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# Teaching Information Literacy to At-risk Students

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## Abstract

Academic libraries play a pivotal role in the success of at-risk students by helping to develop their information literacy skills. This paper describes the experience at the University of Northern Colorado where librarians teamed with the campus program supporting at-risk students to tie a one-credit information literacy course to their freshmen English composition class. The team taught, hands-on course structure is described, along with a discussion of exercises and practical tips.

## Introduction

The James A. Michener Library at the University of Northern Colorado (UNC) offers a one-credit information literacy course structured to introduce freshman to an academic library and the variety of resources available for their research needs. Specific sections of the class are designated for at-risk students. The authors of this paper team taught two of these sections, the first in 2002 and the second in 2003. Based on the outcomes of the 2002 class, the course was restructured to better meet the needs of the at-risk students and, as a result, a laboratory approach to the class was developed.

'At-risk students' is a phrase broadly used in higher education to identify students who, for a variety of reasons, are less likely to succeed in the academic arena than their traditional counterparts. These individuals often lack the study skills, background knowledge, or self-management strategies to be successful (Weinstein 1994, 375). The National Center for Educational Statistics reported that in the fall of 2000 80% of public four year colleges provided remedial classes and programs to assist these students. (Parsad and Lewis 2003). UNC developed such a program within the academic support center for undergraduates known as the Center for Human Enrichment (CHE). In addition to offering tutoring, advising services, technology support, and workshops for all undergraduates, CHE has developed a curriculum for at-risk freshmen. Librarians at UNC worked closely with CHE to link Introduction to Undergraduate Research (LIB 150), the library's one-credit eight week course, with the CHE English classes. Students in the CHE sections of LIB 150 are required to create an annotated bibliography for the paper they are writing in their English composition class.

## Information Literacy Course

LIB 150 meets twice a week for fifty minutes during the first eight weeks of the semester in the UNC Libraries' electronic classroom. The classroom contains twenty-five computer work stations and an instructor's demonstration station. Upon successful completion of the course, students will be able to:

- o formulate a logical plan to search for information, including development of a thesis statement and identifying appropriate search terms for their topic.
- o use access tools to identify information sources, including searching the catalog and indexes using both keywords and controlled vocabulary terms.
- o understand that information sources vary in content and format, which includes differences between popular and scholarly resources and the ability to evaluate the quality, relevance and appropriateness of sources.

- o know how the collections of information sources in the UNC Libraries are physically organized and accessed, including the Library of Congress Classification system.

The course is designed to help students develop a familiarity with a variety of electronic resources and computer applications. These include database searching, word processing, and the use of NoodleBib software to generate their annotated bibliography. (NoodleBib contains electronic forms which lead users through the process of creating a bibliographic citation in either MLA or APA format.) Evaluation components of the course include exercises, quizzes, the 25 item annotated bibliography turned in at the end of the eight weeks, and a final exam. The final exam, given to all sections of the course, was composed of multiple choice, short answer, and essay questions.

### **2002 Class**

With reference and collection development responsibilities taking up a good share of our time, we chose to team teach the class to help with the workload of teaching the course. Following the model described in *The Benefits of Team Teaching* (Morganti and Buckalew 1991), each librarian taught half of the sessions, but both were present for all the classes. The course was structured primarily in the traditional lecture format with the assigned readings and exercises expected to be done outside class time. The exercises were designed to reinforce skills that were needed to produce the annotated bibliography.

To assess students' knowledge of an academic library the course began with a pretest composed of fifteen multiple choice questions. These same questions are also asked on the final exam. Results from the at-risk sections of the course indicated less than half of these students understood the process of identifying and retrieving journal articles, the purpose and arrangement of materials by the Library of Congress Classification system, the reason for a Library of Congress subject heading search, or the role and use of periodical indexes. The results of the pretest also indicated most students were familiar with using an online catalog.

Based on the results of the pretest, we arranged the components of the class so that students would begin with a familiar electronic resource and then move to the unfamiliar ones. After the initial tour of the library, we began teaching subject and keyword searching on UNC Libraries' online catalog. To reinforce these search strategies, Prospector, the Colorado online union catalog of 23 libraries, was demonstrated to the students along with the method of requesting items. Next, two electronic periodical indexes were introduced, Gale Group's Expanded Academic Index and EBSCOhost's Academic Search Premier. Subject searching was presented with Expanded Academic and keyword searching with Academic Search Premier. At this point, the retrieval of electronic full text journal articles was introduced. Lexis-Nexis Academic was introduced as a source for electronic full text newspaper articles. The last database to be presented was Lexis-Nexis Statistical, as an example of an electronic full text reference source.

As the course progressed, we found that students were not completing the outside exercises in time, if at all, to build the necessary skills needed for the next element of the course or to adequately produce an annotated bibliography. From a review of the work turned in and the results of the final exam, we learned that students did not gain understanding of the materials presented in lectures or from discussions of assigned readings. This was apparent by the answers students selected to the following final exam questions covering material presented in class lectures.

