

Milwaukee Institute of Art & Design  
273 East Erie  
Milwaukee, Wisconsin 53202

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Rhode Island School of Design  
Providence, Rhode Island 02903

Digital technology enables designers to physically create almost anything imaginable, yet students still need to critically consider and evaluate their communication design in the context of metaphoric, ethical, historical and paradigmatic perception. Students must engage in processes of critical analysis with regard to their work. They must be taught to evolve contextually based criteria regarding why they accept what they accept, and why they reject what they reject. Without this background, they are slaves to technology.

An example of a studio project designed to help students: 1) utilize the digital environment to organize typography and images that represent the socio-political context their solutions were required to identify, and 2) explore the empirical variables that help their readers to access and effectively contemplate the content presented by their text is discussed.

Michael Gibson

Teaching  
Critical  
Analytical  
Methods  
in the  
Digital  
Typography  
Classroom

## communication design roles in transition

Communication designers entering the profession in the next five years or so will have to facilitate communications between and interact with more people outside their discipline than any previous generation of design practitioners. Their careers will demand that they imbue themselves with the wisdom necessary to consider the ramifications of their decisions from many different peoples' viewpoints without losing sight of the communication objectives they set out to achieve. To do this, they must identify the features of other disciplines that can positively contribute to their work, while they simultaneously apply their unique sensibilities about how readers process and interpret visual information to situations that have not historically called for participation from communication designers.

We possess an array of core competencies that enable us to structure visible words and images so that we can convey meanings between diverse groups of people. The fact that we now use digital technology to enhance our ability to synthesize and evaluate our ideas (and the structures that signify them) should enable us to more pro-actively shape our contribution to the information society of the future. However, this can only be achieved if we teach future designers how to use the technology available to them to augment

and assist their decision making processes, and to help them initiate and manage change (as opposed to merely reacting to and implementing it).

What a communication designer is may still be best defined by what he or she does and has done. This qualification does little to clarify any understanding about how we might better identify (and thus better explain to non-designers) the essential nature of our discipline, but it provides us with a very flexible means to prove the value of our work to those who question its significance by allowing us to tailor and apply our unique abilities to organize and convey visual information to their specific concerns. We need to exploit the lack of a central definition of communication design (or graphic design) as a means to describe the different ways we can collaborate with people from almost any discipline to help them communicate their ideas and objectives to their intended audiences and to each other. The significance of what we do needs to be presented in terms of how our participation in a given project can facilitate and enhance understanding across disciplines. If we cannot do this, and we cannot educate our students to do this, we will continue to foster an ever-growing misperception about what communication designers do and what our collective future might be. We must actually be able to design on the computers we use to execute our work, and so must we teach our students.

We're increasingly viewed as mere information 'filters'<sup>1</sup> who fit our work into social, cultural and commercial contexts that have been defined for us by others who are perhaps less technologically

<sup>1</sup>From a lecture by Graphic Design Education Association (GDEA) president Anne Bush at the GDEA international conference in Edmonton, Alberta, Canada on August 11, 1995.

competent but more strategically minded than we are. Understanding how to apply photographic filters and how runarounds and layered text boxes work in page layout programs has tended to supplant knowledge (much less wisdom) regarding how typography might be most effectively structured to first attract a viewer's attention and then clearly and concisely convey the necessary information to that viewer. Students increasingly produce work that reflects a remarkable understanding of how graphics applications software works, and a paucity of understanding regarding how their work should function in society. They don't (or won't) see their work as a means to initiate and manage cultural, political and economic change, to modify and inform public opinion or to help facilitate the process of communication between a given client and a particular audience. Instead of seeing themselves as designers of communication strategies whose decisions may allow others to meaningfully interpret and manage new data, they increasingly limit their responsibilities to the tactical manipulation of technical form. The need to efficiently use graphics applications software and the need to engage in effective critical thinking simultaneously seems to be lost on many students (and many professionals as well). When this type of efficiency wins out over effectiveness, the end users, the audience,

suffer the consequences — they cannot interpret the essential meaning of the information intended for them, which means they didn't feel, they couldn't learn and they weren't able to consent to do whatever the designer's client suggested they do.

