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ABSTRACT

This practicum was designed to help doctoral education students entering the Child and Youth Studies (CYS) program at Nova Southeastern University (NSU) feel more confident about accessing online resources and more comfortable about using online information technologies for their research. A method was developed for integrating bibliographic instruction (BI) into the curriculum that was implemented for CYS clusters starting the 1998/1999 academic year. CYS students were provided with face-to-face library instruction that built sequentially and developmentally. Training progressed from the program orientation to advanced training at the practicum orientation, and finished with optional hands-on training sessions at the CYS 1999 summer institute. BI was coupled with three performance-based library assignments. The on-site training and assignments were supplemented with a variety of print and "just-in-time" Web materials, as well as one-on-one help delivered synchronously and asynchronously. Doctoral CYS students benefited by having the library instruction integrated into their curriculum. Student satisfaction levels on surveys went up, use of Web resources increased, and, most importantly, students were better prepared to do the research for the literature reviews for their practicums. (Contains approximately 130 references.) (Author/AEF)

Integrating Bibliographic Instruction for Distance Education Doctoral Students into the Child and Youth Studies Program at Nova Southeastern University

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ITDE Cluster #2

A Practicum Report Presented to the Ed. D. Program in Instructional Technology and Distance Education in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

Nova Southeastern University
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APPROVAL PAGE

This practicum took place as described.

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This practicum report was submitted by Johanna Tuñón under the direction of the advisor listed below. It was submitted to the Ed.D. Program in Instructional Technology and Distance Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

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Al Mizell, Ed.D., Adviser

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This practicum was designed to help doctoral education students entering the Child and Youth Studies (CYS) program at Nova Southeastern University (NSU) feel more confident about accessing online resources and more comfortable using online information technologies for their research.

The writer developed a method for integrating bibliographic instruction (BI) into the curriculum that she implemented for CYS clusters starting during the 1998/1999 academic year. She provided CYS students with face-to-face library instruction that built sequentially and developmentally. Training progressed from the program orientation to advanced training at the practicum orientation, and finished with optional hands-on training sessions at the CYS 1999 summer institute. BI was coupled with three performance-based library assignments. The writer supplemented the on-site training and assignments with a variety of print and "just-in-time" Web materials as well as one-on-one help delivered synchronously and asynchronously.

Doctoral CYS students benefited by having the library instruction integrated into their curriculum. Student satisfaction levels on surveys went up, use of Web resources increased, and, most importantly, students were better prepared to do the research for the literature reviews for their practicums.

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Chapter I: Introduction

Description of Community

Nova Southeastern University. Nova Southeastern University (NSU) is an independent, nonprofit, co-educational institution located in Ft. Lauderdale, Florida. NSU's enrollment of 16,829 students for the fall semester of 1997 made it the largest private institution of higher education in the south at that time. NSU offers learning opportunities that extend from infant to senior citizen programs.

Distance education at NSU. NSU was chartered by the state of Florida in 1964. Since its founding, the university has focused upon the delivery of non-traditional graduate education to working adult learners (Manburg, 1983) and on educating students for leadership roles in their professions. Nova offers a wide selection of distance courses of study for bachelor's, master's, educational specialist's, and doctoral degrees. By 1999, NSU was offering distance programs for graduate studies in business, education, computer sciences, pharmacology, the social sciences. NSU also offers distance programs in undergraduate business, education, and the behavioral sciences. NSU delivers field-based programs at 79 sites in Florida, 66 sites in other states, and 13 international sites (MacFarland, 1996b). NSU had about one-half of its students

in distance programs (Hesser, 1995; Research and Planning, 1997), and 44% attend traditional classes in South Florida.

Technology played an important part in delivering distance education at NSU (Groff, 1995; Mizell, Hepler, & Kontos, 1995; Tuñón, 1997; Tuñón & Pival, 1997). Manburg (1983), Mizell (1991), Hesser (1995), and Terrell (1996) have all documented how Nova Southeastern University has consistently used technology to stretch the parameters of distance education.

NSU's Mission. NSU's mission statement is to "prepare students for lifelong learning... [and] foster inquiry, research, and creative professional activity" (Revised [NSU] Mission Statement, 3/24/97). As a result, academic research and practical applications of theory play critical roles in the academic experience at NSU. Because NSU's programs are designed for adult professionals who are already working in the field, these programs design courses that have strengthened and tested classroom learning through applied research and service in both the workplace and community.

NSU's mission envisioned technology playing a central role in systemically strengthening and sustaining an educational process for distance students that was neither time nor place bound. NSU has been actively transforming its dream for the role of technology into a reality. Nova, for example, aggressively funded the university's technology infrastructure and allocated an ample budget for information

technology resources. Between 1994 and 1997, NSU added an additional quarter million dollars to the annual library budget for online indices and full-text resources and paid more than a half million dollars for an online public access catalog. This investment stimulated the innovative integration of technology and instruction in the classroom and allowed distance students to access NSU online library resources from anywhere in the world.

Child and Youth Studies.

The Fischler Graduate School of Education and Human Services (FGSE&HS) offered six different education-related graduate programs in 1998 including Programs in Education and Technology. Programs in Education and Technology (PET) in turn offered graduate degree programs in Child and Youth Studies (CYS) and Instructional Technology and Distance Education (ITDE). In 1999, Child and Youth Studies became a separate program while ITDE was moved into the newly formed Center for Research and Distance Education. In the spring of 1999, Child and Youth Studies (CYS) merged with Life Span and Care Administration to form a new department called Child, Youth, and Family Studies (CYFS).

Writer's Work Setting

The writer's work setting is the Einstein Library. This is the university's principal library, serving the undergraduate student population and graduate programs in business, computer science, and the social sciences

including education, psychology, and social and systemic studies.

The Einstein Library has a broad-based mission to "support, enhance, and collaborate in the instructional, research, and services activities of faculty, students, and staff" (Mission Statement of the [NSU] University Libraries, 1997).

Distance Library Services is one of the departments within the Einstein Library. The name refers to an official department called Distance Library Services, but it also refers to a variety of library services delivered to NSU's distance students. The Distance Library Services department focuses upon organizing and delivering bibliographic instruction for field-based students. Other document delivery services offered under the umbrella of Distance Library Services, however, are actually provided by staff from the Document Delivery Department.

Writer's Role

As Head of Distance Library Services in the Einstein Library, the writer promotes a model of library service and bibliographic instruction that stresses the development of the research ability of NSU distance students to seek, find, and process information. The writer consistently emphasizes the importance of providing students with the library skills necessary to navigate the profusion of new resources (Schement, 1996).

Toward this end, the writer played a central role in NSU's paradigm shift from traditional document delivery to a new vision for Distance Library Services that promotes information technology and bibliographic instruction (Tuñón & Pival, 1997). Her leadership role in this area started with her introduction of the idea that the university acquire online databases from FirstSearch and Information Access Corporation in 1994. The provision of access to online information through the Electronic Library was recognized as an important and integral part of Nova Southeastern University's services to distance students (Mizell, Hesser, & Marcus, 1993).

Just as important, the writer began to identify and develop a variety of ways for integrating library training into distance programs at Nova Southeastern. The writer urged the library administration to adopt a number of strategies for providing library training (Hillesheim, Abbott, & Tuñón, 1997). In 1995, she began organizing Einstein librarians to start delivering training sessions at sites. At the same time, the writer began exploring methods of delivering library training using new technologies (Tuñón & Pival, 1997) such as CUSeeMe and compressed video.

Chapter II: Study of the Problem

Problem Statement

The problem that was addressed in this practicum was that Nova Southeastern University (NSU) expected distance students in the Child and Youth Studies (CYS) Program to do research as part of their course work; however, many of the students in these field-based programs varied in their mastery of the library research skills necessary to access and use the online library resources that the university provided.

Problem Description

Research played a critical role in the academic process at Nova Southeastern University. As doctoral students in an education program, Child and Youth Studies students were expected to know how to access information, evaluate it, and utilize it in their courses and for their doctoral literature review that was a part of their practicum process. Research skills were even more critical for students in distance programs who lacked direct access to materials in the Einstein Library on the main campus. At that time, NSU was spending over $500,000 per year for subscriptions to more than 100 scholarly indices such as ERIC, PsycINFO, and Digital Dissertation to provide all students with equal access to core resources for their research. Access to these scholarly online indices and full-text databases leveled the playing field between students on

and off campus. Students who did not avail themselves of these resources seriously impeded their research efforts.

The problem that this practicum addressed was that NSU students had varying levels of the skills needed to make use of these resources at the time that the practicum was conceived and implemented. Students often described their feelings of discomfort with their ability to handle these new resources and their desire for the library to provide more training and training that came earlier in their academic careers.

Problem Documentation

Evidence gathered from SACS reports, comments on student training satisfaction surveys, user statistics, university and student surveys, and staff observations indicated that distance students at NSU had varying levels of proficiency with online research tools provided by the library.

Research and Planning user satisfaction surveys. A number of reports from the department of Research and Planning at Nova Southeastern University issued in 1996 and 1997 indicated that student satisfaction ratings with library instruction levels did not reach the university's target satisfaction level of 4.0. Staff in Research and Planning conducted user satisfaction surveys for students and graduates from the Fischler Center for the Advancement of Education (which later became known as the Fischler

Graduate School of Education and Human Services), the School of Business and Entrepreneurship, and the School of Computer and Information Science. These surveys all used multiple choice and Likert scales. In the Research and Planning report (MacFarland, 1996d) on the students in the Fischler Center for the Advancement of Education (FCAE), the on-campus satisfaction mean of current students in FCAE was 3.5 while the mean for distance students in the same programs was 3.4. The study concluded that "on-campus respondents indicated higher levels of satisfaction with technology opportunities and access to information through technology than their off-campus counterparts" (p. 15). A Research and Planning report (MacFarland, 1996a) of students in the Fischler Center for the Advancement of Education found that graduated students had a satisfaction mean of 3.6 with library instruction.

Research and Planning studies in other centers at NSU showed a similar pattern of satisfaction rates with library instruction. A Research and Planning report (MacFarland, 1996b) of graduates of the School of Computer and Information Sciences (SCIS) found that the mean satisfaction level of students in this field-based program was 3.5. The Research and Planning report (MacFarland, 1996e) on SCIS students taking classes in the program at that time found a slightly improved mean satisfaction level of 3.6 for the library orientation program. The Research and Planning

report (Atherton, 1996) of the School of Business and Entrepreneurship (SBE) found that "approximately one-third of the respondents were dissatisfied with the availability and access to library resources and services" (p. 8). It is important to note that at the time that the survey had been completed, distance students in SBE were getting no site instruction and were provided with few instructional materials to help them. The particularly low mean satisfaction level of 3.0 found among those students reflected the students' dissatisfaction with being offered no library instruction at field-based sites at the time of the survey.

