Representing Clarity: Using Universal Design Principles to Create Effective Hybrid Course Learning Materials

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Principles of universal design are applied to hybrid course materials to increase student understanding and, ultimately, success.

When I began teaching hybrid courses (50 percent online; 50 percent face-to-face) in the spring of 2008, I knew that a distance component would drastically change my course. At the beginning of my first hybrid course, I compared my interactions with my hybrid students to those with my face-to-face students. Much of what I had read about distance learning prepared me well for these first experiences teaching first-semester college composition as a hybrid course instructor. Knowing course materials could not simply be "put" online, I revised, even re-envisioned, materials to successfully move them online. I anticipated the need to adopt an email tone that would convey warmth and humanity, even in the most mundane exchanges. I prepared for some flexibility early in the course to permit both me and my students, many of whom were also new to hybrid delivery, time to adapt to the new course structure.

While I anticipated many things, what I did not expect was how greatly the types of questions I received via email from hybrid students would vary from those posed by my face-to-face students. Students from my face-to-face classes would sometimes send emails asking logistical questions about things like formatting issues ("Do we need to include an MLA header on this paper?"), but they would also send questions that addressed rhetorical choices they were making during their writing process. For example, my email records show an email from one student who wrote to ask what pronoun she should use when referring to a hypothetical child in her paper about art therapy for children. Another student writing an analysis of song lyrics asked whether the paper should include the entirety of the song's lyrics in the body of the essay or only refer to segments as needed. In addition to examples like these, emails from students asking for me to review and approve their thesis statements were commonplace.

However, when I finished teaching my first hybrid course, these were not the types of inquiries that stood out to me. The questions that I received most frequently wrestled with understanding expectations and finding materials within

my course management system, Blackboard. Frequently students would write to ask where materials were on Blackboard, indicating that they went online and could not find them or did not know where to begin looking. In class, when I would review the online work from the previous week, students would express frustration at missing a homework assignment because they didn't know it had been assigned. Other students would complete assignments incorrectly, explaining that they did not know what was expected of them.

What troubled me most about these questions was that the answers were available on Blackboard. The materials were there, but students were not accessing them successfully or were failing to retain the information they found. While the trouble of student misunderstanding is not at all unique to hybrid courses, it appeared exaggerated as a result of the distance component.

This exaggerated concern came coupled with a shift in student success rates. At the community college where I teach, student success is defined as a grade of "C" or better. I believe this definition is useful because although grades of "D" are "passing," they do not transfer to four-year institutions. The average success rate in my face-to-face, first semester college composition courses (from the time I started teaching at my college in fall 2006 through the semester during which I began offering the course as a hybrid, spring 2008) was 60.9 percent. However, the success rate in my first hybrid course was an unfortunate 38.9 percent.

This decline in success left me uncomfortable. What was negatively impacting my students' interaction with my course materials so greatly that it could influence my student success rate this much? Since one major difference between my face-to-face and distance delivery was the medium through which students received instructions (orally during face-to-face courses versus written text in the distance portion of the hybrid courses), I wondered whether there was a connection between student reading practices and student performance in the hybrid course.

Since the student reading that seemed most problematic was that which I posted online via Blackboard, I began examining characteristics of screen-based reading. James Sosnoski, in "Hyper-Readers and Their Reading Engines," suggests that reading in the "postmodern space" of the screen is often what Geoffrey Sirc would refer to as hyper-reading. For Sosnoski, hyper-reading consists of the following:

1. filtering: a higher degree of selectivity in reading [and therefore]
2. skimming: less text actually read
3. pecking: a less linear sequencing of passages read
4. imposing: less contextualization derived from the text and more from readerly intention
5. filming: the "but I saw the film" response that implies that significant meaning is derived more from graphical elements than from verbal elements of the text
6. trespassing: loosening of textual boundaries
7. de-authorizing: lessening sense of authorship and authorly intention
8. fragmenting: breaking texts into notes rather than regarding them as essays, articles, or books (163)

In introducing these concepts, Sosnoski is careful to emphasize that he believes these practices occur only during a specific type of online reading: *constructive reading*. He understands this type of reading as being analytical in nature, wherein readers "invent and/or map relations among bits of information to suit their own needs" (163). In contrast to constructive reading, he describes *explanatory or expository reading*, which has the aim of obtaining information, such as course materials. While his experiences lead him to believe readers do not use hyper-reading techniques during expository reading, he invites readers to consider whether his experiences match those of their own. I believe my experiences with my hybrid students indicate that they may be using these hyper-reading strategies during expository reading occasions, and this broadening of these techniques might be contributing to the struggles they have in my classroom.