## classroom example

I recently ran a project in a third-year studio course that required my students to design a paginated publication for a hypothetical exhibition of the so-called "Degenerate Art" exhibition at the Milwaukee Museum of Art. Before they were allowed to begin to explore the issues of page structure, margin proportionality or typographic configuration, they were required to write a two-page criticism of the specific works by an artist of their own choosing that appeared in the show. Their charge was to write from the official Nazi-sanctioned point of view, and condemn the work they'd selected based on Ziegler's and Hitler's criteria as to what constituted bad art. This critical experience became a metaphoric 'starting point' that could help them structure solutions that would generate empathic support from their audience for freedom of artistic expression as they simultaneously communicated the history and historical context of the show (along with logistical information about the show's manifestation in Milwaukee). They were shown how to use master pages, style sheets and image libraries as the physical means to help them explore and organize an extremely diverse array of page designs and typographic structures.

Given both an intellectual orientation and a digital craft basis, they were then encouraged to duplicate their initial page structures several



Figures 1 and 2  
Preliminary structural  
studies combine images  
and type for the  
introductory spread.  
Also shown are  
preliminary studies  
of the diagram  
depicting the fate  
of the artists whose  
work appeared in the  
exhibition. These were  
presented at the initial  
process critique at the  
beginning of week two.  
Students:  
B. Kaminski  
C. Guizetti



times and then change their margins and the proportions of their page architecture.

Placement, alignment and the physical texture of their text and imagery were subject to continuous change. I wanted them to engage in a project that would allow them to use the flexibility of the digital platform to experiment with several design strategies as they worked toward creating their final projects. Encouraged to sketch both inside and outside the computer, to print-out often and then cut up and rearrange the elements in their print-outs and to scan-in and manipulate a wide variety of image material, the students confronted the malleability of the digital context.

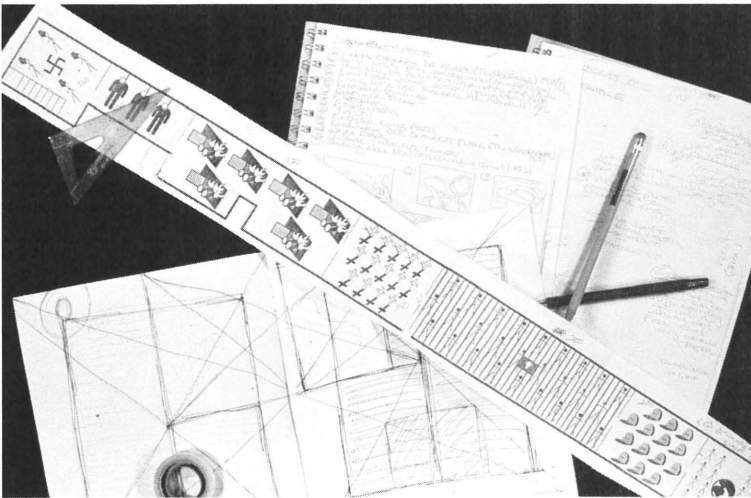


Figure 3  
Various digital and hand-rendered developmental sketches for a diagram depicting the fate of the artists whose work appeared in the exhibition. Also shown are hand-rendered layouts for the concluding spread. Presented at the beginning of week three. Student: C. Guizzetti



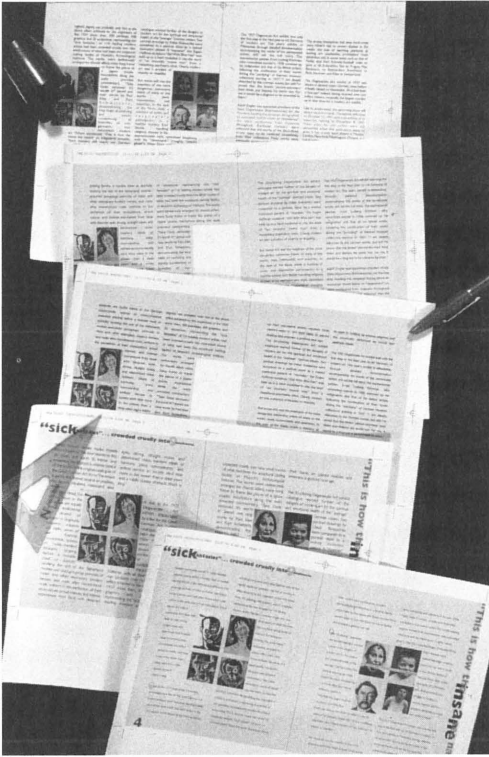


Figure 5  
Printouts depicting  
the effects of  
various typographic  
variables on a  
page-spread  
describing how the  
work of the so-  
called degenerate  
artists was  
compared to the  
work of the insane.  
Presented at the  
beginning of week  
three.  
Student:  
C. Guizetti