Two Research and Planning surveys that looked at students throughout the university demonstrated a university-wide pattern of less services being offered to students who attended classes off campus than to students who attended classes locally. One Research and Planning report (MacFarland, 1996c) compared South Florida students with students outside the three-county area. The report concluded that satisfaction levels with the online library training was 3.4 for South Floridians and only 3.2 for students that had been in the program outside of South Florida (p. 16). The report concluded that the library services being offered clearly favored South Floridians and that distance students had not been getting equal access to the kind of training offered students at the main campus.

The report specifically reminded readers that SACS had charged all academic institutions delivering distance education to provide library instruction to all students and faculty both on and off campus.

A second university-wide Research and Planning survey focused specifically on the library and library services. It also found that satisfaction levels of students both on and off campus were less than 4.0 for online database instruction, hands-on labs, online training materials and video, and library tours and orientations (MacFarland, 1997).

Einstein Library training satisfaction surveys. The results of several hundred student training satisfaction surveys that had been routinely administered after library training sessions during 1996 and 1997 were examined. The library surveys included multiple choice, Likert scale questions, and short answer items. Almost 98% of the students completing the library training user satisfaction surveys recommended that future students should also receive training. Student recommendations highlighted the value that students who had received library training put on the training they had received and the importance they put on other students also receiving bibliographic instruction. This was important in light of the fact that there were still distance students at NSU who were not being offered

library instruction at any point during their careers at the university.

Students' written comments on those surveys also highlighted the fact that students did not always feel that they were getting library instruction at the time they needed the instruction. For example, GTEP (Graduate Teacher Education Program) students in Melbourne, Florida, who had library training on September 27, 1997, commented on their need for library instruction earlier in their programs. Remarks on surveys recommended: "This needs to be completed the first session or even before!," "Very important! -- This class needs to be the first class in the Research Course," "I would recommend that this presentation be done as soon as possible, preferably the 1st class," "Do at the beginning of the course," "It will be good if they include some literature of this service during orientation," "Do at 1st class!," "This should be presented on the 1st class session, not the 4th one," "Conduct session 1st week of school," and " But during 1st class."

Students' requests for training to be offered sooner only occurred in Graduate Teacher Education Program, Center for Psychological Studies, and the School of Business and Entrepreneurship. These were all programs that did not offer library training to students at the beginning of their programs. Almost eight percent of students completing surveys in these particular programs wanted either more

training or earlier training. In contrast, students in programs that offered training at the beginning of the program did not make these types of requests in their satisfaction surveys.

Informal in-class surveys. Librarians informally polled students in Programs in Education and Technology about their self-assessment of their preparedness to use the university's online resources. Only 17 of 64 students, who began their work in the Programs in Education and Technology (PET) in the fall of 1997, reported that they felt comfortable using online library resources for research before receiving any kind of library instruction at NSU.

Southern Association of Colleges and Schools (SACS). The accreditation process provided NSU with the opportunity to be independently evaluated as an institution. Part of this evaluation process focused on library services for distance students. In this process, SACS held all institutions that wanted to be accredited or reaccredited up to high standards. These standards required that approved academic institutions

> must provide students with opportunities to learn how to access information in different formats so that they can continue life-long learning. Librarians must work cooperatively with faculty members and other information providers in assisting students to use

resource materials effectively (Southern Association of Colleges and Schools, 1996, p. 57).

As discussed in the last chapter, libraries were responsible for providing distance students with the same or equivalent library training as they offered students on the main campus. The library was supposed to accomplish this directly through instruction and collaboratively with the faculty through course work.

Comments gathered during site visits of teams from the Southern Association of Colleges and Schools (SACS) identified a number of distance students' concerns. The most comprehensive criticism of library instruction came from the Phoenix SACS site team. The team reported that Electronic Library training "was a source of great concern and dissatisfaction...because of lack of meaningful and useful instruction in its use" (Manton, Fatzer, & Sims, 1996, pp. 16-17). The team criticized the library training manual as being more descriptive than tutorial and the fact that not enough effort had been made to provide hands-on training at the site. The team also noted that students who could use the system still labored under the completely erroneous idea that everything they needed could be located in the Electronic Library. Based on student input, the Phoenix SACS team recommended that "the Library provide students with more effective training in how to access information

provided in electronic formats, working cooperatively with faculty members in programs at the cluster sites" (p. 17).

Based on interviews with students at NSU field-based sites, several SACS site teams also reported that some distance students who had received library training wanted additional library instruction. SACS site teams at both the Nassau and Freeport sites and at the Northern Virginia site reported that some students "complained that they were not taught to use the access system [and that] their training in use of the electronic library was very inadequate" (Norris & Richardson, 1996, p. 3). Along the same lines, the Wilmington SACS team reported that "some participants indicated that they could use some more assistance"(Barron, 1996, p. 17) in how to use library resources.

Based on the site visits, the final recommendations in the SACS report stated categorically that "students admitted to knowing that library resources are available through electronic means, but they did not know how to access the system, nor had they [received] instruction" (Southern Association of Colleges and Schools Commission on Colleges, 1997, p. 140). As a result, SACS recommended that "the committee recommend[ed] that Nova Southeastern University demonstrate that it is providing adequate and appropriate access to information technologies and systems and training for their use at all locations where educational programs are being provided [emphasis added]" (p. 141).

Causative Analysis

The documentation on NSU student attitudes and skills indicated that there were a number of factors at work that accounted for distance students varying in their ability to do online research. Some factors impacted all students while others were unique problems for distance students.

People. The Einstein Library provided instruction for a wide variety of students with diverse backgrounds and learning styles. Demographic statistics from Research and Planning (1997) showed that 91% of graduate students at NSU were adults. Students in FCAE were also culturally diverse. Demographic statistics showed that over 20% of NSU graduate students in 1995 were from various ethnic minorities (Research and Planning, 1997). More specifically, students in the doctoral programs at the Fischler Center for the Advancement of Education were adult learners with an median age of 42 years (Research and Planning, 1997) who usually already had jobs and were often returning to school after a prolonged hiatus. Although doctoral students in Child and Youth Studies were educators who worked with children, they came from a wide range of backgrounds and subject disciplines. They brought a variety of personal experiences to their academic experiences.

Students, particularly in distance programs, did not feel that they had received library instruction at the point in their programs that they needed the instruction. Some

students were not getting training in how to do research early enough in their programs. Comments by students on user satisfaction surveys, to SACS site teams, and at library training sessions indicated that some students felt that library instruction had come too late to be of use in their beginning courses. Interviews with students and FCAE administrators revealed that students in some FCAE programs were not being offered library training until they attended a summer institute. The writer found that students who waited for a summer institute to get library instruction could wait as long as two years for the opportunity to get the training.

Some students forgot the library training they received because either (1) the training came before they had a need to use that particular skill or (2) because the training came at the beginning of their program when they were being overwhelmed by all kinds of information and new experiences. Although students themselves rarely identified training coming too early in the program as a difficulty, the librarians noted that students who had received training at the beginning of the program had forgotten much of the information by the time they needed to apply it to course work. Students were overwhelmed with information at a time when they were being bombarded with a wide variety of information about their courses and the program. They often did not yet have a research assignment that made the

instruction pertinent for them and the lecture format of the training did not actively engage them.

There were students in graduate programs at NSU who lacked the basic library competencies and knowledge infrastructure that the library training built on. One problem area was that NSU students had widely varying computer skills. NSU librarians reported that there were students in the online training sessions who did not know how to use a mouse, how to get on the Web, or how to use email. Some students in Child and Youth Studies, for example, did not have adequate computer skills to be able to comfortably handle library research even though CYS mandated that students possess specified computer skills when they entered the program. Students were not provided with the university resources to learn these skills independently.

NSU students also varied widely in library skills. Librarians and Distance Library Services staff reported cases of doctoral education students who did not know or understand the difference between the two types of materials indexed in ERIC or how to go about acquiring these materials. Administrators in Programs in Education and Technology revealed in interviews with the writer that they recognized that some CYS students did not have the basics to conduct a literature search. One CYS administrator, for example, described a student who did not understand the difference between primary and secondary sources. Although

many students might start the CYS program with adequate research basics, librarians could not assume that their bibliographic instruction could immediately begin with how to conduct research for a doctoral literature review.

Materials and Equipment

The Einstein Library had a problem delivering library training to all NSU students because it was understaffed. One problem for the library was the sheer number of students that needed to be offered library research training. NSU had 15,492 students (Research Planning, 1997) in 1996. Even by 1998, the Einstein Library only employed seven full-time librarians in public services to serve students both on and off campus.

The library needed to provide library instruction for students who did not take classes at the main campus. The wide range of circumstances and conditions under which librarians had to deliver library instruction also created problems for librarians. Einstein librarians traveled to provide training for CYS and other clusters in a variety of settings that provided a variety of technological and telecommunication resources. Librarians providing "one-shot" training for CYS students in the four new clusters in the fall of 1997 found that they did so three of four times in hotel conference rooms in different states.

Procedures. The Einstein Library had difficulty in a number of areas. First of all, librarians had difficulty

covering all the content that students needed to know, particularly when librarians only get one opportunity to directly interact with students and that time was often limited to 60 minutes or less. Discussion with librarians and program administrators revealed that librarians might get as little as one half-hour during the lunch break to provide students with information about how to use online resources to do academic research. The number of online databases and interfaces that NSU students had access to was steadily growing. Librarians did not have enough time to discuss library basics such as explaining how the ERIC database was organized, describing how to do a doctoral search, and providing tool-specific instruction for a variety of products.

The library statistics on computer searches during the first half of 1997 revealed that 751 searches had been requested by FCAE students during that time period. FCAE requests constituted 63% of all computer searches done for NSU students. Students requested these mediated searches in spite of the library's efforts to provide library training for all FCAE students in 1996/1997. The Distance Library Services computer search request statistics for the first two quarters of 1997 were used, and the statistics were gathered by the staff in Distance Library Services from the library's FoxPro database. These statistics were particularly troublesome to librarians because the

statistics suggested that students were either unwilling or unable to do their own research.

The library had trouble integrating library instruction into the curricula at NSU. Because of the sheer number of programs at NSU and because of the administratively decentralized organization at NSU, the library had to work on a program-by-program basis to get library instruction integrated into the curricula. The Einstein Library had to prompt and prod some of these programs to actually implement the promised integration of instruction into specific courses. The fact was that some faculty and administrators resisted taking any time out of their curricula for library instruction while others did not see the need for more than a "one-shot" approach to teaching library skills.

Relationship of the Problem to the Literature

In preparing for the literature review on bibliographic instruction and library skills for doctoral education students in a distance education program, the writer located articles in the fields of education and library science using ERIC, Library Literature, LISA, WorldCat, Periodical Abstracts, Expanded Academic Index ASAP, Digital Dissertation, and the World Wide Web. Areas researched included bibliographic instruction, distance library services, computer-assisted instruction, Web-based tutorials, library skills, library assessment, active learning, and library collaboration.

Much of the literature on topics related to bibliographic instruction and distance library services took the form of articles that described the need for improvements at academic institutions (e.g., "this is how it should be done") or that reported experiences from the field (e. g., "this is how we did it"). These snapshots of real or idealized library training rarely provided concrete research to back up their assertion, and the research that did exist most often took the form of surveys (Morner, 1993) that reported students' self-assessments of what they had learned about library research or used untested instruments.