My concern over these reading practices being used inappropriately, or at the very least ineffectively, by my writing students is echoed in Linda Stine's "The Best of Both Worlds: Teaching Basic Writers in Class and Online," when she reflects on Sosnoski's list of reading skills and states:

> Basic writing teachers, who struggle continually with their students' tendency to read selectively and thus miss main arguments, read only parts of a text and not get the underlying meaning, read with a limited range of internalized schema that would help them gather meaning, find only those meanings they want rather than the ones that the author presented, and misunderstand the boundary between paraphrasing and plagiarizing, might well question whether requiring basic readers to do much or all of their reading online could inadvertently reinforce poor print reading habits. (392)

Rather than questioning the validity of requiring students to read online, I wanted to consider how I could help shape or target the reading my students did online. If practices of filtering or skimming would be central to my students' time on my course site, I wanted to know how I could exploit the types of reading they did while on Blackboard and use those types to my advantage. My hope was that if I could help them engage with and comprehend the learning materials more easily, then I might increase the chance that they could engage with my course materials that are designed to help them improve upon their literacy practices.

As I began examining these reading processes and their likely impact upon my students' interaction with my course materials, I considered the role of the design of my course. My materials were designed using what Stuart Blythe refers to as a "systems approach to design" (331). In this model, the owners who commission the design of a system and the actual designer of a system have the most control over specifications and values demonstrated in the final product. In the case of my Blackboard display, I was both its owner and designer. I determined what information I thought my students needed and designed its display in a way that was functional based upon my own priorities—one of which was that students would read slowly and thoroughly. My logic was that the material was there and accurate, so students simply needed to read carefully. The trouble with this approach is that, as Blythe explains,

> by focusing primarily on accuracy, designers buy into the belief that, by them-
> selves, they can create a rational picture in language that others will simply be
> able to follow. (The concomitant assumption is that a breakdown in such ratio-
> nally conceived artifacts is most likely the users' fault, rather than the system's.)
> (333)

Drawing from Pelle Ehn, Blythe goes on to explain that this view is shortsighted because it ignores the social nature of design. Since designs are part of a social construct, their success cannot be measured only by their rational accuracy, but in their ability to reflect the knowledge and values of their users as well as their designers or owners.

In contrast to the "systems approach to design," Blythe introduces the "user-centered approach," wherein "a designer may start by working with users, by examining their experiences with technology, and by trying to characterize the practical knowledge that users bring to their work" (332). Reconsidering my design approach, I considered the experiences and knowledge of my students. I knew that their experiences with technology had likely reinforced their tendency to implement hyper-reading practices when reading on the screen. Therefore, I needed to reconsider the design of the course to better account for the way they would use the technology—rather than simply promoting my wish list for how students might interact with the technology.

In addition to addressing the hyper-reading skills I saw in my current stu-dents, I wanted a design that would meet my students, whoever they were, exactly where they were. To design a Blackboard course that would accomplish this task, I would need more than simply user-centered design, because the users of my course would change every semester. Therefore, I began to examine universal design by scouring the 125 guidelines presented in William Lidwell, Kritina Holden, and Jill Butler's *Universal Principles of Design*. As Kimberly Elam suggests in her foreword to the book: "Human motivation is mysterious and tied to subconscious instincts, perceptions and influences. *Universal Principals of Design* reveals the driving forces behind human motivation and brings the designer to an understanding of the in-tuitive" (11). As I first began to revise my course design, I selected three principles from this text that I believed would help aid hyper-reading students in obtaining the information they needed from my course site, while also increasing the overall universal appeal of the design. I emphasized consistency, color, and icon representa-tion when I redesigned my course for implementation for the fall 2009 semester.

Use of Consistency

Lidwell, Holden, and Butler explain that consistency is important in design because "the usability of a system is improved when similar parts are expressed in similar ways" (56). This principle makes perfect sense to me, particularly when I think of it in terms of a staircase. The best, most easily used staircases are those that are predictable: each step is both the same depth and height; each is level with the step before it. When an anomaly appears in that system, the results typically involve

bruised knees, or at least a bruised ego. I have never been considered a person of great grace, so when I face a set of stairs that are visibly inconsistent, I know to proceed with caution. Fear keeps me from tackling these at the same rate I would a more uniform set of stairs.