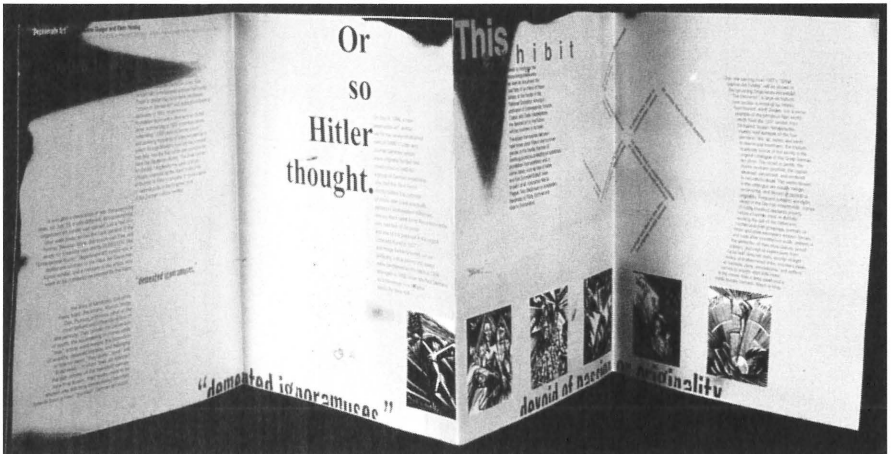
Figure 6  
Printouts depicting  
the effects of various  
typographic variables  
on a page-spread  
describing how the  
work was displayed  
in Munich in 1937,  
and how it was received  
by the contemporary  
critical establishment  
in Europe. Presented  
at the beginning of  
week three.  
Student:  
C. Guizetti



## the communication situation changes

The fact that we now refer to ourselves (and hopefully to our students) as visual communication designers might imply that we've come to better understand the general intentionality of the things that we create. Our intended audiences are supposed to be motivated to consent to some sort of identifiable thought or action after they've encountered or "experienced" our work. They're expected to come to some sort of tangible understanding regarding the subject matter presented to them. Sometimes (but not always), this means they actually have to be able to read something. However, just because someone who is not a visual communicator reads does not guarantee that she will understand what she has read. This matters much less for her at the end of the twentieth century than formerly, as long as she has at least been presented with "the information" to begin with. This is due to our fascination with obtaining and possessing information — this has become more important than actually using it as a means to gain new knowledge.

Figure 7  
Final  
presentation  
of accordion-  
folded  
brochure at  
the end of  
week four.  
Student:  
B. Kaminski







Computers now allow designers a logistical freedom to manipulate type and imagery that literally did not exist before 1984. You can engage many computer-literate designers and design students in heated discussions concerning exactly when the information-world changed (the date they cite usually coincides with the introduction of a particular version of a piece of software). However, if you really want to engage a roomful of computer-literate designers (especially students) in a debate that could lead to a shouting match, ask them how important it is for the text that they manipulate to be readable, to be legible. Immediately after you pose this question, ask them to define the meanings of the terms readability and legibility.

This will force them to engage in critical thought. Some of them may justify the treatment of text based purely on its visual texture as a reflection of how much more visually literate our society is today than it has been at any other time in our history. Some of them may feel that truly illegible text cannot exist because it is necessarily comprised of letterforms (which are supposed to be inherently legible).<sup>2</sup> “We don’t read text typography the way we used to — we read into the overall context that the type appears within.”<sup>3</sup> Conversely, some of them might tell you that a competent designer should be able to communicate anything with only one well-structured typeface working within a simple, concise composition.<sup>4</sup> Regardless of their response, they need to be made aware of just how much (or how little) of the content or ideas in their responses are framed within the

<sup>2</sup>Peter Mertens argued that illegibility cannot and therefore does not exist in *Emigre* issue number 15 in 1990: “If they are not legible, then they are not letters...”.

<sup>3</sup>Jeffery Keady stated this in his commentary titled “Graphic Designers Probably Won’t Read This... But”, which appeared in the book *Emigre: Graphic Design Into the Digital Realm* by Rudy VanderLans and Zuzana Licko with Mary E. Gray, 1994, Van Nostrand Reinhold Company.

<sup>4</sup>David Carson made this statement in a critique of senior-level undergraduate graphic design work at MIAD on November 2, 1995 in response to a question by a student regarding what Carson thought “...were the most important things design students should learn about working with type.”

working parameters of a software program or an operating system, or what can be most easily downloaded off of the web. You can't imbue a computer with a critical analysis algorithm, and software provides us only with the physical means to an end. Designers think; computers allow us to do.

