that have historically been the domain of the design profession are also up for grabs. The first desktop 3-D printer hits the market later this year. The young people who have grown up with computers, videogames, the internet, and cell phones are called "Digital Natives" by educators in the domain of "Digital Learning."[11] This cohort is believed to be genuinely different from previous generations in terms of social practices, learning styles, and even cognition, due to their early and constant engagement with information technologies. Digital Learning calls for a radical reworking of pedagogy in order to accommodate learners who are bricoleurs: they can piece together information from multiple sources, are intuitive visual communicators, have strong visual-spatial skills and learn best through inductive discovery.[12]

It is this generation that a 2005 report called "A Global Imperative: The Report of the 21st Century Literacy Summit" was designed to address. Produced by the New Media Consortium, the report defined 21st century literacy as:

> ...the set of abilities and skills where aural, visual and digital literacy overlap. These include the ability to understand the power of images and sounds, to recognize and use that power, to manipulate and transform digital media, to distribute them pervasively, and to easily adapt them to new forms.[13]

In other words, 21st century literacy is the ability to design.
So why aren't designers leading the 21st century literacy discussion?

Initiatives in digital learning, also called "multimedia literacy," are thriving across the U.S. With the stated goal of providing "skills needed for the 21st century," advocates tend to come from technology-related fields or from learning and literacy which are the domain of Education and English.



The Institute for Multimedia Literacy (called the IML) at the University of Southern California (USC) is one of the leaders in the field of digital learning, with multi-million dollar research grants and a campus-wide mandate. Nonetheless, the directors of the IML have to tread lightly—they are promoting a new approach to professors and even students who still privilege the text and who remain deeply suspicious of the commercial affiliations held by images and other popular media forms. In order to promote the "radical reworking of pedagogy" that is called for, the directors of the IML, who hold PhDs in English Literature, Cultural Studies, and Film Studies, have admitted in conversation that they must

intentionally avoid the word "design" due to its negative connotations. *Design is seen as additive and most designers are seen as valuing aesthetics over content.*

Now I'm going to share with you a promotional video from the IML's website. Pay close attention to their language. As we've seen with the previous examples, the rhetoric can be as instructive as the activity itself.

Click on the image to play movie. (2:05)
View the full video at:
http://www.youtube.com/watch?v=qh95uMl7W_o

So, as you heard, these students are not practicing interface design or filmmaking or even media design; these students are "doing multimedia." To a media designer like myself, it's as if writing had been called "doing paper." But this shift in emphasis is not all bad. In the video, the students are positioned as authoring, producing, presenting, and displaying. "Doing multimedia" is pitched as both a way of working that is in synch with students' daily lives and as a mode of understanding. But *the most important distinction is that by "doing multimedia," these students are making knowledge.* There are few designers who would identify their own work as the production of knowledge, though I would argue that they should.

Media Arts Initiative @ LAUSD

Now let's look at a program that is not situated within digital learning but that shares many of the same features. **The Media Arts Initiative** sits within the Arts Education Branch of the Los Angeles Unified School District (LAUSD). Its stated goal is to establish what it calls Media Arts as a content discipline alongside Dance, Theater, Music, and the Visual Arts. The program is meant to expose students to the artistic foundations of new media through new and non-traditional teaching methodologies. These methods include: physical and virtual learning spaces; project-based student work; peer-to-peer knowledge sharing; collaboration, critical thinking, multi-modal skill sets, etc., etc.[14] We've heard this all

before but this time it comes from one of our own. The program head is Dain Olsen, who holds both a Masters in Fine Art and a Teaching Credential, the typical background for a Media Arts instructor.

You can hear in the language that the USC and the LAUSD programs share many of the same goals, strategies, and claims. But the LAUSD initiative lives in the realm of design and the arts, which may be its undoing. The *21st Century Literacy Report* that I cited earlier identifies the erosion of the arts in school as a key obstacle to reaching its goals. It reads: "… concern over student performance leaves little room for 'extras,' as visual and media arts are often perceived to be. A failure on the part of policymakers to understand media and the arts compounds the problem."[15] Therefore the Digital Learning community advocates moving multimedia production to the center of the curriculum.

While pitching multimedia as a literacy rather than an art may be a practical move, it has wide-ranging and nontrivial implications, the most prominent being that it moves multimedia back into the purview of educators rather than of artists and designers. Multimedia literacy is a movement that carries with it a sense of inevitability, or at least momentum. As it proliferates throughout the educational system, will a design education still be necessary? Shall we expect to see a more sophisticated understanding of the power and capacity of design to produce knowledge? Or will we have to undo 12 years of bad pedagogy?

I would say that we don't want to wait to find out. While many have pointed to the proliferation of digital tools and DIY culture as a threat to professional design in the past, it is the institutionalization of multimedia form-making within general education that is a far more complex and pressing issue. Not because it is a threat but because it is an opportunity. As we work to develop the discipline of design, it is important that designers participate in contexts outside of commerce in order to explore the fuller dimensions of what design can do. Both the LAUSD and the USC projects are built upon the ability of design to meaningfully form new ideas. With the right design scholars and researchers—perhaps designers with PhDs—we could enter this arena in partnership with educational specialists to address multimedia as both a literacy and an art, and strengthen design in the process.

What Designers see in Design

In all of the examples that we've seen today, the interest in design, whether stated explicitly or not, sees design and designing as a powerful way of operating that is in synch with emerging theories, that signifies a shift from scientific traditions, and that aligns fields with new technologies and cultural practices. In other words, *this thing called design appears to be well-suited to address our current moment*.

So it's worth asking, what do Designers see in Design? On January 5, 2009, a group of leaders from the professional organizations of design who call themselves "The American Design Communities," presented a document to the U.S. Congress called *Redesigning America's Future: 10 design policy proposals for the United States of America's economic competitiveness & democratic governance*. This is the first document of its kind in two decades. The U.S. has had no national design policy nor governmental support body since the Carter administration—this is clearly a significant step forward. The proposal was supported by every major design organization from the AIA to the AIGA. It begins thus:

> Design serves to advance the goals of the United States' economic competitiveness by saving time and money and simplifying the use, manufacturing, and maintenance of goods and services. It enhances democratic governance by improving the performance and delivery of government services.[16]

So here we are—*Design*—possibly at the center of some kind of cultural revolution or major paradigm shift and the best that the "American Design Communities" can do is to pitch design *as a service?!*

In the United States in particular, design's rhetoric and self-definition has centered around its relevance to commerce. Design students are seldom taught to recognize or articulate their own unique expertise outside of their value to business. Our emphasis on design as a profession rather than as a discipline has left us without the scholarship that validates other fields. Our inability to advocate for design in larger terms excludes us from discipline-defining, knowledge-producing, and policy-generating activities, especially within research, education, and government.

Imagine how different the *Redesigning America's Future* document might have been if its' definition of design was not the packaging of products, goods, and services, but rather the shaping of culture, knowledge, and the human-made world, including commerce?

This is why I am addressing my argument to educators. The academy is where a field is not only theorized and developed, but where the foundational assumptions of its new

practitioners are built. The way in which design educators respond to this, "Design's Big Moment," is critical and will help determine the role of designers in the so-called Century of Design. For as we have seen, design expertise has increased in value at the same time that it is proliferating far and wide, eluding many designers along the way. I find this both exciting and terrifying at the same time.

Notes

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