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Teaching Anxious Students Skills for the Electronic Library

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Sharpening Intellect | Deepening Christian Faith | Inspiring Action

Messiah University is a Christian university of the liberal and applied arts and sciences. Our mission is to educate men and women toward maturity of intellect, character and Christian faith in preparation for lives of service, leadership and reconciliation in church and society.

Some students immediately feel at home in today's technology-saturated library, but many others have difficulty navigating the myriad of electronic sources in most academic libraries. It is estimated that as many as one-third of the college students in the United States suffer from technophobia and are anxious about using computers. In addition to coping with computer technology, many first-year college students are intimidated by the size and complexity of academic libraries (Mellon 1986). In short, just when students most need to become competent users of information technology, anxieties can cause them to avoid the library altogether (Warmkessel 1992).

Breaking the anxiety barrier enables students to move beyond technical concerns to grapple with the information itself. Teachers and librarians can facilitate this progression by designing sessions in which students learn to use CD-ROM or other computer databases. Using active learning methods, the students can increase their understanding of searching concepts and techniques for evaluating information (Tyckoson and Jacobson 1993).

But many academic libraries do not have classrooms with computer work-stations where each student can get this kind of hands-on experience during the instruction. Some of the techniques we outline will compensate for this. Although we will primarily use ERIC, the education database, most of the teaching methods we propose apply to a variety of electronic databases. All activities involve cooperation between the teacher and the librarian. In general, the teacher or librarian need use no more than two activities per class period; however one of the techniques--keeping a journal--continues throughout the semester.

Active Learning Techniques

Keeping Journals

To address both affective and cognitive aspects of learning, we require students to keep informal journals in which they chronicle their research progress and difficulties. The journals are read periodically by the teacher and/or librarian, who add their own comments and questions.

An attitudinal survey to determine the students' skill and anxiety levels provides an impetus for their first journal entries by making them aware of what they do or do not know. First, most students are concerned about their research topic or searching the ERIC database. For instance, one student wrote, "I really need help using descriptor words from the thesaurus and learning how to narrow down my topic" (Hayes). Thus, the teacher and librarian can plan a class on CD-ROM to address the problems.

Throughout the semester, the teacher's leading questions give direction to the students for their journals. Following the librarian's ERIC instruction session, students are asked to respond to questions such as, "Have your feelings about ERIC changed?" Later, teachers may ask, "Are

there areas of the search process that frustrate you? If so, how can you minimize the frustration?" "What questions do you want me [the teacher] to answer?" The journals help the teacher or librarian pose and answer relevant questions and intervene when necessary, and they encourage the students to think critically. A teacher's written nudge in a student's journal promotes a stronger focus and can prevent a disappointing final product.

The students' negative comments and complaints often highlight areas that the teacher and librarian have overlooked. Except for occasional remarks such as, "I learned absolutely nothing," students' critical remarks generally help to refine future sessions and assignments. After repeatedly reading, "The library never has any of the journals I need," the librarian began subsequent ERIC classes with a realistic comparison of the number of education journals in the college library with the much larger number of periodicals indexed in ERIC. After the librarian explained the impossibility of owning all journals cited in ERIC and reported the astonishing amount already expended on subscriptions, complaints about holdings declined dramatically. Similarly, teachers have addressed widespread student misunderstandings about assignments.

Whether students comment negatively or positively in their journals, most feel encouraged by knowing that both the librarian and teacher want to ease their anxieties and answer their questions. One student described her anxiety and hopes this way:

ERIC--who is he? Well right now he is a big, scary looking man, whom I have no control over. Right now he's laughing at me because I have no idea what I'm doing with him. However, he's getting a bit scared now, because of a woman named Mrs. Mark, who is going to show me how to put the reins in my hands to control him. Hopefully, by the end he'll be a friend.

After an ERIC instruction session, students usually exhibit an increased level of confidence.

Problem Solving for Topic Selection

Selecting a research topic is, for many students, an onerous task. As practiced by our colleague Steve Hayes, teachers can help students build a context from which their topic emerges and can model the thinking process for choosing a workable topic. First, Hayes directs his students to review their textbooks for interesting topics. Each person is then asked to submit a brief proposal for a research topic or question. Hayes then transfers the list of topics to a set of transparencies, to facilitate discussion when the students and teacher work together to refine the topics.

Hayes's general subject area is teaching reading in the primary grades. Some of the questions posed to the students are the following:

1. Does the topic relate to reading in the primary grades?
2. Is the focus narrow enough, too narrow, or too broad?
3. If a topic is being considered as unacceptable, can the student who submitted it support his or her choice?

To identify topics that are too general, the teacher asks, "What areas would be covered if you started to re-search this topic?" Hayes reports that "after generating more than four areas, the

student usually discovers how broad the topic is." Although this activity takes an entire class, Hayes notes that the improved focus of the students' first drafts and the high quality of the final papers justify the time invested. The majority of students like the class problem-solving session.

Required background readings, selecting of preliminary topics, and discussing topics as a class--before the library ERIC session--increase students' motivation to learn database searching as a means to an end, not as an end in itself. Next, the librarian teaches ERIC using students' topics to illustrate a variety of searching techniques. When certain terms produce unsatisfactory results (as opposed to pretested, librarian-provided, examples), the class is encouraged to think of alternative terms and strategies.