Communication design students need to enter the digital classroom with a thorough understanding of what it means to facilitate communications. People hire us to help them disseminate their ideas or to help their ideas be perceived precisely the way they want them to be perceived. In order to do this, we must ensure that the messages from our clients are clearly understood by the people our clients want to communicate with. Students need to be taught the value of asking why a given message is used in a given context instead of asking only what the message should elementally consist of. Communication designers achieve success only when the bridges they build between gaps of understanding connect at both ends.<sup>5</sup>

If students in digital classrooms are not challenged with structuring typographic systems that support the metaphoric and paradigmatic content — the rhetoric of what has been written — they are easily subjugated by the purely technical demands of whatever software they have learned to use. Learning software requires patience,

<sup>5</sup>I posted this statement from Andrew Tomczik (a design educator at York University in Toronto) in large orange letters on the bulletin board in our computing lab at MIAD at the beginning of last semester. Professor Tomczik made this statement in a lecture he gave at the GDEA international conference in Edmonton on August 12, 1995.

diligence and many hours devoted to learning the specific effects of particular causes. It does not require strategic thinking or any understanding of how human beings recognize and process visual information, nor does it require any cognizance about how we visually navigate (or fail to navigate) through textual information.

It is important to consistently challenge students working in the digital environment with situations in which they must resolve structural issues empirically regarding their usage of typography so that they come to understand both the virtual and the physically tangible effects their structural decisions have on their readers. Target audiences still need to understand what visually excites them — to “get” what the writer and the designer want them to “get” — to extract the relevant information. This process of interpreting meaning “is a genuinely creative act, one that demands judgment, good sense and aesthetic discernment. In the last analysis, it is the reader, not the writer or the designer, who is the ultimate arbiter of the implications of a text.”<sup>6</sup> Whether the grid is undermined with subtle variance in baseline structure or fractured letterforms, or used to structure every single spatial relationship on the page, design students must still develop a working understanding of why grids exist, how they have evolved and devolved. Students need to discover how typographic structure can afford the reader the opportunity to engage in whimsy, to be surprised and to challenge and satisfy curiosity *without being annoying or obtuse*. Issues of chronology, placement, size, weight, alignment (or the lack of it), leading and column width still deserve to be

<sup>6</sup>Veronique Vienne, from her article “Soup of the Day” in *Metropolis*, March 1995, 1995, Bellerophon Publications, Inc.

<sup>7</sup>From “Freedom by restrictions: The functionality of visual variables” by Paul Mijksenaar, *Table 12*, 1997, Bureau Mijksenaar.

considered before any steadfast decisions regarding typeface choice is made.<sup>7</sup> Educating students about typography in the digital environment gives them access to an extremely flexible and accessible means with which to explore these issues. Sensitizing our students to the need to design with regard to these structural variables as they engage in manipulating software is one of our primary responsibilities as design educators working in the digital environment.

Here's a question I pose to students in my digital classrooms on a regular basis: is typography rendered illegible if it is presented in a visual environment that makes the viewer work so hard to make any sense out of it that she decides to forego her attempt to process any of the information? Rudy VanderLans (editor of *Emigre* magazine) says that if you can't read the text, you're probably not part of the intended audience.<sup>8</sup> I say if you can't read the text — you can't read the text.

Many designers who have spent their entire careers manipulating text on a computer think that typographic conventions such as flush left alignment, leading that increases as column widths do and not allowing column widths to exceed two-and-a-half lower-case alphabet lengths exist entirely because of the mechanical limitations of linotype machines. This is only a half-truth: research by James Hartley, Betty Binns, Ruari McLean, Robert Bringhurst and Stanley Morison concerning how humans optically perceive text most effectively also supports these conventions. It is possible for letterforms to be illegibly rendered if they appear in a context

<sup>8</sup>Veronique Vienne, from "Soup of the Day" in *Metropolis*, March 1995, cited the following quote from VanderLans: "People who complain about not being able to read the type are usually not the audience the piece was destined to reach."

where we cannot discern their physical structures clearly, hence the reading situation must be considered.

