

Design as Communication

The Increasing Case for Literacy in Academia

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Abstract

The profession of industrial design faces unprecedented challenges in the next decade, including a dramatic increase in off shoring and outsourcing of manufacturing, a continual drive for lower consumer pricing in the United States, and an increase in complexity of design specifications as products become smaller and embedded with more and more technology. Design education struggles to adapt, often teaching the same skills associated with Bauhaus education: model making, rendering and other “form giving” techniques. While many undergraduate programs in the United States have evolved to address issues of manufacturing technology, assembly and human factors, very few educational programs aggressively address issues of English literacy; it is usually assumed that students will have gained a solid understanding of spelling, grammar, writing and sentence structure in their K-12 education. Unfortunately, this is rarely the case; lower levels of education are systematically failing with regard to written communication, and thus industrial designers are ill-prepared for the demands of a profession that increasingly requires written communication to supplement and explain visual communication.

This paper will present a case for the increased presence of “traditional communication” techniques in industrial design education: specifically, writing and the ability to structure a sound textual argument for a specific product design. As more design work is done on different continents, the ability to communicate in a physically disconnected fashion gains importance. As the threat of commoditization of industrial design grows more and more real, the ability to write a structured and well thought out design rationale becomes a key distinguishing factor that will remain valuable to Industrial Design firms located in the United States and help identify them from their overseas counterparts.

Introduction: What is Literacy?

The *National Institute for Literacy* recognizes Literacy as " ... ‘an individual's ability to read, write, speak in English, compute and solve problems at levels of proficiency necessary to function on the job, in the family of the individual and in society.’ This is a broader view of literacy than just an individual's ability to read, the more traditional concept of literacy. As information and technology have increasingly shaped our society, the skills we need to function successfully have gone beyond simple reading and writing capabilities, and literacy has come to include the skills listed in the current definition” [1]. This view of literacy illustrates a functional and career-centered understanding of skills and techniques, and as applied to designers, can be viewed under even broader terms. Industrial Designers need to communicate effectively (quickly and accurately),

and the contents of these communications are often semantically associative and complicated in nature. For example, a practicing Industrial Designer may be required to specify form, materials, scale, and color; this may even be extended to include user interface hierarchy and “style”, a description of a target audience or demographic, internal components or mechanisms, as well as a rationale and justification for all of the listed details.

The Increasing Case for Literacy: Lack of Skills

According to the fifth annual *Reality Check* study, a joint project by *Public Agenda* and *Education Week*, “Employers and college professors by large majorities nationwide say public high schools are graduating students with just fair or poor skills in writing, grammar and basic math, and most do not consider a high school degree as any guarantee a student has mastered the basics” [2]. The National Assessment of Educational Progress (NAEP) reports an equally grim story: there are over 33 million K-12 students reading at least two grades below level, which is over two thirds of all K-12 students in the United States [3]. The American Diploma Project (ADP) found that “... the high school exit exams that most states require students to pass before they graduate remain far too easy ... most of the exams generally test eighth- or ninth-grade level work. [4]”

Thus, while the magnitude of the problem is difficult to quantify, it is clear that a literacy problem exists within high school education in the United States. Students who gain a university level education in most disciplines, however, quickly build the necessary writing and analytic thinking skills to complete their coursework; students of law, philosophy, psychology, medicine and the liberal arts are all expected to communicate their thoughts effectively and persuasively through written communication, building a compelling argument by referencing a diverse set of thoughts and synthesizing these in order to create a new and articulate idea. The skills that may have been lacking in high school education are built – often through sheer necessity – in nearly each course the student takes in college.

Unfortunately, design schools frequently sacrifice the growth of the traditional communication forms of writing and reading for the nurturing of more “artistic”, or visual communication abilities – sketching and model making. These skills, while important with regard to the view of Industrial Designer as “form giver” and key to the designer’s way of thinking, do not support the shift within the professional world towards strategic, physically disconnected design teams.

