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Strange Bedfellows: Human-Computer Interaction, Interface Design, and Composition Pedagogy

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Abstract

As digital interfaces increasingly mediate our access to information, the design of these interfaces becomes increasingly important. Designing digital interfaces requires writers to make rhetorical choices that are sometimes technical in nature and often correspond with principles taught in the computer science subfield of human-computer interaction. We propose that an HCI-informed writing pedagogy can complicate for both writing and computer science students the important role audience should play when designing traditional and digital interfaces. Although it is a subtle shift in many ways, this pedagogy seemed to complicate student understanding of the relationship between audience and the texts/interfaces they created: it was not just the "human" (beliefs, attitudes, values, demographics) or the "computer" (the software or hardware or other types of mediation) that mattered but rather the "interaction" between the two. First we explore some of the ways in which writing code and writing prose have merged and paved the way for an HCI-informed writing pedagogy. Next we examine some parallels between human-computer interaction principles and composition principles. Finally, we refer to assignments, student responses, and anecdotal evidence from our classes where an HCI-informed writing pedagogy drew—or could have drawn—student attention more acutely to various audience-related technical and rhetorical interface design choices.

Keywords: Composition pedagogy; Human-computer interaction; Interface design; Audience/user; Perceived affordance; Cognitive load; Usability testing; Iterative design

1. Introduction

With the proliferation of newer types of digital interfaces—Facebook and MySpace, blogs and wikis, cell phones and iPods—come new opportunities, new frustrations, and new rhetorical choices for writers and designers. For every time we have received a well-crafted email message from a colleague or had a search engine give us a relevant answer on the first try, we have received dozens of spam emails and clicked hundreds of irrelevant links. And, as many of us have probably experienced first-hand, it is frustrating when an interface is counter-intuitive or fails to respond in an expected way, for instance, when your effort to locate, on a web site, a local restaurant's hours of operation only leads you to information about making reservations, or when your attempt to add a contact into your cell phone's address book instead results in accidentally redialing the same user's number. Such frustrations remind us of Stephen Bernhardt's warning: "We need to constantly appraise the broad drifts in the shape of text—to anticipate what now constitutes and what will soon constitute a well-formed text. We need to think about how readers interact with text—what they do with

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it and how. We need to anticipate where text is going: the shape of text to come" (1993, p. 151). This reminder, which is just as relevant today as it was 16 years ago, for writers to study what readers do with texts and how they interact with them, mirrors the main tenant of the computer science subfield called Human-Computer Interaction (HCI), which studies how users interact with computers and digital devices of all kinds.

As stated in the Association for Computing Machinery Special Interest Group on Computer-Human Interaction's (ACM SIGCHI) *Curricula for Human-Computer Interaction,* "Human-computer interaction is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them" (Hewett et al., 1996). As such, the HCI field exists at the junction of the computing sciences (computer science, software engineering, and informatics), the design arts (graphic and industrial), and the behavioral and social sciences (cognitive psychology, sociology, and anthropology). One of the primary goals of the interaction design subfield within HCI is to improve the experience for humans at the exact time of direct interaction with the computer. However, there are many ways to define "improve" (e.g., accessibility, learnability, efficiency, ergonomics, safety), and there is a steady stream of new devices and new mechanisms that affect this interaction. In the face of this highly variable environment, one of the primary ways of defining the success or failure of an interaction design becomes dependent on the user's reaction to it. How will the user respond? Is the design user-centered? Is it usable?

We became interested in how closely our discussions of "design, implementation, and evaluation" of user-centered digital interfaces mirrored our concern in composition pedagogy for helping students design, implement, and evaluate reader-centered traditional and digital texts. We began to identify instances when designing digital interfaces required writers to make rhetorical choices that were technical in nature and often corresponded with principles taught in HCI or interaction design courses. As scholars and teachers in two disciplines that might seem distinct but in fact are increasingly related—composition and computer science—we found ourselves in a unique position to study collaboratively how HCI principles, and specifically principles of user-centered interface design, can be adapted for use in both composition and computing classrooms. Although there are several similarities between composition pedagogy and HCI ideas—similarities which will be discussed in this article and which make comparing these two disciplines plausible and fruitful—one major difference is that an HCI approach to design considers the user, or the audience, an active and integral component in the design process and assumes that the user will be served in some way. By contrast, some of the most influential ways composition pedagogy has dealt with audience—such as by creating fictional audiences, saying that the audience is "addressed," or even writing for real audiences or service-learning clients—still tend to frame users as passive or only involve them minimally, if at all, in the design process. These techniques sometimes fail to give us a clear picture about what role the audience should play in the composing process and even less of a clear picture about how exactly audience can be taught.

In short, we found that integrating HCI principles into our classrooms helped us complicate for students the important role audience can play in the process of composing digital texts and designing software interfaces. Though it is a subtle shift in many ways, it nonetheless made some big differences in how students seemed to perceive the relationship between audience and the texts/interfaces they created: it was not just the "human" (beliefs, attitudes, values, demographics) or the "computer" (the software or hardware or other types of mediation) that mattered but rather the "interaction" between the two that students came to view as central when considering audience. Thus, the audience/user always had to be involved in the composing and design process. In this article we examine three HCI principles that complicated how we taught audience in our composition and computer science courses. By studying these principles—that focus on understanding audience as an active element in the design process and that contribute to the effective design of digital interfaces—writing students can become savvier rhetoricians when composing in both traditional and digital media. Likewise, computer science students can become more effective interface designers as they increase their awareness of the rhetorical choices that impact their practice.

Our interest in interface design originated with our involvement in an innovative multimedia authoring minor at our medium-sized, liberal arts, primarily undergraduate institution. The goal of this minor was to merge the sciences with the liberal arts by training both writing and computer science students for newer types of digital writing, such as web site and multimedia design and basic database development. The following abbreviated description highlights the minor's goals:

> As more and more information is disseminated electronically for personal computers and via the Internet, the artistic design and narrative quality of this digital content become increasingly important. The Multimedia