PROJECT TITLE: Assessing the "Computer Generation" in Liberal Arts Colleges and Universities

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ABSTRACT

Helping our students achieve information fluency is both a challenging and dynamic goal. Chief among these challenges is that our goal itself is a moving target. The rapid pace of change in information technology has likewise affected the preparations and expectations of our undergraduate students. In order to design more effective and engaging educational programs to achieve our goals, we need a more precise and current understanding of our students' backgrounds and attitudes about using information technology.

Recently, we conducted a survey of Furman University undergraduates. Over 500 students responded to an anonymous questionnaire that asked them about their backgrounds, computing experience, and current practices. In the proposed project, we hope to extend this work to establish a baseline describing computing experiences and attitudes for the liberal arts students across ACS institutions. This will be accomplished by soliciting the assistance of colleagues within at least five additional ACS schools. Each would administer the survey in order to collect additional data and participate in the analysis of the results (for at least six schools, including Furman). The survey instrument would be made available both in printed and on-line forms. We would assist cooperating institutions to conduct local surveys during the spring, 2002. The group would publish a final report (results and analysis) that would be made available to all interested parties—again, both in printed form, and on the Web—during the summer, 2002. We believe that this information would be extremely useful to our colleagues throughout the ACS and would hopefully lead to cooperative efforts developing new and innovative programs in information fluency. Further, we would hope that such collaboration would enable us to secure additional funding to support educational programs in information fluency.

JUSTIFICATION AND DESCRIPTION OF THE PROJECT

A fundamental component of information fluency is a basic competency in using computers to perform informational tasks.[1] Most colleges and universities require or at least encourage their undergraduates to achieve a minimum competency in using computers. In short, an educated individual should typically possess some degree of computer "literacy" as an extension of traditional literacy: reading, writing, and speaking effectively. Over the past two decades, though, the standard of computer literacy has changed significantly. Computers have become more powerful and even more economical. At the same time, the growth in data communications networks such as the Internet has rendered computers almost indispensable for many enterprises.

Ten years ago, computer literacy generally implied some facility with word processing and spreadsheets; perhaps, some basic programming. Today, our students are exposed to most of these tasks much earlier; and to many other tasks not even imagined a decade ago. Indeed, the current generation of college students has grown up with

computers in the home, school, and workplace. Posting Web pages, making digital pictures and audio are commonplace activities for them. In many respects, they are the "computer generation."

As a result, we are interested in assessing the impact that this exposure to computers and computing has had on our current undergraduate population. If we hope to keep pace in our courses with these changing conditions, we must understand better the nature of the audience. Exactly how far has this "digital" exposure extended to our undergraduates? Has it made a significant difference in how they go about performing basic tasks?

Ironically, even though computing has gone main stream, there is shrinking representation of women in more technical computing studies. Computer science at the collegiate level is facing an increasing "gender gap."[2] This gap is widening in spite of the fact that more women today are attracted to mathematics and sciences than a decade ago. There are a number of theories to explain this phenomenon. A prominent view states that attitudes about computing are reinforced by gender roles and stereotypes.[3] Thus, at an early age, girls are discouraged from exploring and using computers. On the other hand, boys are rewarded when they show such interests. Is this applicable to the "computer generation?" Specifically, do college women who have been exposed to computers for most of their lives still subscribe to these gender differences? If there are indeed some gender differences, these should be considered in developing our educational programs.

National surveys tell us about the undergraduate population at four-year schools across the spectrum of educational institutions. But, we lack comparable summary data about students in liberal arts colleges and universities. Not only are these institutions distinct in mission compared to the national scene, but we also attract a different student audience. We think that it would be extremely useful to have data about our "computer generation" undergraduate population. Specifically, it is our hypothesis that undergraduates in liberal arts colleges and universities are a well-qualified but largely untapped audience for innovative educational programs that combine information studies with traditional academic disciplines.

The proposed project would be completed by the end of the summer, 2002. In March, 2002, we would identify and secure the services of colleagues at five (5) member institutions of the ACS. These individuals would serve as representatives of his or his institution and would be responsible for conducting the survey on his or her campus. The survey[4] itself could be administered either in printed form or on-line (via the Web site maintained by the project investigators). Implementation issues would be determined by representatives of each institution. For example, it may be decided useful to add specific items of local interest to the instrument. At any rate, a common target goal would be to sample at least 20–25% of the student population at each participating institution.

The month of April would be set aside for conducting the survey at participating ACS institutions. Completed forms would be tabulated by the project staff at Furman University.

Summary results would be published both in printed form as well as on-line at the project Web site. The investigators and collaborators would also produce a final report that offers analysis of the results from the survey. We would also expect to disseminate some of the results at regional and national professional meetings or conferences.

We believe that the proposed project is an important and necessary first step to future efforts in developing educational strategies for improving computer literacy and information fluency. Besides being useful locally at each participating institution, it should likewise serve as an impetus for further collaborative efforts among ACS institutions. We would also expect that such collaborative efforts would enhance the prospects of securing funding from granting agencies interested in these goals. Finally, if the project is successful, we would hope to extend the research to include all ACS colleges and universities.

ENDNOTES

[1] Associated Colleges of the South, "Toward Information Fluency in the Liberal Arts."

[2] Weinman, Janice and Lisa Cain. "Technology—the New Gender Gap," *Technos: Quarterly for Education and Technology*, Spring, 1999. Volume 8, Issue 1, page 9.

[3] Fisher, Allan, et al. "Computing for a Purpose: Gender and Attachment to Computer Science. (www.cs.cmu.edu/~gendergap/purpose.html).

[4] A copy of the survey is being mailed under a separate cover.