

ACS Information Fluency Grant Proposal:

Using Peer Mentors to Promote Information Fluency

Washington and Lee University Project leaders:

Phil Cline, Lewis Whitaker Adams Professor of Management and Economics

Jeff Overholtzer, Technology Communications Specialist, University Computing

John Tombarge, Reference Librarian, James G. Leyburn Library

Abstract

The project will redesign Management/Economics 203 (Quantitative Analysis) to incorporate formal training in information fluency, with the added training sessions to be developed and team-taught by the professor, an expert in information technology, a reference librarian and paid student mentors. The student mentors, chosen from among those who have previously completed the course, will be trained and equipped to be effective partners with the course instruction team. The student mentors will provide informal assistance, helping students in the computer lab as they complete course assignments, and will also help teach formal workshops.

The project will not only strengthen the target Quantitative Analysis course, but also provide a model for other courses within Washington and Lee and the ACS in the following ways: 1) it demonstrates exemplary training and use of student mentors to enhance instruction in information fluency; 2) it seamlessly integrates information fluency instruction in regular course offerings; 3) it develops training materials that can be shared among courses that incorporate information fluency.

Challenge

Equipping students with the necessary skills to effectively use information can be a daunting task. The proliferation of the data itself and the complexity of the tools required to find, analyze and present it make a formal introduction to these skills increasingly important. Class time, however, is valuable, and in order to meet course goals faculty must spend it teaching the content, not the tools. Some departments have courses in place to introduce and promote the use of information tools, but other departments pay little attention to information fluency or rely on faculty to incorporate this instruction informally into their courses. This variation makes it difficult to provide instruction that will bring all students to a minimum level of competency.

Students in the Williams School of Commerce, Economics and Politics are expected to be information literate and have strong computer and critical thinking skills--to be information fluent. While the Politics Department requires its students to take a formal Bibliographic Resources class that introduces the students to many of these concepts, no such course exists in the Accounting, Economics or Management departments. Several professors from these departments have attempted to incorporate some information fluency instruction into their

classes and have taken advantage of the fact that the information technology staff and librarians at W&L, as at many ACS institutions, make themselves available for teaching information fluency to students. The use of such personnel to supplement instruction by faculty members in the disciplines can be effective, but the demands on the time of librarians and technologists often outstrips their ability to provide the service and the related follow-up assistance that students require as they apply what they are learning to their assignments. In addition, these specialists are usually allowed insufficient class time to adequately cover their material.

The challenge, in short, is to develop a model whereby information fluency instruction is integrated throughout a course without disrupting or displacing course content and without further overloading the library and information technology staffs.

Solution

The first step was to identify disciplines that are good prospects for this project. In particular, we looked for disciplines in which:

- ❑ the coursework is information-intensive and demands sophisticated skills in research and analyzing and presenting information in a variety of formats;
- ❑ faculty members are receptive to an information fluency component;
- ❑ information fluency can be introduced in a large-enrollment, multi-section course taught at an introductory level. An information fluency component taught in such a course will affect large numbers of students and prepare them in a uniform way for advanced work in the discipline. Thus, all faculty teaching upper level courses in the discipline will be able to expect that students will have attained a certain level of information fluency.

Economics/Management 203 Quantitative Models meets all of these criteria. It is a required course for students majoring in accounting, economics and management, and between 160 and 180 students enroll in this course each year. Accounting, economics, and management are the largest programs on campus and are continuing to attract increasing numbers of students.

Phil Cline has structured his Quantitative Models for Management and Economics class (Management/Economics 203) to incorporate many aspects of information fluency, teaching the skills himself and through the assistance of reference librarians and information technology personnel. These strategies, however, often fall short of meeting the students' needs as they attempt to apply new skills to coursework. We propose to restructure the class to provide information fluency instruction throughout the course, as the skills are required of the students in their assignments. The leaders of this project will work together to develop a series of workshops and training modules that will be conducted both in class and outside of class. These will be supplemented by Web-based instructional materials.

Paid student mentors will assist the librarian and technologist in teaching information fluency skills, thus providing better support to the program as a whole than the two could do on their own. These student mentors will be selected by Professor Cline from among motivated and technology-proficient students who have recently completed the course. The instructional

technologist and reference librarian will design a rigorous course of instruction for these students so that they can be effective partners with them in teaching information fluency skills. The student mentors will serve the course in several ways: they will serve informally as mentors to their peers, staffing a computer lab during specified hours to give hands-on assistance in finding, analyzing and presenting information; and they will help lead formal workshops on information fluency skills specifically relevant to the course.