## **the legacy of the pre-computer past**

For many designers, gaining working knowledge of how to effectively structure typography has been elevated to an almost metaphysical intellectual status that can be likened to the process of being accepted as an acolyte into an exclusive scientific or religious order. Understanding how typography works (and how it doesn't work) is supposed to take years of rigorous investigative study and a great deal of mind-bending and soul searching analysis. Before the introduction of the computer and graphics applications software, one had to be able to specify type and cut and paste galleys and be able to draw well enough to evaluate design decisions before getting type set. "Lack of hand skills" and "poor physical craft" could prohibit advancement in design school, limiting design to nothing more complex than four pages or two colors. One couldn't fake it.

The pre-computer logistics of designing with type and then dealing with its physical implementation were supposed to ensure (among other things) that all of the critical empirical and metaphoric issues in a solution were resolved before energy was invested in

laying it up. This process also helped designers gain a very thorough understanding of the context that the work was being created to fit into, or fulfill or change. The deliberateness of design decision making reflected not only intellectual reasoning, but the sheer tactical challenge of implementing whatever had been decided upon. Designers were responsible for copyfitting, or correctly calculating exactly how much space a given amount of text would occupy when set according to typographic parameters such as the number of characters per pica in a given typeface set in a particular size, leading, column width and column depth. The typesetters who set text into type acted upon specific instructions which had to be very clearly written according to a set of stringent guidelines. Correcting typos meant resetting galleys, and typeset copy that ran too short or too long often meant resetting entire pages, spreads, or sometimes even entire jobs at tremendous cost to both the designer and the client. Mistakes in typesetting weren't just inconvenient — they could wreck the budget for an entire project.

Many communication design educators who are either currently teaching in or administrating undergraduate and graduate programs around the world were educated in an era where stretching or condensing an existing typeface was unthinkable, not entirely because it might be aesthetically unsound, but also because it was logistically so difficult to do. Setting type photographically or in metal required designers to consider the structure of the type they designed in terms of what they could directly, physically manipulate. Adjusting kerning and leading meant

manipulating wooden or metal slugs or cutting slicks apart and pasting them back together again very carefully. Working with type required the patience and the kinesthetic sensibilities of a craftsperson combined with the aesthetic and emotive sensibilities of someone who was very sensitive to the nature of how humans engage in the process of reading. Communication design students were challenged to gain working knowledge of the interdependent relationships between (for example) column width, leading and type size while they simultaneously were challenged with having to master a set of extremely well-honed handskills. This culture bred designers who cherished type as much as they actually used it. They cuckolded typographic understanding close to their hearts so that it might vivify their souls.

### **the challenge of the computer-based present**

Some of them currently guard this understanding from those who know how much RAM they need to run full motion video at 1152 x 870 ppi in Adobe Premiere, but who pronounce “Bodoni” “BoDEEni”, and who think Aldus Manutius actually founded the software company that (until its merger with Adobe) bore his name. These new digitally literate threats to modernist order never had to learn how to specify type, and they probably won’t ever be chastised for not knowing that Century Schoolbook is an Egyptian font. But they do know how to execute work that they can get to press or into kinetic media, and in a culture that increasingly places not just a monetary but a philosophical premium on efficiency (versus effectiveness), they will continue to thrive regardless of whether or not they evolve

creatively. Students need to be sensitized to the danger of being perceived merely as technological gurus: their sheer competence in the digital environment can dictate a career path that confines them to being the implementers of other people's decisions. Good hackers too often become the reactionary minions of those who understand the cause and effect of well-choreographed propaganda better than the hackers do. Digital technical skills should augment (rather than account for) a designer's ability to allow technical form to signify content. I encourage students in digital classrooms to discuss their design ideas before they talk to me about issues pertinent to the workings of specific software, so that they understand the need to conceive effective solutions *before* they fire up their computers. This ensures that the work they create in the digital environment will be rendered of software, rather than rendered about it.<sup>9</sup>

No computer is artificially intelligent enough to run cognitive dissonance, critical analysis or gestalt evaluation software. Also, let's not forget that before the onslaught of digital technology, it was impossible to render and evaluate ten completely different typographic configurations for a spread in less than an hour or decrease the leading for the text in an entire document by three-quarters-of-a-point simply by clicking your mouse two or three times. Digital prepress has necessarily (and happily, in my opinion)

<sup>9</sup>Excerpted from a conversation between myself and Ron Bitticks (Professor in Painting at MIAD) in March of 1996. Bitticks referred to a dialogue that took place during a critique of his senior-level students in which he discussed the importance of producing paintings that were of the paint they were painted with, rather than about the paint. I replied that my communication design students often struggled with a similar dilemma regarding the software they used to execute their work.

replaced manual keylining. Getting a duotone to look exactly like you wanted it to (so that your well-considered metaphor would be even more apparent) used to be a guessing game, a crap-shoot with the dice loaded against you. It is now possible to tint the most minute surface areas within an image in almost any array of hues. (So-called photographic evidence is no longer admissible in many state courts because of the image manipulation skills possessed by many second-year undergraduate students.)