Defining library instruction and bibliographic instruction. Before examining various problems for delivering bibliographic instruction to distance students, it was necessary to define several terms that were frequently used in the literature. The terminology librarians used had changed over the last few decades, reflecting both the increasing levels of instruction that librarians were striving for and the increasing amounts of technology to be mastered in the research process. For the purposes of this paper, bibliographic instruction and library instruction were used interchangeably to refer to the training librarians offer students in how to find and use both print and electronic information for their research.

Students who lack basic library skills. Article after article in library literature cited examples of students who were not coming to schools of higher education with the necessary basic library research skills they needed for their course work. McNeer (1991) stated that "Year after year students arrive on our campuses unable to use our libraries" (paragraph 2). He was concerned that they did not understand the relationship between library research tools and the methods used to search specific databases. He was also concerned that they were not applying what they learned one year later to their course work.

In one of the few empirical studies, Maughan (1995) documented that students could not accurately assess the quality of their own library skills. He found that even though 93% of political science and sociology students graduating from the University of California at Berkeley judged their library skills to be good or excellent, 63% of the students actually tested as poor or failed completely on the library skills tested.

A much smaller body of literature focused specifically on the inadequate library skills of graduate education students. The research at the University of West Florida by Franklin and Toifel (1994) showed that graduate education students did not have adequate library skills to handle graduate research. The pretest and posttest scores demonstrated a significant improvement that Franklin and

Toifel attributed to the bibliographic instruction students had received.

Rutgers librarians (Fabiano, 1996) found that their graduate education students were not "efficient or effective library users" (p. 160). Fabiano used a library survey to document that these students were receiving little help in doing researching for their dissertations. A survey of 425 students verified that students needed help in learning how to use computers, how to use the Internet, and how to use online resources.

Recognizing the lack of library research skills by many doctoral education students, a doctoral candidate (Morner, 1993, 1995) developed an instrument for evaluating the library research skills to help these students assess whether they were prepared to start their literature reviews. Her test randomly sampled 149 students at three private universities and found that the average doctoral education student could only get about half of the questions correct. Morner concluded that students needed to be tested to evaluate their degree of readiness for doing library research.

Lack of institutional support for library instruction. Academic institutions did not always see the importance of providing, promoting, and funding library instruction in general and distance library services in particular. There was also a lack of understanding of the benefits of

integrating library instruction into programs both on and off campus.

Library instruction and the importance of research was sometimes ignored, particularly in field-based courses. When Hammer (1994) surveyed Northern Central Association of Colleges and Schools, he found that library instruction for distances students was not being addressed at all by 72% of the institutions surveyed. He concluded that the general criteria issued by regional accreditation organizations were not the best method for addressing inadequate library services for distance students.

The literature suggested that there was a problem at many institutions with incorporating research into distance courses. Burge, Snow, and Howard (1989) argued that distance students were excluded from adequate library services when the university courses did not integrate library services into the educational framework of academic programs. They based their conclusion on a survey of librarians in northern Ontario and follow-up interviews. Slade's survey (1991) of institutions in Canada, the United States, Great Britain, and Australia came to similar conclusions. He found that libraries in all these countries had problems getting faculty to collaboratively include the librarians in the designing and delivering of distance programs. Jenkins (1997) called for librarians to be active participants on the course development teams for distance students because

of their knowledge of the availability of resources and of ways of defraying course material costs for students.

Bibliographic instruction (BI) was not always systematically integrated into students' academic programs. Greer, Weston, and Alm (1991) described a pattern of hit-or-miss library instruction at the University of Northern Colorado. Basic and subject-specific bibliographic instruction was arranged on an ad hoc basis at the request of faculty members. This made any systematic integration of library instruction into the curriculum almost impossible.

Niles (1997) argued that haphazardly-offered library instruction that was delivered in isolation from the curriculum failed to integrate library training into the fabric of the institution and failed to motivate students. Niles maintained that the bibliographic instruction program at SUNY Cobleskill only created the illusion that students were learning how to do research. Statistics from eight semesters of the independent studies library skills course revealed that students were passing the library skills courses but that they had not developed usable research skills that carried over into course work. Niles concluded that this happened because the students were not self-motivated or independent learners.

Problems with providing effective bibliographic instruction. Librarians recognized that bibliographic instruction was not always effective. They hotly debated the

best methods of delivering bibliographic instruction and of promoting information literacy. Dusenbury and Pease (1995) described how traditional methods of instruction did not provide instruction at the optimal moment for learning to occur, that moment when individuals had some kind of information need and were ready to learn. They suggested that the traditional bibliographic instruction in structured classes was a "useless exercise" (p. 101) because librarians were not providing the training at the "teachable moment" for students.

Finding methods of motivating students' interest in bibliographic instruction has often been a problem that concerned librarians. Dixon, Garrett, Smith, and Wallace (1995), for example, recounted how students in the University of Tennessee at Knoxville's required Basic Skills Program were bored by a lecture format for instruction. Students at Louisiana State University (Poirer, 1997) complained that the for-credit library course was "`too boring'" (p. 138). As a result, they didn't put much effort into the subject. Fritz (1991) noted that librarians also had problems getting distance students to attend voluntary library instruction at the University of Saskatchewan. Fritz concluded, however, that the problem of motivating distance students was no more difficult than the problem of motivating on-campus students.

Article after article documented the problem libraries had with insufficient time to provide adequate library instruction. The issue of insufficient time to adequately cover the material has been an ongoing issue for librarians who provide bibliographic instruction on traditional academic campuses. Wittkopf (1993) commented that hour time slots allotted bibliographic instruction was already inadequate ten years ago. Gremmels (1995) argued "that the one-shot dump truck method just doesn't work" (p. 91). Duesterhoeft and Cunningham (1996) explained that because many librarians have to cajole instructors to use class time for library instruction, they "try to squeeze as much information as possible" (p. 74) into that time.

Davidson (1994) described the dilemma of having insufficient time in a one-hour library training session to train students who had poor computer skills. Davidson explained that these students needed help in how to use the technology and instruction in the finer points of how to develop research strategies. She described how the uses and complexity of the technology has increased and forced libraries to focus on strategies rather than tools.

Technology was part of the reason that librarians needed more time to offer library training. A number of articles addressed this issue. Stelling (1996) found that Binghamton University's older returning students who often lacked computer skills needed more help than they could get

in an one-hour session. Piette (1995) argued that information literacy was a complex process that couldn't be accomplished in one training session. Buchanan, Luck, and Dulniak (1996) described the difficulty of providing instruction on the use of both electronic and paper resources in the limited time available for library training sessions at Austin Peay State University. Similarly, Martin (1995) discussed the difficulty of covering proliferating electronic databases with varying software interfaces in a one-hour library training session.

Lack of time for library instruction was even more of a problem for instruction at distance sites where librarians often had only one opportunity to meet with students at their sites. Witucke (1995) reported having insufficient time to cover the necessary materials when she visited off-campus sites for Central Michigan University. Marshall (1991) described how field-based students at Northwestern University were provided less time to train students than was provided for students at the main campus.

The sheer numbers of students getting library instruction contributed to the problem of providing quality training. The literature showed that the sheer number of students presented a staffing problem for bibliographic instruction for students in field-based programs. The problem was also complicated by the fact that they are scattered in small groups over a wide area. It took more

effort for librarians to reach these groups, particularly in site visits. Collier (1991) and Witucke (1993), for example, both described the challenges of providing bibliographic instruction for students at more than 50 Central Michigan University sites. Pival and the writer (1998) described the challenges of delivering library instruction to students scattered throughout the United States as well as at 13 international sites.

Morner's (1993) dissertation found that the adult doctoral learners in her study had a wide range of library skills. Morner also noted that education students had a wide variety of work experiences ranging from teaching to school administration and even to experience completely outside the field of education. Morner credited students' diverse backgrounds for the reason that less than half of the students participating in her study had received any kind of library instruction.

The literature noted that adult learners have been nontraditional library users. Knowles's (1984) seminal work concluded (1) that adult learners learned best when they had a concrete reason to learn, (2) that adults were self-directed and independent learners who would seek out the information that they needed to learn, and (3) that the varied background and experiences of adult learners meant that they did best with individualized learning. Knowles suggested that adults were intrinsically motivated rather

than responding to external inducements such as grades. They compensated for any gaps in their educational backgrounds by proactively seeking the information they needed.

Diverse learning styles presented a challenge for effective library instruction. Carr (1989) warned library instructors not to make an unconscious assumption that all adult learners learned best about research and the library in the same manner as the trainer. He argued that librarians needed to "enter the stranger's context and situation" (p. 41) to better know how to reach that person. He suggested that librarians could better understand the needs and contexts of adult strangers by interviewing five individuals in depth.

Students came to library training with a wide variety of computer skills. A number of articles documented this problem. Espinal and Geiger (1995) found that the wide range of students' computer skills made the teaching of information literacy skills more difficult at National-Louis University. When instruction was geared to the level of the students with limited computer skills, the computer literate students in the class were bored. When instruction was aimed at the level of skills possessed by computer literate students, the less technologically adept students in the class were lost.

A number of other librarians noted similar problems. Dyckman (1995) discussed the challenge of dealing with New

York University students who varied widely in their levels of computer experience and competencies. She wanted library instruction to be able to progress beyond the rudiments of "First you push this button, then...." Dyckman concluded that library instruction needed to both focus on the basics and use active learning to be effective.

Castleman (1995) reported that early childhood education majors at her institution were not comfortable with using computers for a variety of classroom applications. Castleman found that using a hands-on approach in a non-threatening environment helped decrease students' computer anxiety in the library.

The constant flow of new technologies made it increasingly difficult for people to stay computer literate. Balas (1998) explained how the constant stream of new versions of software has created an constant demand for training and updating of skills. Krissoff and Konrad (1998) pointed out that students increasingly needed an in-depth understanding of how Web browsers functioned as libraries increasingly began using browsers as front ends for library resources and databases. Students also needed an understanding of how to use the mechanisms and features of the various online systems offered.

Library literature documented that the lack of computer skills was a problem for distance students. On the Off-Campus Library Services list, Heller-Ross (1997) maintained

that it was important for distance students to be offered the opportunity to get remedial computer training. Heller-Ross wanted to do this so that she could ensure that distance students would have the tools necessary to learn how to access online information. Heller-Ross stated that

> ...it is critical that DL [distance library] students achieve the SAME competencies that any student achieves. The medium of instruction may require additional mechanical/technological training (email, using Netscape), but academic achievement will require the ability to articulate an information need, develop a research strategy to locate resources, the critical thinking skills to evaluate the resources found, and the organizing/synthesizing/writing/presentation skills needed to share their research results in an academic paper or class presentation. (paragraph 2)

Challenges of technology. As Krissoff and Konrad (1998) noted, "instruction in libraries has become increasingly important and difficult with the advent of the electronic information age" (p. 28). Although a dizzying array of new technologies and online resources provided new methods of accessing information, these new technologies also presented librarians with new challenges that complicated librarians' efforts to provide library training. Librarians had insufficient time to teach students everything they needed to learn. This problem got more severe as the need to cover

basic library skills competed with the need to deal with an increasing array of new resources and technologies.