Design Literacy: Strategic, Global and User Centered

There are three major trends evident within the professional field of Industrial Design; these trends are supported by evidence found within academic and community oriented events and publications, as well as through skills referenced in existing job opportunities and career postings. These trends include:

1. The shift towards design planning and design management as a strategic business tool
2. An understanding and acceptance of user and contextual research methods early in the product development process
3. Acknowledgement of global, dispersed development and design teams

There are obvious conceptual and technical skills that are associated with each of these trends; for example, in order to conduct user research, one clearly must understand the nuances of a particular research method (such as contextual inquiry or participatory design). The common thread between each of these trends, however, is in the style of the deliverable: all three trends require a robust and articulate vocabulary, and the ability to format persuasive and clearly written communications.

Joshua Norman, Global Product Innovation Designer/Design Manager at Procter and Gamble, explained that nearly 25% of his day is spent writing (through email, design briefs, or on a whiteboard) and attempting to communicate with members of his design team. This communication requires “Lots of planning. I need to determine if I will be setting a course or following one; before I begin a project I try to understand how it is affected by prior work and how it is going to work in a continuum. I need to know the subject, any and all prior work and research, and competitive benchmarking ... I need to know who I am going to be working with, what type of work they do (engineering, research, or marketing) and how they need to receive information for it to be usable and still inspiring” [5].

Much of what Norman describes can be thought of as strategic planning or design leadership, a topic considered by many to be the saving grace for the field of Industrial Design in the face of outsourcing and off shoring. The role of design, it has been argued, will shift from form development to that of project or product management; as Jarvinen explains, “... to participate effectively in strategic design, designers need new skills in organizational processes. Their old skills in concept creation, modeling (including computer modeling), and ergonomics equip them well for product design, but not necessarily for managerial skills” [6].

Elaine Ann, writing for the popular design website core77, agrees and dispels the myth that “All design jobs are going to China ... if you [participate in the] product form-making or styling business – it is very likely that such design services will truly move to China. Clients who are in the business of supplying distribution channels with loads of different styles of products ... might find product sketching and rendering skills in China already very sophisticated and cost-effective ... [However], good design sketching and rendering skills do not necessarily equate to innovation and creativity” [7].

Thus, in order to truly claim Literacy – “an individual's ability to read, write, speak in English, compute and solve problems at levels of proficiency necessary to function on the job” – Industrial Designers must demonstrate abilities in areas outside of product form development; their abilities

must extend beyond the visually generative and must include more complicated structural and planning capabilities.

Learning Design Literacy

Justin Petro, Director of User Experience at Design Edge in Austin, Texas explains that "... drawing and sketching have a minimal impact on my day-to-day ... what should have been covered [in my undergraduate education at Carnegie Mellon University] was 'technical' design writing, both for project briefs and proposals. The biggest hurdle for designers is getting good work. If you cannot speak or communicate effectively you're going to starve. It's not just about pretty pictures; it's about the 'sell'. If you think glossy renderings are all the 'it', you'll be making them for the rest of your life" [8].

Carnegie Mellon University requires exactly one English course (English Composition) in their undergraduate curriculum [9]; Rhode Island School of Design requires two (English Composition, Literature I) [10], and the Savannah College of Art and Design requires two (Composition, English Elective) [11]. While all three of these schools allow students the freedom to pursue additional liberal arts courses through their general education electives, the *requirement* of a structured course of study in writing is nearly non-existent. The question, thus, is evident: if these students aren't adequately and formally learning how to write in their k-12 education, and they aren't adequately and formally learning how to write in college, when are they learning how to write?

The discouraging answer is, unfortunately, that they aren't.

Recently, students in Industrial Design Studio One at the Savannah College of Art and Design were asked to write a five page paper discussing and analyzing a particular genre of products. Of the thirty-four students that completed the assignment, 91.2% turned in written work that contained one or more spelling or grammatical error (punctuation, tense agreement, etc); 38.2% of the students turned in written work that contained twenty-five or more of these errors.

The qualitative errors of rhetoric and structure were even more apparent. For example, one student discussed various aspects of lava lamps:

"This liquid-filled lamp was created by, Mr. Dunnnett, who sold it to, Edward Craven Walker, before he died. Walker became very determined to create a better version of this lamp. It being easily said than done, took Walker a decade and a half in doing so. He filled with so much work in between making films about nudism and running an international house-swap agency he hardly had time for fun".