Learning about the power of consistency in design and considering this stairwell, I wondered how consistency might relate to the design of learning materials. I decided that the best, most easily used learning materials might also be those that are predictable: all similar units of meaning conveyed in the same way, every week. Therefore, when I redesigned my site, I decided to present my assignments for each week by following a rigid pattern. This pattern would give an overview of in-class material coverage, describe the online assignment for the week, and provide a list of additional homework assignments to complete before the next face-to-face class. Under the online work and homework headings, I gave both an overview and detailed version of the same material (see Figure 1 for an example of the "Overview" and "Details" sections). The overview was designed for students using the hyper-reading skill of pecking so that they could quickly obtain the at-a-glance look at what they needed to do for the week. The detailed version was designed for students choosing the filtering or skimming approach to obtain greater description of an assignment on which they wanted more information. I reasoned that if students found material presented consistently in the same pattern, they could learn early in the term where to find the information they considered most important based upon the way they chose to use the course site at any given time.

Students could then use their skills in hyper-reading to move through the material, knowing how to sort through and quickly find those nuggets they need to successfully complete their assignments. If students were unsuccessful in completing the required work during the first weeks of class, then they could take a look at what they missed, learn the pattern for how that information is presented, and adapt their reading pattern in the weeks to come to make sure they did not miss that type of information in the future. Without a sense of consistency, however, students would be more likely to stumble, just as one might on the steps. If they were to miss something one week, they would have no definite plan to ensure they could avoid missteps; instead, they would only be able to proceed slowly and with caution. Consistency, therefore, helps build in a safety net for students and allows them to proceed through the course materials with confidence.

Use of Color

The authors of *Universal Principles of Design* also explain the importance of color in design: "Color is used in design to attract attention, group elements, indicate meaning, and enhance aesthetics" (Lidwell, Holden, and Butler 48). As I considered how I might use color to help my hyper-reading students, I first thought of what information I wanted to draw their attention to most. Often deadlines were one of the most important things students missed when they read my course materials. Therefore, I knew deadlines should attract their attention. Therefore, when I

redesigned my Blackboard discussion board page, I used color in each of the forum descriptions to draw attention to the deadlines for both the student's initial post and their reply to their peers.

Marking deadlines was only one way I revised the use of color on my site. I also considered the meaning conveyed through the color palette on my site. While Lidwell, Holden, and Butler emphasize that colors do not have uniform universal meaning, and that there is no substantive evidence that they effect emotion, the authors do suggest that it is reasonable to assume some correlation between color and mood (48). For example, they explain that dark colors might make users feel sleepy, light colors might make them feel more lively, and that color combinations may have meaning to particular audiences. Therefore, as I considered how I might redesign my Blackboard site color palette, I opted to move away from the darker scheme of red and black and to use instead a brighter scheme of green and purple.
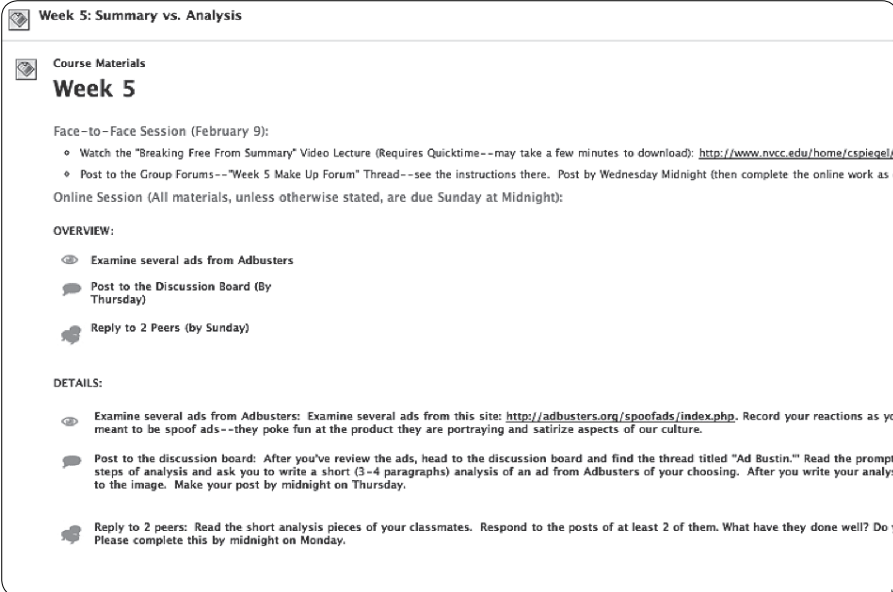
Based on the positive and negative associations related to color that Garr Reynolds presents in his book *Presentation Zen Design*, this color change was likely quite useful to my aims in the course site redesign. I examined his list of associations for my original color scheme of black and red. Black has these positive associations: "classy, formal, artistic, simplicity, authority, power," and red has these associations: "assertive, powerful, bold, urgent, intensity, emotionally hot, love and passion" (79–80). However, these powerful associations are paired with negative ones. For black those associations include "death, fright, loss, troubles, mourning" (80). Red can boast of connection to "danger, evil, murder" (79). The negative characteristics were not the tone I was hoping to set for my classroom, and even the positive traits were not in line with the informal, welcoming tone I like to convey in the classroom.