Weiss (1994) cautioned librarians not to train users on the mechanics of using electronic resources at the expense of more fundamental research needs. He recognized that the increase of electronic resources was impacting the research process, and he argued that librarians should not concentrate only on the mechanics. After all, tool-specific skills only addressed short-term immediate issues. Weiss argued that librarians needed, instead, to focus primarily on the long-term issues of the research process.

Conclusions on problems facing the delivery of library training for distance students. A review of literature on the challenges and problems facing academic institutions revealed a wide-ranging set of problems facing libraries that were trying to provide library instruction for distance students. Understaffing, diverse student populations, and demands created by new technologies were problems shared by libraries serving both students on and off campus.

Chapter III: Anticipated Outcomes and Evaluation Instruments

Goals and Expectations

The goal of this practicum was that Nova Southeastern University students in Child and Youth Studies (CYS) would feel confident about using online information technologies to do their research. This goal was to be accomplished by collaborating with the CYS faculty to integrate library instruction throughout the CYS curriculum. Students were provided with a variety of methods to learn library research skills that addressed different learning styles and that incorporated active learning activities. The writer hoped that when students had the necessary skills to do library research, they would feel more confident about their skills. This resulting confidence would be reflected in their responses to various types of surveys used to measure their feelings about library training.

Expected Outcomes

The following outcomes were expected:

1. At least 65 of 75 CYS students who start in the 1998/1999 school year will attend a library presentation presented at their program orientation.

2. At least 65 of 75 CYS students who start in the 1998/1999 school year will demonstrate a basic understanding of ERIC by locating and emailing or printing an ERIC ED and ERIC EJ abstract for a library assignment after their initial program orientation.

3. At least 65 of 75 CYS students who start in the 1998/1999 school year will demonstrate that they can locate full-text online education articles by locating and emailing or printing the abstract of a full-text education article from an online database after their initial program orientation.

4. At least 65 of 75 CYS students who start in the 1998/1999 school year will attend a second, more in-depth library presentation at their practicum orientation.

5. At least 60 of 75 CYS students who start in the fall of 1998 will send an email message to the library with a paragraph after their practicum orientation in which they describe the strategies and results of searches they conducted in four different online databases that were appropriate to their search topic.

6. At least 60 of 75 CYS students starting in the fall of 1998 who complete the library's user satisfaction surveys for library training sessions at the program orientation and at the practicum orientation will have satisfaction levels of at least 4.5 on the Likert Scale.

7. CYS students who start in the fall of 1998 will request at least 50% less computer searches during the first half of 1999 than CYS students during the first half of 1998.

8. A Web counter will indicate that the Einstein Library's Assistance and Suggestions Web page where the

remedial library training, the tutorials, and help information are located will have been accessed at least 100 times between October of 1998 and August of 1999.

9. At least 60 of the 75 CYS students who started in the fall of 1998 will answer NSU's Research and Planning library survey questions at the 1999 summer institute with satisfaction levels of at least 4.0 on the Likert Scale.

Measurement of Outcomes

The outcomes were to be measured in a number of ways. Statistics gathered by Distance Library Services would document the number of requests for searches by students in Child and Youth Studies clusters. A counter attached to the Web pages developed by the writer would document student use to get individualized help for basic competencies. Students would demonstrate learning by using the online resources to complete increasingly difficult performance-based research assignments that built sequentially and developmentally.

Outcomes were also to be measured through two different sets of satisfaction surveys. One survey was to be routinely administered to students who received library instruction provided by the Einstein Library (see Appendix A). This satisfaction survey was to be administered at training delivered at the cluster sites and at optional sessions at the 1999 summer institute. CYS students were to use the library's satisfaction survey to identify satisfaction

levels with library instruction at 4.0 or better on the Likert scale.

The second, briefer survey would be comprised of the library questions used in the Planning and Research (1996a) user satisfaction survey. At the 1999 summer institute, students were to be administered the questions used by Research and Planning, and the results of surveys were to be compared to the results of the earlier survey.

Judgements to determine if students had learned to do library research were to be determined in a number of ways. Students were to be surveyed using the same questions included on the Research and Planning user satisfaction surveys to determine if students were more comfortable using online resources for research than students who received the training earlier.

The rise or fall in the number of computer searches requested would be used to quantify how many times CYS students requested the library to do their research for them. The writer planned to use the number of times above or below 100 that the Web pages were accessed to quantify whether students were looking for self-directed help in the research process.

The writer planned to collect the library assignments that were completed between the time students begin their programs and the completion of the 1999 summer institute. This would provide a performance-based method of verifying

that students actually understood how to use online databases.

Chapter IV: Solution Strategy

Discussion and Evaluation of Solutions

The problem to be solved in this practicum was that Nova Southeastern University (NSU) expected distance students in the Child and Youth Studies (CYS) Program to do research as part of their course work; however, many of the students in these field-based programs varied in their mastery of the library research skills necessary to access and use the online library resources that the university provided.

A review of the professional literature for solutions had to be rather wide ranging. Although the focus of this practicum was on delivering bibliographic instruction to doctoral education students in a distance education program, there was no literature that focused on this specific issue. Because the Einstein Library could use a variety of modalities to deliver bibliographic instruction to CYS's field-based students, the literature review had to look at methods for delivering that instruction either on or off campus, particularly as it related to providing training for online research. At the same time, because the content of library instruction was impacted by the advent of many new technologies, it also became necessary to look at theories about how to best facilitate the learning process for students. As a result, the literature review was organized in two separate sections. The writer examined the advantages

and disadvantages of various methods for delivering library instruction to students on and off campus in the first section. The second part looked at current theories for improving the effectiveness of library instruction. The writer included all relevant articles on bibliographic instruction for distance students and as many more generic articles on library instruction for students in more traditional settings as were deemed appropriate.

Methods of delivering library instruction. The literature offered many methods and approaches for delivering effective library instruction for students. A number of people in the literature examined issues about bibliographic instruction for students on traditional academic campuses. A much smaller number of authors focused more narrowly on the library instruction issues that impacted students in field-based programs. The review included both traditional and newer technological solutions for delivering library instruction. Traditional, synchronous solutions covering a continuum of methods from one-on-one to lectures and demonstrations to hands-on labs were reviewed. Newer, asynchronous solutions that incorporated a variety of technologies were also examined. The review also included current thinking on the best methods for providing effective library instruction both in person and via those technologies.

The role of libraries in providing instruction in the use of information resources has been recognized for a long time. Both Martin and Jacobson's (1995) and Edward's (1994) reviews of articles on bibliographic instruction, for example, affirmed the importance of providing library instruction to students to teach them how to go about doing research. Similarly, research studies such as Fox and Weston's (1993) survey at the University of Northern Colorado highlighted the need for library training. Their study documented that students who received library instruction were both more self-confident and had higher levels of measurable library skills than students who did not receive the library instruction.

Bibliographic instruction became the key component in providing library services for distance students in the 1990s. Up until the 1990s, the role of distance librarians had primarily focused on providing students with the research materials they needed rather than on teaching them how to do their own research. In the 1980s, students were often mailed computer searches and provided with document delivery. Because this service was provided for them, they did not have to learn how to go about locating their own research materials. This changed, however, as online, end-user databases with full text became available in the 1990s. Academic institutions were able to provide students with the same resources that were available to students who attended

at the main campus. As a result, the role for distance librarians began to shift from predominately document deliverer and searcher to facilitator and trainer (Tuñón & Pival, 1997). The problem was that even though students had increasing access to electronic resources, many of those students didn't know how to use the databases. Academic institutions began putting a whole new emphasis on bibliographic instruction for distance students.

The review of library literature on bibliographic instruction for distance students provided no simple answers, however, in the most effective methods for delivering library instruction or the best ways to organize and teach library research skills to students on or off campus. In fact, a growing array of traditional and new tools to deliver library instruction to both traditional and distance students only complicated the process. As the information environment changed, the skills and methods of training users needed to be changing along with it (Ruess, 1994).

One-on-one instruction, also referred to as personal assistance or individualized instruction, had always been a popular and effective method of library instruction. The problem was that this method was also the most labor-intensive method. Leach's (1994) data on searchers' patterns of database use concluded that instruction at the point of use was more effective than workshops to students who don't

have a learning need. Leach recognized that group instruction might be more convenient for librarians. He also recognized, however, that group instruction failed to provide students with the information that they needed when they really would benefit most from that training.

Many libraries used one-on-one library instruction at the Reference Desk, but this was very time intensive. Franklin and Toifel (1994), for example, described how the University of West Florida provided one-on-one, individual consultations. However, the authors explained that this method was only used in a fourth tier of library instruction that followed a basic orientation, subject area orientations, and a research workshop.

Discussing library services for distance students, Wielhorski (1994) recommended point-of-use instruction because she argued that it could be personalized to the needs of a particular user. Although Wielhoski acknowledged that technology did not yet provide "similar interactive electronic capabilities" (p. 58) as face-to-face interactions for librarians and remote users, she maintained that librarians could use email, the telephone, and FAXes to creatively provide individualized instruction to help remote users.

Technology started to provide libraries with other alternatives that did not require people also being co-located. Folger (1997) and Lessick, Kjaer, and Clancy (1997)

tried using desktop videoconferencing to help remote students interactively on a one-on-one basis. The University of Michigan developed an Interactive Reference Assistance with the help of CUSeeMe software, cameras, and computers (Folger, 1997). Folger reported, however, that although students had been interested in the project, few actually used the system to ask library-related reference questions.

Written training materials took many forms from library training manuals to pathfinders or instructional pages that guided students to relevant information on a specific topic. In the 1990s, written materials were just as likely to be printed on paper or posted on the Web. Library literature discussed these alternatives and offered varied opinions on the usefulness of written instructional materials.

Paper documentation was still a popular method of providing students with instruction within libraries. In one doctoral dissertation, Cole (1992) described the success she had using a handbook to teach students in a doctoral education program how to select indices and databases for their literature reviews and to teach the students tools-specific strategies for effectively using these resources for their literature reviews. The handbook identified databases that would be useful for doctoral education students, provided descriptions of the content of each identified database, provided directions on how to search the identified databases, and provided strategies for

conducting their research. Based on field testing, Cole concluded that this kind of documentation was effective in helping doctoral education students deal with the proliferation of databases that they need to use in their literature reviews.

Distance librarians particularly liked using written materials, recommending them as an inexpensive method of providing instruction to students at field-based sites. Kelly's (1985) survey of external students at the University of Queensland included questions about the library training pamphlet. She found that 87% of the students reported reading the training material and 67% of these felt that the pamphlet was useful. Similarly, Lu (1991) found that students at Nebraska Wesleyan University liked their "BI [bibliographic instruction] exercise assignment packet" (p. 122).