Visual communication design students do have to learn the intricate workings of various software programs to execute much of their work today, and the breadth of what they can actually execute is vast, but they must also learn how easy it is for them to create work that cannot be successfully reproduced or easily downloaded. Designers now must assume a much greater responsibility regarding the physical preparation of their work for raster image processing, or for Internet transmission or for configuration in a kinetic multimedia environment. And the visual messages they create still have to be interpretable by their readers.

Having working knowledge of a broad array of graphics applications software does not guarantee that a student will use it to design efficiently or effectively. As a communication

design teacher, I am as responsible as I have ever been for ensuring that my students learn how to structure both a modern and a traditional book page. But since 1992 I've taught them to use page layout software to evaluate the proportional relationships between page margins and the shape and placement of narrative text by utilizing devices such as multiple master pages and primary and secondary guidelines. I often ask students in my digital classrooms the following question: does your page architecture and your typographic configuration support the essential meaning inherent in the assigned text? I then remind them that just because they can manipulate software to achieve a "special" visual effect does not necessarily mean that they should. Using software to blur, distort, smear, smudge or fracture letterforms and imagery for the sheer technical thrill of doing it is fun, and can be stimulating, but it is not designing. If a student designer's idiosyncratic sense of typographic whimsy and exploration is all they are challenged to explore in the digital design classroom, they probably won't fully come to understand their responsibility to their client and their audience: their "bridges to effective visual communications" may be visually interesting, but they won't connect at both ends.<sup>10</sup> This caution is not intended as an absolute rejoinder against using the inherent flexibility of the digital platform as a means to redefine the aesthetic parameters for how we perceive type; it is merely a reminder that if students come to view the potential of the platform predominantly in this context, they run the risk of creating work whose physical form does not signify its content and therefore fails to communicate. They will also miss the opportunity to employ the incredibly malleable potential of the computer as a conduit through which they can

<sup>10</sup>Please reference footnote 5.

exchange meaningful information with people working outside their discipline and evolve into the critically informed communication facilitators and strategic planners that the next century requires.

If students can be taught to use the digital platform as an environment within which they can engage in the process of planning communication strategies, they can also begin to teach themselves a variety of means for obtaining new information and how to use it once exposed to it. As educated critical thinkers who understand not just the functionalities of graphics applications software, but its potential for helping them learn how to learn, they will become empowered, pro-active visual communicators. Students need to be taught to utilize computers both as tools and as mediums within which they can develop a broad array of critically well-considered personal voices or visual languages. In this way, they become technologically competent without losing sight of the fact that their ability to manipulate software does not absolve them from the responsibility of engaging in the process of strategic thinking. If the digital platform is presented to them as an organizational tool, as an extremely fluid means to plan visual communications and organize typographic structures, students will become sensitized to the need for

them to contextually synthesize, analyze and evaluate their own work beyond a level that is merely technically adept.

It is imperative that communication design students in digital classrooms are challenged with design opportunities that are process intensive (as opposed to opportunities that are primarily task-oriented). In this way, they become familiar with how various decision-making methodologies can help them establish the criteria necessary to evaluate the progress of their work; they can develop and come to trust their own, personally derived sets of design parameters. For this to happen, students must at least temporarily be released from the anxiety that comes with being forced into a performance-based production (“A+”) for every assignment. They must be allowed to exert their energies toward becoming competent designers, who are aware of the contexts that their work must fit into (or challenge), as opposed to designers who are merely adept at producing objects according to someone else’s instructions. Failures need to be celebrated as much as successes, especially if planned, calculated risks were taken from which the student gained critical insight.

**Michael Gibson** is an assistant professor of communication design at the Milwaukee Institute of Art and Design in Wisconsin. He is also a principal of Gibson Clarke Design and Brand X Design in Milwaukee. Utilizing the digital design environment in his own work since 1986, he began using it as a teaching tool and in his pedagogical research in 1991. Other research interests explore how compositional structure and typographic variables can be used to enhance English-as-second-language acquisition and comprehension among native Spanish speakers. He holds an MFA in Graphic Design from the University of Michigan. He can be contacted at: [mgibson@mixcom.com](mailto:mgibson@mixcom.com).