When I examined Reynolds's associations attributed to purple and green, I was much more pleased. Purple is associated with words such as "wisdom, […] creativity, artistic, [and] inspiration" (80). All of these characteristics I believe would benefit my classroom. Uniquely, Reynolds lists no negative associations for this color and only lists one for green. Although green could be said to represent envy, it is also associated with terms such as "balance, harmony, . . . calm, good luck, rebirth" (79), and suggests nature and persistence, all concepts that I felt echoed the atmosphere I attempt to establish in the classroom. Most importantly, however, the color green has a soothing association to it. I wanted pleasant tones to make my site welcoming and calming to my students. I hoped that this effect would encourage them to want to spend more time on the site, thereby giving them greater opportunity to spend time reading through the materials present on the site. This usage of color can be seen in Figure 1, which is an example of a screenshot from a Weekly Assignments page within my Blackboard site. It demonstrates the pattern for information display that I maintain throughout each week within my course. "Week 5," "Overview," and "Details" are all presented in a purple font. The subheadings under "Week 5" and the icons are all in green.

Use of Representative Icons

In addition to consistency and color, I also began to consider how the use of icons in a design might be effective. Lidwell, Holden, and Butler state: "Iconic Representation is the use of pictorial images to improve the recognition and recall of signs and controls" (132). This principle reminds me almost instantly of Sosnoski's description of the "filming" skill in hyper-reading. Sosnoski maintains that "in the construction of hyper(media)texts—regardless of their significance—graphics often play a more meaningful role than words" (169). While I've often used a variety of visuals in my instructional materials, I'd given little thought to how they might be used to construct the meaning or instruction that needed to take place.

However, reading about icon representation made me think about what I did know about how my students could operate with icons. I was reminded by their ease in turning on the computers in our computer classroom without having ever used the specific model of PC in our classroom before. How were they able to do this? They were able to look for the symbol they recognized as a power button; when they found it, they knew pressing it would cause the computer to boot. I decided to find a way to bring icons into my learning materials. I wanted to "condition" students to recognize icons within their learning materials as representative of key instructions. Therefore, using the Wingdings and Webdings fonts, I made images for key tasks I habitually gave my students: read, take notes, post to the discussion board, reply to a peer, and so on. A chart of these icons and their meaning/purpose is included in Figure 2.

FIGURE 1. Sample screenshot from a Weekly Assignments page on the Blackboard site.

Icon	Meaning
🗨	Make an initial post to the Discussion Board
🗨🗨	Reply to peers on the Discussion Board
⬇	Submit document for grading
👂	Listen to an audio file
👁	View an image, website or video
🖥	Write or draft
📖	Read
✍	Take notes
?	Take a quiz
👫	Peer review
🏖	Take a break

FIGURE 2. Icons used for key tasks that I give my students and the meaning or purpose of these icons.

What I hoped, once again, was that this strategy would effectively communicate requirements to my students quickly. I paired each instruction in the "Overview" and "Details" sections of my course materials with an icon. In this way, I hoped that students who relied on the "filming" skill of hyper-reading could quickly scroll through the course material and, if they understood the meaning of each icon, could have a visual checklist of the expectations I had for them that week.

Results and Findings

Pulling these three principles of universal design into my Blackboard course allowed me to change the types of reading skills needed to obtain the information vital to student success in my classroom. While students could certainly collect all the information they needed using a linear reading method, students using hyper-reading techniques were put at less of a disadvantage. The new model, I believe, is more universally welcoming and less intimidating, at a glance, than my original design.

Although I have only taught my hybrid course using this method of design for two semesters, I am quite encouraged by the results I am seeing. For starters, I am spending much less time answering emails that are logistical in nature. Students are no longer asking where to find materials after the first few weeks of class. What I find most promising, however, is the increase I have seen in my success rates. While the success rate of my first hybrid course was 38.9 percent, the average success rate in the hybrid courses I taught between that first semester and the time I redesigned the course was 45.6 percent. In the three classes I have taught using the new design, I have had an average success rate of 55.6 percent. While I would certainly like to see that number be even higher, I am encouraged by the 10 percent increase in success. I hope future redesigns and further implementation of the principles of universal design will help me to continue to see increased success within the courses I teach. In particular, I hope to explore how including these principles on assignment sheets, in-class PowerPoint presentations, and in my face-to-face classes might also help improve students' success rates. ◄

Works Cited

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