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An Electronic Journal for Undergraduate Research: A Case Study in Audience and Systems Analysis

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Electronic publication brings a wide range of questions regarding how our lives will change. An area of great change has been electronic scholarly publication. One question this change has brought about is how we can prepare undergraduates as professionals prepared to meet this challenge. To this end, in 1996 I and the Center for Communication in Science, Technology, and Research began a two-year experimental online journal to publish "excellent" undergraduate research: the *NCSU Student Researcher*. Our goals were to introduce undergraduates from across the NC State campus to the challenges of electronic publication, to reward and enhance their class research by publishing their class papers, to highlight excellent NC State student writing across campus and beyond, and to explore electronic participation and presentation. The "peer" review procedure involved two faculty nominating the paper as "excellent" undergraduate research. We received a great deal of enthusiastic interest and input from many students and faculty, yet ultimately the *Researcher* received only two submissions. This thesis, the final report for the project, explores factors affecting student and faculty participation.

Three different approaches to audience analysis were practiced in designing the journal (Schriver, *Dynamics in Document Design*, 1997): intuition-driven, classification-driven, and feedback-driven. The design process provides excellent examples of strengths and weaknesses of these approaches, and the superior approach of feedback-driven audience analysis, which was applied via systems analysis (Senge, *The Fifth Discipline*, 1990). The use of Senge's systems analysis as a form of audience analysis was a crucial contribution to understanding the journal's outcome.

This thesis also discusses the dynamic model of scholarly communication uncovered by systems analysis. Rather than a linear process beginning with author and ending with reader, as found in the scholarly literature on scholarly publication, journals and other document series exist within an "interactive communication environment," not as single documents with a relatively distinct beginning and end, but a planned, dynamic series of documents that relies on its audience for input in order to survive. Feedback-driven audience analysis as practiced by systems analysis

is particularly appropriate for analyzing audiences for such environments, which include periodicals, listservs, and chatrooms, as well as planned revisions based on audience feedback. Gathering feedback from the audience throughout the course of designing such an environment is critical if the environment depends on that audience for its survival.

Systems analysis/feedback-driven audience analysis ultimately pinpointed the source of the *Student Researcher*'s failure. The model of scholarly publication applied in the early design stages, derived by intuition- and classification-driven audience analysis, focused on authors (students) as the source of journal submissions. This conflicted with the mindset of faculty and students, because many conceived of no "disciplinary space" in which undergraduate publication is appropriate ("undergraduates are not authors"). Also, Writing Across the Curriculum initiative at NC State had caused most faculty to rethink what they considered "excellent" undergraduate writing, so publicly nominating a paper as "excellent" at that time was problematic. Systems analysis identified faculty, rather than the students, as the motivators in the publication process and thus the appropriate target for marketing and audience feedback.

Because I did not seek systematic faculty and student input throughout the journal design process, I was unaware of the effect of the WAC initiative, and unaware that most faculty did not believe undergraduate publication per se was worth their effort. Because I focused on the students and not the faculty in marketing the journal, I had not invited broad faculty input in the design of the journal, a design that may have departed from the standard scholarly model in order for them to perceive it as appropriate for their students.

AN ELECTRONIC JOURNAL FOR UNDERGRADUATE RESEARCH: A CASE STUDY IN AUDIENCE AND SYSTEMS ANALYSIS

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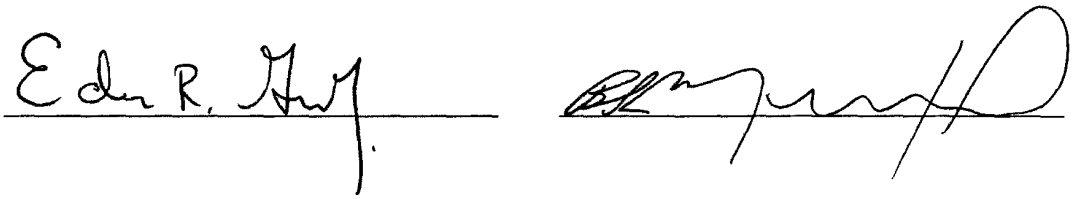

Chair of Advisory Committee

In essence, most of us think, but we are not used to thinking about what we think. Once we do, we can recognize that our thoughts and beliefs are an effort to represent reality, not reality itself. We can be, and often are, simply wrong. That being said, it is sometimes quite helpful to recognize just what our errors might be, since such recognition can often allow us to adjust our behavior to deal more effectively with the problems that we face.

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Patricia J. Watson earned her Bachelor of Arts degree summa cum laude from NC State's Division of Multidisciplinary Studies in 1996, concentrating in the writing and culture of science. That year she served as a research assistant for the Center for Communication in Science, Technology, and Management, establishing the program assistant position there and serving as project manager for the *NCSU Student Researcher* (http://www.chass.ncsu.edu/ccstm/journal), for which this thesis is the final report. She joined the editorial board of the online *Meridian: A Middle School Computer Technologies Journal* (http:www.ncsu.edu/meridian) in 1997 and served as its co-editor during the 1999–2000 school year. During 1997–1998 Trish taught ENG333: Communication for Science and Research. Her studies, research, and work experience focus on research communication channels among researchers, students, and the general public, and she has worked in academic and scientific publishing for over 15 years.

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