- (1) What statement best describes a periodical index?
  - (a) A list of magazines and journals in a library
  - (b) A list of magazine and journal articles grouped by subject
  - (c) A directory of where magazines and journals are located in a library
  - (d) A directory of magazines and journals held on reserve
- (2) How are magazines and journals arranged in the Michener Library?
  - (a) Alphanumerically by Library of Congress classification number
  - (b) Numerically by Dewey Decimal classification number
  - (c) Numerically by Superintendent of Documents classification number
  - (d) Alphabetically by title.
- (3) What is the best resource to determine if UNC Libraries owns a particular issue of a journal?
  - (a) InfoTrac
  - (b) Books in Print
  - (c) The Source online catalog
  - (d) WorldCat

Only 38% of the students answered question 1 and 2 correctly (b and d respectively), and 63% answered question 3 correctly (c). Whereas, when the material was presented as an activity, students showed a better understanding indicated by their answers to the following final exam questions, with 94% selecting (a) the correct answer to question 4 and 88% selecting (a) the correct answer to question 5.
- (4) How are books arranged in Michener Library stacks?
  - (a) Alphanumerically by Library of Congress classification number
  - (b) Numerically by Dewey Decimal classification number
  - (c) Numerically by Superintendent of Documents classification number
  - (d) Alphabetically by title.
- (5) What is the best type of search to perform when no adequate subject heading exists for your topic?
  - (a) Word (Keyword)
  - (b) Title
  - (c) Author
  - (d) Subject

The annotated bibliographies were mostly poorly done, reflecting last minute, careless work. In trying to meet the requirement of twenty-five sources for their annotated bibliography, 50% of their course grade, we found that students were taking whatever they could find to fill their quota, rather than exploring all available sources and selecting ones that best fit their topic. For each of these twenty-five sources there was to be an annotation that included a summary statement and evaluative statement. The evaluative statement was the component of the annotation designed to assess the student's ability to pick information resources based on relevance, quality, and appropriateness. This element was consistently poorly done. These results forced us to revisit the course design before team teaching the course again in 2003.

### **Changes Made to the Course**

One of the first changes we made was in the structure of the class. Based on our review of the 2002 class, we learned that the more successful lessons had less time in lecture and more time for in-class student activities. We restructured the class sessions to have thirty minutes of demonstration or explanation followed by twenty minutes of an active learning component. With an enrollment of twenty-one students in 2003, each student had access to a computer work station. Every session included in-class time for students to practice or apply the element of research introduced that day. This less formalized structure encouraged shy students to speak up and seek help. Studies support this structure as at-risk students prefer hands-on learning with concrete examples and the chance to practice skills (Jacobson 2001, 111). Don Tapscott, author of books on the digital revolution, states that students who grew up with the internet

prefer learner-centered education, where the emphasis is on how to navigate through information with a teacher as a facilitator (1998, 145). Furthermore, he describes 'N-Gen' children as active users as opposed to the passive observers of the previous television generation:

Children control much of their world on the Net. It is something they do themselves; they do not just observe, they participate. They inquire, discuss, argue, play, shop, critique, investigate, ridicule, fantasize, seek and inform....For the first time ever, children are taking control of critical elements of a communication revolution (1998, 25-26).

This attitude transfers to the classroom where the students desire to be in control of their own learning. Students will be more enthusiastic if they are able to 'discover' a fact or concept on their own rather than reading or hearing about it (Tapscott 1998, 144).

Another issue that impacted student success during the 2002 class was lack of regular attendance. Despite the CHE policy requiring attendance reports from faculty working with their students, we had students who chronically missed class. In an attempt to address this problem with the 2003 class, we gave bonus points for attendance and nongraded in-class activities.

### **Changes to Exercises and Quizzes**

In this new structure we changed the outside assignments to in-class active learning exercises. Outside class time was to be spent on the annotated bibliography. As an example of an in-class activity, we had each student locate a book about their topic in our online catalog and then retrieve it from the collection. Later in the course, students physically located a journal that contained an article they found using a print periodical index. Finally, students located and retrieved government publications, which at UNC Libraries are housed separately under the Superintendent of Documents classification system. Team teaching allowed one librarian to stay in the classroom helping students do their searching, while the other was in the physical collection to help them retrieve their resources.

Instead of the traditional lecture on the difference between a scholarly journal and magazine, we attempted to make the lesson more student-centered and active through the use of Blackboard, an online education software platform added to the course in 2003. The students read three articles that were posted on Blackboard and then determined what type of article each of the readings represented, based on a chart of characteristics of the different types of periodicals. As a follow-up, we facilitated a discussion in which students had to defend their classification. During this exercise the students expressed more interest and understanding than in the previous year, which correlates with a 1997 study by Katherine Dabbour where active learning methods generated a 91% positive response from those surveyed in 10 freshman library instruction classes (Dabbour 1997, 305).