Not everyone, however, was satisfied with the effectiveness of printed resources and training materials. A study by Bostian and Robbins (1990) found a negative correlation between study aids and students' ability to develop successful search strategies. The authors of the article speculated that students might be more confused than helped by the aids. Tiefel (1995) found that students preferred computer-assisted instruction or individualized help instead of printed materials to learn about how to develop search strategies and use Boolean operators. Niles

(1997) described a research course at SUNY Cobleskill that used workbooks for independent study. They concluded that the workbooks did not help students develop usable research skills. Niles attributed this to the fact that many of the students were not motivated or disciplined enough to study independently. Cameron and Evans (1997), on the other hand, described how workbooks had worked well for James Madison University in the relatively stable environment of the 1980s. However, they went on to say that the workbooks had not proven flexible enough to effectively address the environment of rapidly changing technologies characteristic of the 1990s.

Some librarians also objected to relying on written training materials as the only or primary method of providing library instruction to field-based students. Appavoo (1985), for example, remarked that, although printed training materials could be easily accessed and inexpensive, students had problems using them to learn library skills because it meant that students had to learn in a vacuum. Along the same lines, Fritz (1991) reported that the University of Saskatchewan provided its distance students with a detailed handbook in its efforts to deliver library instruction. Fritz acknowledged, however, that she suspected that students rarely read the materials.

Willemse (1991) described in graphic terms how many distance students, who used only written training materials,

had been incapable of even demonstrating such basic skills as locating books on the shelves of the library. He explained how one library instruction workbook was dropped because experiments did not show it to have any learning benefits. The author also noted that later efforts to use printed instructional materials also met with little success. He described how the only students who seemed to acquire the necessary skills were the ones who came to the main campus for group-training sessions.

Librarians were quick to recognize the potential for online text to provide new ways of delivering and accessing library instruction. Pariokh (1997) discussed how, in a group of 26 Australian university libraries, six libraries had developed electronic information sheets, five had electronic subject guides, and seven had electronic library guides. Wielhorski (1994) recommended distributing instructional materials via the library Gopher, FTP (File Transfer Protocol), or Web site.

Sloan (1996) discussed the potential for using the Web to create electronic pathfinders for library research. Alberico and Dupuis (1996), for example, described how traditional library pathfinders could be adapted to provide students with subject-oriented information that integrated library instruction into specific classes. Orr and Appleton (1997) explained how the library at Central Queensland University had used Web pages as electronic versions of

paper resources in the past. They argued that Web pages were not limited to providing static information because Web pages had the potential to provide much more interactive instruction than print materials.

Bibliographic instruction could provide general and subject -specific training that was delivered in a variety of settings on and off campus and delivered in a variety of ways. This instruction ran the gamut from lectures and presentations to demonstrations and hands-on labs.

The traditional bibliographic lecture had been losing popularity on university campuses since the 1980s. Studies (Lu, 1991; Davis, 1993) by traditional libraries providing services to on-campus students concluded that the lecture method-- although better than no instruction at all--was less effective than other alternatives. Along the same lines, Wielhorski (1994) pointed out that lectures were a "woefully inadequate"(p. 62) method, particularly for teaching online skills. She recommended either demonstrations or a hands-on approach to lectures with slides or transparencies.

Fenske and Clark (1995), however, raised some doubts about whether the lecture approach to library instruction really lacked merit. They used the Library Skills Test to test the relative merits of lectures versus small group instruction. The authors were surprised to find that the test results of University of the Pacific undergraduate

education students did not show positive or negative benefits for either small group instruction or lecture formats.

Using lectures and presentations for distance students was still relatively popular. A number of articles described librarians using lecture formats at field-based sites. Aufdenkamp (1994) described her efforts to simply implement five-minute presentations at Northern Illinois University's field-based sites to begin alerting students to library services. Collier (1991) provided presentations at Central Michigan University's distance sites because the lack of access to technology made live demonstrations impossible.

Fischer (1991) felt strongly about the need for face-to-face bibliographic instruction for distance students. He suggested that new technologies should be developed and encouraged. However, he also argued that the new methods could only complement and never replace the benefits from "traditional and well tried face-to-face teaching" (p. 493).

According to Smith (1991), presentations offered to field-based non-traditional adult students at Doane College's distance sites were useful. The sessions gave the librarians the opportunity to provide students encouragement and guidance in those face-to-face encounters. Smith argued that, although the librarians would improve access to many library resources and provide other types of training materials, the site presentations would always play a

critical part in the success of the library's efforts to serve its distance students.

Students were not always satisfied by lecture, demonstration, and presentation formats at distance sites. Kabel, Novil, and Fritts (1995), for example, reported that when they surveyed graduated field-based students of National-Louis University, the students wanted to spend less time on general library information. Instead, the students wanted the library to offer hands-on workshops.

The advent of electronic online resources, laptops, and LCDs (liquid crystal displays) made demonstrations increasingly popular. Arp, Culshaw, and Garrison (1995) explained how library instruction could be delivered anywhere a laptop and projector could be used to magnify the images on the computer screen. Other librarians, such as Wielhorski (1994), however, argued that demonstrations should only be used when hands-on training could not be offered. Bren and Hillemann's (1995) experiment provided data to support this argument. They found that English students tested better in the posttest when they had received guided, hands-on library training than when students were taught with only a lecture and demonstration.

Libraries that provided library instruction to distance students often resorted to demonstrations. Parirokh (1997) found that, of 26 university libraries in Australia, eleven used live demonstrations and 17 had "canned" PowerPoint

demonstrations. Alexander and Tate (1998) described how they used PowerPoint presentations to incorporate Web materials into library efforts to teach Web evaluation at Widener University. Swanson (1998) described how librarians at California Polytechnic State University, San Luis Obispo, used PowerPoint presentations to teach students information competency skills in a "non-print format" (paragraph 10).

With the advent of electronic classrooms in libraries, workshops became much more popular. Librarians were able to provide more in-class practice and face-to-face instruction about how to use electronic resources. Based on their experience in the classrooms as bibliographic instruction instructors, librarians reported that students learned best with active, hands-on participatory learning rather than by hearing about searches in lectures or seeing searches performed in demonstrations. Wielhorski (1994), for example, recommended hands-on workshops in situations when students learned how to access the online resources and how to use them.

Hands-on workshops had the advantage that students no longer had to passively watch a librarian's demonstration but could actively participate and experiment with online resources themselves. Adams (1995), Glogoff (1995), and Kaczor and Jacobson (1996) all reported hands-on training in labs to be an effective way to link library instruction to actual applications. Gresham (1997) maintained that

electronic classrooms played an essential role in linking information concepts with online exploration. He argued that they provided the ideal learning environment for user-centered training. Cannon's (1994) survey found that faculty at York University were so satisfied that they rated hands-on training for electronic resources as the preferred method of providing research instruction for students.

Not everyone was satisfied with hands-on workshops, however. Leach (1994) researched database use patterns of CD-ROMs to evaluate how instruction should be offered to users. He found that many database searchers only used specific databases once over a four-year period. As a result, he concluded that librarians were not offering training at the point of need. He suggested that instruction should be offered at the point of use rather than expect students to wait for infrequently offered workshops.

Just as importantly, Piette and Dance (1993) concluded that big workshops for first-years students were not as effective as believed. They suggested that the content should focus more on basic research skills and less on subject-specific databases.

There was very little literature on hands-on workshops offered to distance students, particularly at field-based sites. Kabel, Novil, and Fritts's (1995) survey of distance students in National-Louis University field-based programs found that graduated students who were offered training

sessions liked the hands-on training. These students, however, did have to participate in the training at the main campus rather than the librarians bringing the training to them at their field-based sites.

Orr and Appleton (1997) described Central Queensland University Library's effort to develop a hybrid information literacy workshop simultaneously for both on-campus and off-campus students through a variety of techniques. They loaned three on-campus students and two off-campus students with laptop computers, desktop cameras, and mobile phones. The computers had CUSeeMe for desktop videoconferencing. Students were provided with extensive workbooks, and students on and off campus could communicate with the librarian through a chat room. The chat rooms had the problem, however, of being too slow for discussions about selected search topics and strategies. This made chat rooms not very conducive to effective student interaction. Librarians used Timbuktu software to demonstrate online databases. They did find this method effective. Although the virtual residential school provided a comprehensive approach, it was very limited in scope. It reached less than one tenth of one percent of the 6,000 students enrolled at Queensland University.

Tutorials offered libraries the opportunity to provide an alternative to live instruction and allowed the learner to learn at his or her own pace. Computer-assisted tutorials

became a popular approach used by libraries that had the expertise to develop them. Gordan (1991) was an early proponent of computer-assisted instruction in libraries. She recommended computer-assisted instruction for library orientations and for teaching online searching skills with drill and practice, tutorials, and simulations. Gordan acknowledged, however, that there were drawbacks: Computers and authoring software were expensive and developing a one-hour module might take as many as 200 hours of staff time.

Richardson (1994) suggested that libraries consider their resources, commitment, and need when deciding where and how to implement computer-assisted library instruction. He noted that librarians had to decide whether they wanted to provide students with a structured, linear approach to instruction or use the freewheeling potential of a hypertext environment. Richardson warned that students could become disoriented using hypertext links and that hypertext also had the potential, not only to reflect student learning styles, but of actually molding them.

Niemeyer (1997) discussed the benefits of Authorware for computer-assisted tutorials for libraries. He explained how HyperCard was designed originally for the Macintosh and relied heavily on scripting to use many of the more advanced features. In contrast, Authorware was designed for the personal computer and made use of programming icons for "'visual authoring'" (p. 134). Although Authorware 3.5 could

deliver tutorials via intranets, Niermeyer acknowledged that the software was limited by the fact that it was not yet compatible with the Web. He expected this capability to come soon.

Swanson (1998) described efforts by the California Polytechnic State University, San Luis Obispo, to create Web-based instructional modules and CD-ROM versions of presentations for each module on Macromedia Director "to aid instructors in the classroom" (paragraph 5). Swanson noted that there were some real challenges to developing instructional materials for both the Web and CD-ROM. Developing the materials that could be used in both mediums resulted in the limitations of both mediums combining to impact what the team could develop.

Orr and Appleton (1997) and Richardson (1994) noted that tutorials on diskette, CD-ROM, or online all had the advantage of bringing instruction to students rather than requiring students to come for the instruction. For more traditional library users, Richardson described how students in the library could take the disk or CD-ROM to a computer lab to use. For distance and on-campus users, Orr and Appleton described how students in their virtual residence program could access computer-assisted instruction by downloading it from the Web or having diskettes mailed to them. For this scenario to work, however, the librarians had to ensure that the students in the program all had access to

the same type of computers and software. The librarians had even arranged for computer loans when and where necessary.

Blauer (1995) described how she decided not to use computer-assisted instruction to promote library services for her off-campus students. She felt that it relied too much on students' being motivated to complete the program on their own. Blauer also acknowledged that computer-assisted instruction might require the library to have expensive computer equipment available at each site.