Sorting Periodicals

Teachers typically encourage their classes to find articles in scholarly or professional journals for their research projects. Undergraduates are often unfamiliar with periodicals other than newsstand varieties of sports, fashion, and news magazines. Through a hands-on group activity, they discover the wide range of available periodicals. For example, a teacher or librarian instructs groups of five or six students to sort through a variety of education periodicals in the following categories:

Scholarly research (Journal of Educational Psychology)

Trends and techniques in the field (Elementary School Journal) Specific subjects (American Music

Teacher, Physical Educator, Science Teacher)

Professional teacher organizations (NEA Today)

After dividing their periodicals into at least three categories, the groups describe what magazines and journals they have grouped and why. Students identify many of the classifications listed above and, in most cases, use similar terms to describe their chosen categories. For the most part, the students become their own teachers.

Database Indexing

Students often have a hard time developing an effective CD-ROM (or on-line) search strategy because they do not understand the way databases are constructed. When they become familiar with the concepts of subject headings and database construction, they should be more flexible in selecting search terms. The following activity, inspired by Ridgeway's model (1993), illustrates these concepts. We distribute a one-page article from a news magazine and ask students to read it and circle terms that are possible subjects. Students are then divided into small groups; each group is asked to agree on three to six terms and to report them to the class. We then show the class which terms were chosen by the professional indexer and discuss why they may differ from the student-selected terms. The database exercise, which takes only fifteen to twenty minutes,

provides students with first-hand evidence of the need to be familiar with the idiosyncracies of the database they are using.

Flowchart

Toward the end of a CD-ROM class session, the librarian provides the students with a copy of a flowchart detailing the basic CD-ROM search process. The focus of the chart is the row of blank boxes along the bottom. The librarian asks the class to suggest ways first to narrow, and then to expand the search results. A previous version of this flow chart included the solutions but was replaced because it did not encourage students to think through the new strategies.

Egan (1992, 67) observes that "we should not let students be so dazzled by the technology that they naively assume that the first ten articles they locate with it are the best ten available." In light of this proclivity to "print and run," class assignments involving electronic resources should not neglect the evaluative aspects of research. To encourage critical evaluation of retrieved citations and abstracts, the teacher requires the students to print out and hand in their computer search strategies. Also, students must print citations and abstracts, highlighting portions of the abstracts that are relevant to their theses. This method supports the idea that library resources and the classroom are closely linked (Mark and Lee 1992).

The active learning methods discussed above combine to address students' trepidation and lack of knowledge about doing research, especially about using electronic databases. With the exception of journaling, librarians and teachers generally spend only one or two full class sessions specifically preparing students to begin their ERIC searching. Because of this time limitation, it is imperative that activities be carefully chosen. Active learning techniques cut significantly into the amount of content the librarian or teacher can cover, but journal entries and class evaluations consistently reveal better understanding than we achieved with the old lecture/demonstration method. Any gaps in content may be bridged by handouts and referrals to reference librarians outside of class time.

Although such efforts call for juggling busy schedules, teachers routinely express appreciation for librarians who are interested in talking about, and improving, class assignments. When librarians and teachers pool their complementary knowledge of students' research needs, a learning situation develops in which students' concerns and anxieties are taken very seriously.

Students and other researchers are relying more and more on computers to find information. However, we do our students a disservice if we expect them to know how to use and to feel at ease with the burgeoning number of information systems currently available. We must develop instruction that addresses students' feelings about this technology while they learn how to optimize its inherent power. In addition, students must learn to think critically about the information their research produces. Active learning techniques like those described have the power to build students' confidence and to engage them in the learning process.

Assignments in the Electronic Library

Design Assignments That Encourage Active Learning by:

- Requiring students to use relevant electronic resources.
- Enabling students to discover not only the advantages of electronic resources, but also the limitations, i.e., many electronic resources cover only the past 10 to 20 years, or less.

Build a Foundation:

- Consult, and possibly brainstorm with a librarian, before you develop your assignment.
- Assign background reading and require students to hand in their preliminary topics.
- Prepare an anonymous list of preliminary topics and encourage the class to identify topics that are too vague or too specific.
- Invite the librarian to teach your class how to use the resource(s) needed to complete the assignment.

Encourage Critical Thinking:

- Require students to hand in printouts of their database search strategies or of the citations they have culled along with their completed assignment.
- Require students to explain why they chose certain citations and why they eliminated others.
- Require students to differentiate between research articles, opinion pieces, and popular articles.

Do Not:

- Ask for Five articles on a topic, without giving further instructions (see critical thinking suggestions above).
- Require use of "scholarly journals" without ensuring that students understand the difference between Psychology Today and The Journal of Psychology, for example.
- Give unrealistic time frames. For a substantial assignment, allow enough time for students to use interlibrary loan service.
- Limit the assignment to a specific journal title, especially one that the library does not own!
- Give a complex assignment without notifying the librarians.

  NOTES

  1. We gratefully acknowledge the Messiah College students in the Teaching of Reading Class and their professors, Sandra Malulla and Steve Hayes, for permission to quote from the students' journals.

  2. Steve Hayes, assistant professor of developmental studies, Messiah College. Letter to Beth Mark, April 11, 1994.

  3.The authors want to credit Sheryl Nisly-Nagele, assistant professor of psychology, and Soo Lee, associate librarian, Messiah College, for fully developing this technique.

DIAGRAM: Figure 1. Improving CD-ROM Search Results

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