Quizzes were also administered through Blackboard allowing students to have immediate feedback on their results. We revamped the physical tour of the library by adding a reading and a quiz to reinforce the location and arrangement of the important service points and collections that they toured. Another quiz covered the elements in a journal article citation. Grades for the quizzes, as well as assignments, were maintained on Blackboard so that students could monitor their progress.

### **Changes to the Annotated Bibliography Project**

At-risk students often lack the understanding and prior knowledge of academic tasks so it is difficult for them to set realistic goals to complete those tasks (Weinstein 1994, 378). This was true for our students when it came to the organization and completion of the required annotated bibliography. In order to help them, we provided a framework for them in 2003 by requiring a thesis statement by the second week and requiring completion of the first third of the bibliography by the fourth week. This forced the

students to get started on their bibliography sooner, giving them time to resolve any questions they had about the assignment. For example, any students having difficulty working with NoodleBib could get individual assistance. As students worked on the bibliography, they began to realize how long it was going to take them to complete the project. In addition, this provided the students a chance to see how the annotated bibliography would be graded.

As students were having such difficulty writing the evaluative component of the annotation, we devoted two sessions to teaching students how to evaluate information. In the first session, students were introduced to the elements of evaluation and shown how to find book reviews and biographical information for the authors of their sources. A second session included an exercise on the evaluation of web sources. We also showed students examples of annotations from past LIB 150 courses. With team teaching, we found we could address the same topic more than once using a different approach from each librarian. We found that repetition was productive, without seeming redundant.

### **Evaluation**

The final exam from the second year showed a marked improvement. In comparing the answers the students gave in the second year to the questions listed above, 53% answered question 1 correctly, 79% answered question 2 correctly, and the percentage of correct answers to question 3 remained the same at 63%. Students reflected an improved understanding of the following question, with 79% selecting (c) the correct answer over 69% from the previous year. What is a characteristic of Expanded Academic Index?

- (a) Contains only full-text
- (b) Contains no full-text
- (c) Contains some full-text
- (d) Contains only bibliographic citations

In addition, students also improved in their overall understanding of the research process as demonstrated by the quality of their answers to a final exam essay question asking how they would go about finding information on a given topic.

The annotated bibliographies from the second year also showed improvement. In general, the annotations were more thoughtful and the choices of resources were more relevant to their topics. Unlike the previous year, articles were selected for their relevance rather than whether they were available full text electronically. The required element of a government publication was fulfilled with much greater ease in 2003 with the in-class activity, than in 2002 when they tried to do it on their own.

A comparison of the students' grades in LIB 150 and the English composition class revealed a closer correlation in the second year than in the first. In 2002, 6% of the students received a grade of an 'A' in LIB 150 compared to 38% in their English class, 37% received a 'B' in LIB 150 compared to 31% in English, and 37% received a 'C' in LIB 150 compared to 15% in English. In 2003, 53% of the students received a grade of an 'A' in LIB 150 compared to 50% in their English class, 23% received a 'B' in LIB 150 compared to 26% in English, and in both classes 8% received a 'C'. This correlation revealed that in the second year the students produced the same quality of work for LIB 150 as they did in their English class. We concluded from this that the students had a greater understanding of the concepts taught in LIB 150 and demonstrated an increased ability to apply these concepts to their research.

## Conclusion

In teaching LIB 150 to at-risk students, we found that the hands-on, team teaching approach was a positive experience for both the students and librarians. This approach allowed us to create lessons that actively engaged the students, forced them to practice online searching skills, and encouraged students to begin their annotated bibliography project in a timely manner. Attendance also improved with the hands-on approach, although there were still some students who did not attend class regularly and failed the course. With two librarians, the needed repetition of concepts could be done in a less onerous way. Students received much more one-on-one assistance than could otherwise have been provided in a more traditional classroom setting. In working with at-risk students, we found that the structure of the classes, with students working on assignments during class time, permitted the students to ask questions in a less public way and as a consequence they were more willing to ask them. From our experience, the following elements are central to successful implementation of the hands-on, team teaching model.

- o Divide the course content so that each librarian leads certain lessons based on their experience and expertise.
- o One librarian is designated as the lead instructor to handle administrative duties.
- o Both librarians attend every session.
- o Grading of assignments is shared, with each librarian grading lessons that they led. Grading of the final project and test is evenly divided between the two librarians based on previously agreed upon criteria.
- o To ensure the students make use of the hands-on portion of the class, have students turn in or have their work checked before they are allowed to leave.
- o Assignments or quizzes should incorporate the important information from readings, since students do not automatically read on their own.
- o When using technology, always have a backup lesson plan, in case connectivity becomes an issue.

By keeping these elements in mind, librarians can create a positive introduction to the academic library for at-risk students. These students will then possess the skills needed to use the library for other academic projects.

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