Digitized tutorials provided students with asynchronous instruction that had the potential for reaching large numbers of people. Although these tutorials were only accessible in the libraries at first, online tutorials with either text or graphical interfaces became capable of reaching remote users in the house down the street or on the other side of the world. Kalin (1991) argued that it was important to provide remote users with the opportunity to access self-paced instruction on how to use resources. She saw access to tutorials as the critical element for students to develop confidence in the use of new resources.

Several studies of computer-assisted tutorials found them to be effective in libraries. Clay and Eagan (1996), for example, compared the effectiveness of a library skills workbook with a interactive computer program that taught research skills. The preliminary analysis of their pretests and posttests indicated that the University of Arizona

students tested preferred the computer-assisted tutorial to the workbook. In a similar study that evaluated the relative effectiveness of a computer-assisted tutorial to instruction using a traditional workbook, Vander Meer and Rike (1996), however, found that students in both groups learned equally well, had similar attitudes toward instructional methods utilized, and had similar retention levels.

Others discussed some of the disadvantages of librarians developing their own computer-assisted instruction (CAI). Becker (1995) pointed out that many institutions did not have the staff time needed to keep the content of CAI current. Wielhorski (1994) added that the improving quality of commercial training materials might make library efforts to develop these kinds of materials unnecessary.

With the increasing ubiquitousness of the Internet, Web-based tutorials began to become increasingly popular. Alberico and Dupuis (1996) recommended using the Web for creating instructional tutorials for library applications. They described how their instructional Web-based tutorials provided students at the University of Texas at Austin with background information, advise on available databases and resources, suggestions on effective online search strategies, and information on how to evaluate content. The Web pages had the advantages of eliminating the need to photocopy instructional materials as well as providing both

the richness of a hypertext environment and the ability to easily display multiple perspectives and cross referencing. Cameron and Evans (1997, April) were equally enthusiastic about moving from a workbook to a Web-based instruction program at James Madison University. Their Go for the Gold Web program was easy to modify and could reach larger numbers of students. Swanson (1998) described the efforts at California Polytechnic State University, San Luis Obispo, to teach information competencies using Web-based tutorials. The team developed an electronic workbook using frames and Java applets that allowed students to create their own search statements.

Librarians delivering library instruction to distance students were also quick to recognize the advantages of providing library tutorials via the Web. Warner, Hamlin, Frisby, Braster, and Lezotte (1997), for example, pointed out the advantages of using Web tutorials to provide training for users in non-traditional settings. They found Web tutorials to be ideal for distance learners because it supported individualized learning. They recommended that library Web tutorials provide situational learning in which the material was made relevant by integrating the learning into academic classes and programs. They recommended scaffolding or the practice of starting students off with lots of support and slowly preparing them to research independently. The authors of the article also recommended

active learning that provided lots of feedback and that was presented in a number of different modalities to meet differing learning styles. They argued that librarians needed to be teaching problem-solving skills that encouraged students to apply specific skills to real research problems. The authors, however, also concluded that tutorials could be in danger of providing tedious page after page of information. The authors suggested that the flexibility of hyperlinks helped mitigate the page-turning predictability of computer-assisted instruction tutorials.

Sager (1995), however, noted that remote users were at a disadvantage when using computer instruction because it was usually organized according to subject or format rather than providing levels of instruction needed by different individuals. He also argued that instruction delivered by technology alone, without interaction with people, was often uninteresting and seemed irrelevant to the users. Sager concluded that librarians interested in using technology for bibliographic instruction had to move beyond teaching tool-specific skills to communicating the reasons for becoming information literate.

Although Web tutorials became very popular, the literature reviewed warned about limiting library instruction to only tutorials. Harvey and Dewald (1997), for example, argued that librarians could and should collaborate with faculty in preparing students for the asynchronous

classroom to supplement traditional, face-to-face training sessions with library tutorials.

The use of audiotapes for library instruction was one of the first methods of using technology to deliver asynchronous instruction. Benefiel and Jaros (1989), and, more recently, Peterson (1996), recommended audiotapes as an inexpensive method for providing self-guided tours to library services. The slide presentations and tapes could be duplicated easily and used to train a number of groups simultaneously.

Libraries started to try a variety of asynchronous computer-mediated communications such as email, listservs, Usenet groups, and bulletin boards to provide students with library instruction. A number of campus libraries simply suggested that these communication technologies be used for delivering library instruction to traditional student bodies. Brown (1995) discussed using listservs to provide online "workshops" for teaching how to use the Internet. Jensen and Sih (1995) found, however, that the library-sponsored training sessions delivered via email and the Internet to remote users only had 20% of the respondents complete all six of the lessons.

Librarians serving distance students quickly started using these technology tools to serve field-based students. Kascus (1997) argued that librarians could successfully replace face-to-face interaction by harnessing new

interactive technologies through email, chat rooms, and online mentoring. He concluded that librarians must be willing to embrace these new resources. Wilson (1994) suggested using electronic bulletin boards to integrate library instruction into external courses. She argued that education, rather than the custodianship of information, should be the major function of libraries as they struggled to support the educational missions of their academic institutions.

A number of institutions used videos for library instruction. A number of articles discussed the use of videotapes in traditional libraries. Reese (1993) and Davis (1993) recommended using commercial videotapes in the library for teaching the CD-ROMs such as PsycLit. Videos were popular for providing overviews to the library and its services to distance students. Cleyle (1991) described U.READ, a program for delivering documents and bibliographic instruction to distance students at the University of Regina. The video provided a tour of the library on-campus and described U.READ services. Unfortunately, the video was used as an "'ice-breaker'" (p. 66) rather than for actually delivering bibliographic instruction.

Rogers, Nance, and Butler (1993), however, did not like videos. They argued that the cost, quality of images, and ease of production of slide/tape productions made them a much better choice than videos. They noted that many

libraries did not have ready access to a media lab for producing videotapes, and they argued that "video production for library instruction would require more time, expertise, and money than could be justified by the perceived advantages of the medium" (p. 5). They concluded that the older technology of slides paired with an audiotape was visually attractive and less expensive to produce.

Libraries also used videotapes for distance students. Orme (1995) described Indiana University-Purdue University at Indianapolis campus's 15-hour library instruction video course that was delivered to nontraditional, adult learners via the Community Learning Network. McAlpine (1996) described the University of Southern Queensland's use of a video and computer-assisted instruction to provide instruction on advanced library skills to distance students in Australia.

The idea of using videotapes for distance students, however, was a technology that had been, for the most part, replaced by newer technological choices in the 1990s. Appavoo (1985), for example, had some reservations about the use of videos back in the 1980s even as she tooted the advantages of using videos for providing bibliographic instruction to distance students at Athabasca University. Although Appavoo liked the fact that it allowed distance students to have control over when and where they learned, Appavoo also recognized the promise of coming technologies

that she thought had the potential of replacing videos by the 1990s.

Becker (1995) noted that sophisticated videotape programs were time consuming to develop and were cumbersome to revise. The author also noted that producing videos also could put an incredible burden on the library staff to develop, only to have the videos become quickly outdated.

Most recently, however, new technologies associated with the Web provided new methods for developing library instruction via videos. Holmes (1998) described how she used a video editor to develop a "'quicky' video" (paragraph 1) on PsycINFO for off-campus students at Lesley College. She captured the searching process shown on the computer screen to the video and supplemented these images with slides created with PowerPoint. Holmes also discussed the alternative of making the video available on a Web page for students to access online. Holmes argued that this approach had the advantage of providing a "quick, easy, and cheap in-house" (paragraph 2) approach.

Library instruction could also be delivered synchronously via increasingly sophisticated technologies. These included audiobridges and audio conferences, interactive television, compressed video, microwave communications, and satellite.

Some technologies did not require sophisticated equipment. West and Ruess (1995) and Erazo and Derlin

(1995), for example, described the efforts by the University of Alaska Fairbanks to use audio conferences to teach a library skills course that had students putting the skills into practice with their own computers and modems.

Some technologies for delivering bibliographic instruction required major commitments from the academic institutions to pay for the technologies and to provide the support to run them. Salt (1987) described the transmission of library instruction via the satellite system used for distance education at the University of Saskatchewan. He indicated, however, that the instruction was limited to discussion about various resources and not to illustrate search techniques.

A number of libraries wrote about their efforts to develop library instruction programs that used various combinations of one-on-one instruction, general training sessions, and course-specific training. These were delivered in a variety of ways and were coupled with a variety of types of instructional materials.

Pickert and Chwalek (1985) described a comprehensive program for doctoral students in the School of Education at Catholic University. This program started with an introductory course that provided education students with an overview of social science resources. Next, library instruction was offered at the seminar level with library pathfinders that focused resources on particular topics.

Finally, librarians provided training in how to do their literature reviews. Pickert and Chwalek recommended all three levels of library instruction for doctoral students in education because they had found that many of the students they dealt with were not aware of how knowledge was organized in their field or the tools available for accessing that information.

Educational theories for improving bibliographic instruction. A review of the literature revealed several pedagogical forces were impacting librarians' thinking about bibliographic instruction. These methods were an important part of the literature review because the theories offered could be used to make library training more effective.

A growing focus on the learner rather than the instructor generated a good deal of interest in using learner-centered, active learning in library instruction. Active learning, according to Simons (1997), occurred when the learner participated in the decisions about the learning process and when the learner was challenged by the learning. Jafari and Stamatoplos (1996) suggested using active involvement rather than passive learning. They recommended the interactivity of hands-on workshops rather than telling the students what they needed to know in lectures. The active learning resulted in more immediate and practical benefits and put more of the responsibility for and control of learning in the hands of students. Similarly,

Nahl-Jakobovits and Jakobovits (1992) argued that bibliographic instruction librarians needed to emphasize "an interactive, access-based approach focused on active learning and critical thinking" (p. 73). They argued that it was important to have a holistic approach that integrated affective and cognitive objectives in the design of bibliographic instruction.

Active learning was recommended as a method for improving the effectiveness of "one-shot" library training sessions. Gremmels (1996) argued that instructors should use active learning techniques such as using skills stations and discovery exercises. Dabbour (1997) recommended using small groups, self-guided exercises, and hands-on activities to better integrate active learning into training on how to use online resources at California State University-San Bernardino.

Others saw different advantages to using active learning in bibliographic instruction. Jacobson and Mark (1995) recommended active learning exercises as a remedy for library anxiety. Allen (1995) emphasized getting students to participate rather than be passive recipients of information. She recommend brainstorming, mind mapping, cooperative projects, and partnering activities to promote active participation.

Cleary (1998) described how librarians at Slippery Rock University effectively used active learning in their

bibliographic instruction sessions. They would break students into small groups where they would formulate search strategies. The librarian would then execute some or all strategies as time permitted. The class would discuss the various advantages and disadvantages of various approaches. Cleary argued that students needed to actively practice increasingly complex component skills of critical thinking before students could completely master the skills.