The information fluency component of this statistics course will focus on these areas:

1. Applying critical thinking skills to research
2. Learning about the issues of copyright, ethics, and citing sources
3. Selecting and evaluating resources
4. Learning database structure and searching skills
5. Using Internet sources
6. Locating and retrieving statistical data
7. Mastering Excel: basic skills, statistical tools, graphs and charts, importing data.
8. Presenting information: selecting appropriate medium (such as PowerPoint or World Wide Web); learning to use presentation tools, following principles of effective visual display of information

The students enrolled will work in teams to complete a term-long research project that includes a literature review, development of an hypothesis, identifying and defining variables (dependent and independent), development of a theoretically sound statistical model to test the hypothesis, explanation of the methodology used, analysis of the results, and discussion of conclusions reached. These reports will be presented in writing to the professor and orally to the class. **(Please see Exhibit 1 attached to this document.)**

The proposed program will be an effective solution because:

- ❑ The information fluency workshops will be a component of the course; they will function as “lab” components provided both as web-based modules and as formal workshops. The students will be required to participate.
- ❑ The information fluency workshops will be conducted by the technologist and the librarian, in conjunction with the student assistants. The faculty member will be free to concentrate on content classroom instruction.
- ❑ Students will lead some of the information fluency workshops and provide most of the out-of-class assistance to their peers, referring students to reference librarians or technologists when appropriate. This will free librarians and technologists to assist additional students and faculty members.
- ❑ Peer mentors provide support in a way that is compatible with the way students like to learn. Results from student surveys conducted here at W&L indicate that students prefer to learn technology and information skills in informal ways, such as by asking other students and experimenting on their own.
- ❑ Information fluency instruction is most effective when conducted in the context of a specific course and linked with specific assignments. Students acquire and retain information fluency

skills most effectively when they can use them immediately in specific projects. Such skills, when instilled as part of a generic workshop with no specific application, are often quickly lost. Similarly, if instruction is provided before the skills are required of the students, the skills are never actually acquired. Instruction must be relevant to an actual assignment and be timed to coincide with that assignment.

This project will not only strengthen Professor Cline's statistics course, but will also raise the visibility of information fluency throughout the curriculum. The skills and concepts to be taught in the information fluency component of this course could be easily adapted to many other disciplines. Any course that is information-intensive, demanding sophisticated skills in research and analyzing and presenting information in a variety of formats, could benefit from the training modules developed in this project. Courses such as Psychology 250 (Research Design) or Politics 201 (Political Data Analysis), and others taught outside of W&L, could adopt and adapt modules developed for this project.

Timeline

- Summer 2001: Coordinate classroom assignments, develop information fluency modules in support of these assignments, develop workshop outlines and assessment/evaluation instruments.
- Fall 2001: Identify students for selection as mentors.
- December 2001: Train student mentors in information fluency skills. Review modules, workshop outlines, and assessment tools with students and make modifications based on their input.
- Jan -April 2002 (winter term): Begin information fluency project with statistics course.
- May - June 2002: Evaluate course, write reports, and prepare presentations.

Assessment and dissemination

Washington and Lee University has budgeted money to subscribe this summer to the Flashlight Network, a nationally recognized program to assess educational uses of technology. The Flashlight Network will provide consulting assistance in evaluating uses of instructional technology on campus. In addition, membership in the Network will provide access to a Web-based tool that helps create an instrument for use by students in assessing specific uses of technology within courses. We will use Flashlight services and tools to ensure thorough evaluation by faculty and staff leaders, student mentors and students involved with this project.

We will describe the project in detail so that it can be adapted by others (we will include lessons learned, what we would do differently) in a narrative published on the Web and also submitted for publication in *Educause Quarterly* or *College & Research Libraries News*. Presentations on the project will also be made to the faculty of the Williams School and the faculty of the University through the "Users of WIT" series, a campus wide forum in which interested members of the faculty and staff explore the best classroom applications of WIT (Web-based Instructional Technology).

Larry Peppers, the Dean of the Williams School of Commerce, Economics and Politics, has given his commitment that ongoing costs for student assistants will be met by the Williams School after the successful conclusion of this project.

Exhibit 1

The following text and accompanying diagram are distributed by Professor Cline in Econ/Mgmt 203 on the first day of class. They describe in broad terms a research project that is the central assignment in the course. They are included here to convey two points:

1. The principles of information fluency integrate perfectly with the fundamental goals of the course
2. We have identified elements of the research project in the course that relate directly to information fluency concepts and skills to be taught in this project. Those information fluency concepts and skills are identified with the following symbol in the chart, and correspond directly to the list on page 3 of this proposal.

IF SKILLS (numbers)

Econ/Mgmt 203 -- Cline The Research Process -- Customized for Econ/Mgmt 203

Writers on research methods usually treat research as a sequential process involving several clearly defined steps. But no one claims that research requires completion of each step before going to the next. Recycling, circumventing, and skipping occur. Some steps are begun out of sequence, some are carried out simultaneously, and some may even be omitted. Despite these variations, the idea of a sequence is useful for developing a project and for keeping the project orderly as it unfolds.

The outline below models the sequence of the research process you will undertake in this course. Identification of the research question or hypothesis - its origin, selection, statement, exploration, and refinement - is the critical activity in the sequence. A familiar quotation from Albert Einstein supports this view:

The formulation of a problem is far more often essential than its solution, which may be merely a matter of mathematical or experimental skill. To raise new questions, new possibilities, to regard old problems from a new angle requires creative imagination and marks real advance in science.

Albert Einstein and L. Infeld, *The Evolution of Physics*
(New York, Simon and Schuster, 1938), p. 95.

THE RESEARCH PROCESS