While the student's overarching intention in the above paragraph is discernable, any potential for a successful argument is marred by:

- The selection of a casual, conversational voice
- A clear misunderstanding of grammatical usage (arbitrarily placement of commas)
- Poor selection of referenced material; the work implicitly referenced has little bearing on the underlying theme (nudism?)
- A misuse of colloquialism (“Easier/Easily said than done”)
- Missing indicative (“was”), as well as missing the introduction to the subordinate clause (“that”)
- A lack of citations

While errors of spelling may be dismissed due to indolence or typographic errors, errors of structure are due to a poor base understanding of the English language. Sadly, the errors present in this example are the norm and not the exception. Other common errors noted include:

- Misspelling of names, including the professor (the equivalent of spelling a client’s name wrong)
- Misspelling of course names (the equivalent of spelling a product name or brand wrong)
- A lack of citations and references
- The use of vulgarity and explicit language to emphasize an important point
- The misuse of homonyms and homophones (lose/loose, your/you’re, their/they’re/there)

Attending to Literacy

It is evident that the current professional shift within Industrial Design will create a change in the day-to-day skills required of a practicing designer; written communication will become more important, and the ability to persuade – through all forms of communication – will remain a critical aspect of conducting design business. It is the responsibility of university educators of design to understand, embrace and react to these changes in the professional world in an effort to best prepare students for careers within the field of Industrial Design. There are five clear steps that can be taken to ensure the sustained literacy, and the ability to successfully communicate, within undergraduate Industrial Designers.

1. Include more required courses dedicated to writing and reading in undergraduate design curricula.

Although a difficult undertaking, a formal and departmental acknowledgement of writing as a critical design skill can only truly be established through a change in curriculum. This change must treat writing and written argument as a critical – and mandatory – skill that designers possess. Curricula must be prescriptive in mandating specific general education courses that focus on establishing strong written communication skills, rather than allowing students the freedom to avoid courses they consider “less useful” or “more difficult” – as is frequently the case with general education electives.

2. Include more assignments in Industrial Design Studio courses that require the use and extensive practice of writing and reading.

A much easier and more immediate way to increase written communication skills within Industrial Design students is to include a substantial quantity of written assignments within Industrial Design studio courses. A written assignment can easily complement an exercise in form development, market analysis or manufacturing specification; the topic is nearly irrelevant, as long as the student is able to practice writing consistently and with a focus on argument and persuasion throughout their undergraduate education. Students may find more success in their writing by treating this form of communication as a design problem: using an iterative, user centered approach in the development of their written work.

3. Treat writing as a core design skill, comparable to drawing, model making, presenting and conducting research.

Written work needs to be understood by both faculty and students as a critical design skill; written work is often viewed as “busy work”, and students frequently question the importance of writing as compared to sketching. The value of cohesive and persuasive writing needs to be articulated to students repeatedly, through positive and negative case studies, scenarios and examples.

4. Be unwaveringly consistent in identifying and physically correcting written errors.

A designer confronted with a flawed two point perspective drawing is nearly unable to restrain themselves from correcting it; this “eye for perspective” comes from years of training and practice, and often, professors will indeed fix incorrect visualizations by drawing directly on students work. The same is true with regard to writing and grammar; a student will learn from their mistakes only if those mistakes are rigorously corrected. This correction must take place whenever errors are present, including written mistakes in process work, on printed boards, in callouts on drawings, and in computer-based presentations.

5. Set a strong example.

Professors generate a large amount of written paperwork; it is imperative that this material set a precedent of excellent and articulate written communication. Project briefs and emails simply cannot have spelling, grammar or sentence structure errors in them if students are to learn the importance of professional communication.

Conclusions and Reflection

As the profession of industrial design evolves, so do the skills required to successfully participate in the business of design. Form, function, usability and engineering all remain critical aspects of product development; however, the method of dissemination of design material has increasingly become grounded in written language. If high school graduates have not gained the critical writing skills that are necessary to accurately communicate in the business environment, it is the responsibility of university educators to ensure that these skills are fostered during the college experience. This will only occur when educators understand and embrace the value of accurate written communication as a core Industrial Design skill.

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