Not all articles were unqualified in their support for using active learning in library instruction. Although Prorak, Gottschalk, and Pollastro (1994) found that library instruction improved student scores and confidence levels, they did not find a relationship between students' scores and the method of instruction. The authors had been surprised by results that showed no significant difference between active learning in either small groups and lectures or passive learning in similar groups. It should be noted, however, that they did find a significant relationship between the librarians who provided the instruction and student scores.

A number of writers highlighted a new emphasis on using a collaborative approach for library instruction that integrated the teaching of research skills into the fabric of courses and academic programs. This approach had faculty and librarians guiding students so that they would come to see for themselves the relevance of the skills they were

expected to acquire. This meant that librarians and faculty had to move away from training that simply transmitted information from above to an approach that facilitated that knowledge.

The literature on the importance of library collaboration with faculty on traditional campuses was extensive. However, in a new twist, several articles recommended Web pages for integrating library instruction into course work. Alberico and Dupuis (1996) described how course-integrated Web pages organized electronic resources into specific subject areas that could be used for either hands-on training sessions or a basis for exploration and research.

Literature on collaborative efforts to integrate library training for distance students into academic curriculums had a number of descriptive accounts at various institutions but no research. Whyte (1995) discussed efforts at Linfield College to use computer conferencing as part of a team-taught research/writing class for students geographically dispersed throughout the state of Oregon. Wilson (1994) reported the efforts at Edith Cowan University in Australia to teach information seeking and critical thinking skills for distance students in southeast Asia by integrating library instruction into the curriculum. Lebowitz (1997) argued that librarians needed to take the

initiative to become more directly involved with faculty in the development of distance education courses.

The array of solutions identified in the literature for providing instruction to distance students was so wide because it covered the same set of same alternatives available for traditional classes. These tools were simply being used to interact with students in new and creative ways.

Description of Selected Solutions

A review of the literature demonstrated that no one method met the needs of all students or the limitations of all training situations. Students with a variety of learning styles and a variety of backgrounds needed a variety of methods of learning about how to do online research. Some students did better in classroom situations while others preferred to learn independently. Some liked to explore ideas while others liked a structured instructional approach. Because the librarians in the Einstein Library had little opportunity to interact with distance students in Child and Youth Studies, it was particularly important for the writer to provide the students with every feasible alternative for them to get the training and feedback they needed.

The writer concluded that integrating library instruction into Child and Youth Studies was an important first step in providing students with opportunities to learn

about online research skills. Because of a good working relationship with the faculty in CYS, the writer decided to work with the CYS program to integrate library instruction developmentally and sequentially into the curriculum. As a result, the writer decided to use a collaborative approach. She decided on this approach because it had the added advantage of promoting active learning by engaging CYS students in the learning process.

The fact that a collaborative approach could be used in the CYS program for developmental and sequential learning was important. The writer concluded that this would provide librarians with the opportunity to incorporate basic library training assignments into study areas and the practicum process. Instead of trying to cover all training in a "one-shot" session, the collaborative approach ensured that students would learn library skills in a systematic and planned manner. The writer hoped that this approach would also have the advantage of promoting and strengthening partnerships between the faculty and the librarians as the two groups worked together to improve students' research skills.

Because the CYS clusters did not usually meet for their summer institute until almost nine months from the time they started their program, the writer decided to plan visits to each site. The director of Programs in Education and Technology decided that it would be best for the writer to

meet the students two separate times. The first site visit was to be at the beginning of the program during the students' program orientation. The second visit would take place during the practicum orientation. The second visit would have the advantage of providing students with help at the point in their programs when they were starting to do research for their literature reviews. It also had the advantage of building developmentally and sequentially on the skills provided at the program orientation.

The writer decided to include hands-on training because it was such an effective method of providing students with online skills. However, because the distance students did not usually have access to computer labs at their cluster sites, the writer had to wait to offer this during the CYS summer institute when could be arrange optional training sessions in the computer labs at the hotel.

The writer decided to offer individualized help in a number of ways. She saw the provision of NSU's toll-free number and library email account as good methods for delivering one-on-one help to distance students who could not walk into the Einstein Library and ask questions at the Reference Desk. Students could use these synchronous and asynchronous methods to proactively contact librarians with their questions. The literature emphasized, however, that these services had to be actively publicized to students for these methods to be effective.

Based on her findings in the literature, the writer also wanted students to have the opportunity to get co-located, one-on-one training. Students would have help at the sites at opportune times before or after the bibliographic instruction session. This would offer students needing additional assistance the opportunity to get "scaffolded" help. Students would also be able to receive this kind of personalized help during the 1999 summer institute at the Reference Help Desk over the lunch hours as well as at in the open computer lab in the evenings.

Based on the selected solution strategies, the writer planned to integrate bibliographic instruction into the curriculum of Child and Youth Studies clusters starting during the fall of the 1998/1999 academic year. The solutions were selected to meet the diverse needs of adult students (a) who were at the doctoral level, (b) who had a variety of computer-skill levels, (c) who came from a variety of work backgrounds and have varying life experiences, and (d) who had a variety of library-skill levels. The solutions were selected to provide students with training (1) that was relevant to them, (2) that actively engaged the students' interest, (3) that would provide sequential and developmental training, (4) that provided performance-based assessment, and (5) that offered the opportunity to provide students with remedial computer skills with scaffolding or support as they strengthened

their online searching skills. The solutions included both synchronous and asynchronous training and used various delivery methods ranging from face-to-face instruction to training delivered at a distance. Just as importantly, the solutions used a mix of both new technologies and traditional approaches to provide an integrated curriculum of library training for the CYS doctoral students.

The writer decided to work with the administrators in the CYS program to integrate library instruction into the CYS curriculum. To keep the implementation manageable, the writer decided to limit the focus of her practicum on student activities between the beginning of clusters starting in the 1998/1999 academic year and the 1999 summer institute. To ensure that CYS students would know the basics about the ERIC database and about accessing and searching various online databases, the writer decided to work with the practicum director to have CYS cluster students starting during the 1998/1999 academic year complete a total of three library assignments during this time period. As planned, these assignments were designed to build developmentally and sequentially on each other. These assignments used performance-based assessment that required students to demonstrate that they had acquired information literacy skills by applying this learning to library assignments.

Integrating library instruction into the curriculum had two benefits. It ensured that distance students would be

held to the same research standards as NSU students who attended classes on the main campus. Just as importantly, integrating library instruction into the curriculum for distance students ensured that students both on and off campus would have the same opportunities to learn how to do online research. Instead of distance students becoming discouraged from doing their own online research through lack of training or inadequate and rushed "one-shot" training, distance students would be provided with various training opportunities and assignments that promoted learning life-long research skills. This approach had the added benefits of both promoting the mission of NSU and meeting the accreditation criteria set by the Southern Association of Colleges and Schools (SACS).

The writer elected to incorporate active learning into the face-to-face training sessions. Since computer labs were not available at most CYS cluster sites, the writer and other library trainers would have to incorporate other methods of actively engaging students in the learning process. At the program orientation session at the beginning of the students' programs, the writer decided to spend one hour to describe library services available to distance students and to cover the basics of accessing and using ERIC and finding full-text articles online. The writer planned to involve the students in the searching process by having volunteers use the laptop and modem to access the ERIC

database and other databases with full-text education articles.

At the practicum orientation library training session, the writer planned to use active learning to encourage students to "learn through doing." The writer planned that a librarian from the Einstein Library would conduct training sessions with each CYS cluster that would start during the 1998/1999 academic year. Basic demonstrations would be conducted at the program orientation while advanced techniques and resources were demonstrated at the practicum orientation.

The writer intended to arrange for optional hands-on training labs to be offered at the 1999 summer institute. Although coming almost nine months after starting into the CYS program, the writer knew that hands-on training would, nevertheless, offer students an important opportunity to try out the skills that had been demonstrated at the cluster sites. The hands-on activities would encourage active learning by enabling students to try out new skills and research strategies on the spot.

The writer wanted to ensure that students would be aware of one-on-one reference help available to them through email and toll-free numbers. The contact information could be posted on the Web pages, in print documentation, and on an information card so students would have the necessary information for obtaining help if needed.

The writer planned to supply students with a variety of instructional materials. They would receive the printed booklet, Introduction to Distance Library Services, when they began their CYS program. Students would also have access to a variety of online resources ranging from remedial Web pages on the basics of library research to a variety of digitized instructional materials including Web pages with research strategies that students could use in their study areas.

Because the review of the literature revealed that many doctoral students never learned the basics on how to do library research, the writer wanted to ensure that the CYS students would be provided with a series of Web pages on the basics of library research, particularly as it related to their own literature reviews. The writer also wanted to ensure that CYS students would be equipped with information about and access to Web-based tutorials on how to use basic databases in FirstSearch and InfoTrac.

The writer planned to bring the Einstein Library's satisfaction survey (see Appendix A) and sign-up rosters to the training sessions at each cluster site and at the optional hands-on training. The writer also intended to arrange for all CYS students to be administered the same user satisfaction survey questions that had been used in the Research and Planning surveys.

Leadership role. The writer intended to take a leadership role in implementing this project. The writer planned to work with both CYS faculty and Einstein librarians to develop the various instructional materials and to integrate bibliographic instruction into the CYS curriculum. The writer would develop and work with Einstein librarians to implement the library research basics Web pages. The writer also intended to work with the NSU technology staff to have counters put on the Web tutorials and research basics Web pages to count the number of times it was accessed. The writer would work with Child and Youth Studies to develop assignments and collaborate with CYS administrators to plan for the delivery of site instruction at the program orientation and the practicum orientation. The writer planned to work with the CYS staff to schedule the site visits. She would work with the librarians to develop the handouts and training materials that would be used at the sites. It would also mean coordinating the planning, designing, and implementing the training for hands-on bibliographic instruction at the 1999 summer institute.

Because Child and Youth Studies only offered the Einstein librarians a limited amount of time for face-to-face interactions with the students in the field-based clusters, the writer decided that she would have to focus a great deal of her time and energy on providing these

distance students with supplemental library instruction opportunities that were offered asynchronously. Thus, the writer believed that a very important part of her leadership role would entail ensuring the on-going development of Web materials that would provide students with the just-in-time information they might need. The writer intended to coordinate efforts of the public service librarians in the Einstein Library to provide students with additional Web resources for additional just-in-time library instruction online. Thus, the writer would use the strengths of the Web to augment (1) the limited face-to-face contact with librarians at the sites and summer institute and (2) the synchronous communications via email and toll-free numbers.

Report of Action Taken

The writer's solution strategy for integrating bibliographic instruction into the curriculum of local and national Child and Youth Studies clusters, starting during the 1998/1999 academic year, went much as planned.

The implementation took a total of 33 noncontiguous weeks spread over a period from May 1998 when the practicum proposal was approved to the end of July 1999 when the final practicum results were compiled. The writer spent May and June of 1998 in preliminary work researching Web tutorials developed by other academic libraries. The planned activities were completed over the following 13 months, but sequence of these events were sometimes adjusted to make

allowances for the course of events in the library and Child and Youth Studies.

The first months of the actual implementation focused on working with librarians in the Einstein Library to develop asynchronous materials and dealing with administrative issues. The librarians developed the general plan for the Web pages as a team. The writer took an active leadership throughout this process.

The writer worked with librarians in the Einstein Library to being the planning and development process for materials during Month 1. The writer reviewed the *Introduction to Distance Library Services* and coordinated the efforts of several public service librarians for necessary updates. Documentation for several new databases including ProQuest, JSTOR, and Wilson Education Abstracts Full Text was added. The writer worked with the librarians to begin development of a series of remedial Web pages (see Appendix D). The writer also worked with the CYS administration to coordinate the plans for forthcoming clusters.

During Month 2, the writer worked with the Einstein librarians on developing the Virtual Education Research Assistant. During the same period, the writer worked with CYS faculty to identify materials that would be useful for students. The writer then developed and added these resources to her Web pages (see Appendix D). The writer

developed a handout for the practicum orientation that modeled activities on Gedeon's (1998) approach (see Appendix J). Last but not least, the writer worked with the Einstein Librarians to develop a PowerPoint slide presentation for the program orientation.

Month 3 saw a continuation of the writer's leadership role in working with Einstein Librarians to develop asynchronous, Web-based materials for students. As planned, the writer also worked with her peers to develop the assignments for the students. During the same period, the writer worked with the CYS administration to start planning the first set of trips to Greenville, Alexandria, and Boston. Because the writer could not go personally to every site for the program orientation, she worked with another librarian to prepare her for the bibliographic instruction sessions. The writer ensured that students would be advised that they had both synchronous and asynchronous methods of getting help. Finally, the writer ensure that PowerPoint, print, and Web materials were updated to reflect the addition of Wilson Education Abstracts, ProQuest Direct's Library Research Periodicals, and JSTOR.

Activities during Month 4 focused on the program orientations. After consulting with the Einstein Librarians, the writer added a handout on useful databases (see Appendix I). She saw to it that all the materials were prepared and mailed to the sites in sufficient time for the training

sessions. Since the writer had been unable to deliver the bibliographic instruction at the Greenville site, she met with the trainer afterwards for a debriefing. Based on the writer's formative evaluation, she made modifications in the PowerPoint presentation. The writer then delivered the training session for the national CYS cluster and conducted a formative evaluation of that session as well. During this period, the writer started to receive Assignments 1 and 2 for the first two clusters.

In Month 5, the writer traveled to Boston and delivered the revised program orientation for the students at that site. She had planned to provide a hands-on session there. Unfortunately, the NSU server was down. As a result, she had to resort to a "canned" demonstration. As before, the writer did a formative evaluation.

Ensuring that students completed library assignments took a good deal of time became an important issue in Month 5. The writer started to have difficulties obtaining the library assignments from all students. In order to address this problem, the writer worked at the beginning of the month with the cluster coordinators to remind students informally. Later in the month, after consulting with the Director of Applied Research, the writer sent out formal reminder letters to students.

Month 6 saw a flood of assignments from clusters 93, 94, and 97. Because these were from students who seemed to

feel less competent technologically, the writer needed to invest more time helping these particular students via email and the telephone to complete their assignments.

Because of delays in the academic program, the program orientations for the last two clusters did not take place until Month 6. As a result, the writer had to prepare updated training materials for these two clusters. The writer was able to do the training in Alexandria while another librarian did the training for the Ft. Lauderdale cluster. The writer took additional time to help students not comfortable with the technology with one-on-one help during the lunch hour and after class.

The writer worked with the other librarian prepare for the session the writer could not deliver personally. The writer provided the other librarian with the PowerPoint presentation, handouts, and instructional strategies. The writer also met with the other librarian after the training for a debriefing, particularly since this was the only cluster to receive hands-on training as part of their program orientation.

The first of the practicum orientation started during Month 6. The first session was to have been with the national CYS cluster, but scheduling problems resulted in the writer being unable to meet with the students. The writer met with the Director of Applied Research, and they decided to provide students with asynchronous training

rather than having the students wait until the summer institute. As a result, the writer added speaker's notes to her PowerPoint slide presentation and mailed the materials to the students.

The writer also went to Greenville during Month 6 for the practicum orientation's library training session. As in Alexandria, the writer provided students with one-on-one help at lunch and after classes. She particularly used this as an opportunity to work with students who had not yet completed Assignments 1 and 2. While the writer was in Greenville, she consulted with the cluster coordinator who also happened to be a media specialist. Upon the recommendation of the cluster coordinator, the writer used her PowerPoint slide presentation (see Appendix H) to develop a Web version of the session that students could use for just-in-time help as needed.

Because the CYS program had expanded the time for the library's practicum orientation, the writer was able to use an active-learning activity. After the Greenville session, the writer did a formative evaluation of the materials, activities, and student satisfaction surveys. Based on the results, she made some minor adjustments to the slide presentation.

During Month 6, the writer continued to get some emails with the first two library assignments. Emails with Assignment 3 also started to arrive. Unlike the first two

assignments, Assignment 3 required a great deal of time on the part of the writer because she responded to each student individually. Because the writer provided each student with suggestions about how to focus their research more effectively, corrected misconceptions, and recommended additional databases for the students' topics (see Appendix F), the responses normally took her at least 15 minutes per student to complete.

During Month 6, the writer met with a CYS faculty member who requested that the writer also develop a Web tutorial on how to search the topic of family structure in PsycINFO. The writer added these Web pages to her CYS Web Help page.

Library assignments continued to occupy the writer's time in Month 7. The writer had to send letters to several students in clusters 95 and 96 reminding them to complete Assignments 1 and 2. In the meantime, the writer continued to reply to students who were emailing in their work for Assignment 3.

A number of other activities kept the writer busy during Month 7. The writer finally had all the satisfaction surveys for the program orientation so she was finally able to compile the statistics and assess the results (see Appendix B). The writer had to update the slide presentation and Web pages yet again because of changes in several of the databases' interfaces. Last but not least, the writer worked

with the CYS administration to finalize plans for the library help desk, hands-on training for students and practicum advisors, and one-on-one help in the computer lab during the 1999 CYS summer institute.

During Month 7, the writer continued to respond to students completing their work for Assignment 3. Early in the month, the writer asked the cluster coordinators for clusters 93, 94, and 97 to remind their students about the assignment. Toward the end of the month, the writer mailed out a formal reminder to several students.

Month 7 was a busy month for library training sessions for practicum orientations. The writer went to Boston to deliver the library training for the practicum orientation. Unfortunately, NSU again had server problems so the writer was unable to prove students with hands-on training. However, she provided a live demonstration and slide presentation as with previous groups. The writer also helped students who wanted one-on-one help at lunch and after class. The writer learned that the date for the practicum orientation for the Ft. Lauderdale cluster had been changed without her being notified. Fortunately, the writer was able to juggle her travel schedule in order to be back the Sunday in question and provide hands-on training for the cluster. Last but not least, the writer delivered training for the Alexandria cluster with a live demonstration and an active-learning activity.

Month 8 marked the culmination of the practicum. The writer compiled the results of the training sessions for the practicum orientations (see Appendix B). She continued to respond to students emailing in their work for Assignment 3. At the same time, the writer had to make final preparation for the 1999 CYS summer institute. This included ensuring that there were sufficient printed handouts printed, that librarians and staff people were schedule to staff the Reference/Distance Library Services help desk, and that the CYS administration was prepared to distribute the writer's final survey. The writer also developed a PowerPoint slide presentation for the SPS training session (see Appendix M) and handout (see Appendix L). She consulted with librarians in the Einstein Library about the content and modified the materials accordingly.

During the week of the 1999 CYS summer institute, the writer worked with CYS students in a variety of ways. The writer provided a library training session for the practicum advisors, two sessions for advanced users, and one session for the Special Students (SPS) specialization. The writer staffed the Reference/Distance Library Services help desk one of the four days it was open, and she provided a total of nine hours of one-on-one help in the computer lab.

During the same week, the writer also completed a number of administrative tasks. The writer compiled the results of the student satisfaction surveys for the hands-on

sessions (see Appendix B) and the writer's final survey (see Appendix C) and completed a summative evaluation of the services offered during the CYS summer institute.

Chapter V: Results

Results

The problem addressed in this practicum was that Nova Southeastern University (NSU) expected distance students in the Child and Youth Studies (CYS) Program to do research as part of their course work; however, many of the students in these field-based programs varied in their mastery of the library research skills necessary to access and use the online library resources that the university provided. The writer's goal in this practicum was to see that Nova Southeastern University students in Child and Youth Studies (CYS) would feel confident about using online information technologies to do their research.

Outcomes

The results of the outcomes for the writer's practicum are discussed below. Each outcome goal is listed below with a brief explanation of the actual outcome. Discussion of the results will follow afterward.

1. At least 65 of 75 CYS students who start in the 1998/1999 school year will attend a library presentation presented at their program orientation.

This outcome was met. A total of 100% (all 118) of the students attending the program orientation received the library training. The writer determined the total population from students on the class lists who actually started the program and adding any students not on the list who were

identified as conditionally accepted. The total of 118 students included 108 fully approved students and 10 students who were waiting final approval.

2. At least 65 of 75 CYS students who start in the 1998/1999 school year will demonstrate a basic understanding of ERIC by locating and emailing or printing an ERIC ED and ERIC EJ abstract for a library assignment after their initial program orientation.

This outcome was met. A total of 87% (103 of 118 students) actually emailed or printed an ERIC EJ and an ERIC ED abstract between the time they attended their program orientations and the end of the 1999 summer institute and exceeded proposed expectations.

3. At least 65 of 75 CYS students who start in the 1998/1999 school year will demonstrate that they can locate full-text online education articles by locating and emailing or printing the abstract of a full-text education article from an online database after their initial program Orientation.

This outcome was met. Out of the total of 118 students still in the five CYS clusters started during the 1998/1999 academic year, 91% or 107 students emailed or printed and submitted their assignments to the writer by the end of the 1999 CYS summer institute. This was higher than the original targeted goal of 87% or 103 students.

4. At least 65 of 75 CYS students who start in the 1998/1999 school year will attend a second, more in-depth library presentation at their practicum orientation.

This outcome was not met. Only 80% or a total of 102 of 128 students in clusters 94, 95, 96, and 97 received library training at their practicum orientation. Although the goal of providing students in all five clusters was met, the writer or another librarian from the Einstein Library did not physically provide to one of the five clusters at the time that these students were attending their practicum orientation. Due to a scheduling problem, the students in cluster 93 received asynchronous training after their practicum orientation rather than at the practicum orientation. When the targeted outcome was adjusted to reflect the total number of students actually in the program at that time, only 80% or 102 of all 128 students enrolled in the five clusters attended the writer's second, more in-depth training session. This was less that the 89% or 114 students specified in Outcome 4.

It should be noted that the total number of students enrolled in the five clusters starting during the 1998/1999 academic year increased at the beginning of the second study area. This was due to the fact that several students who had been forced to drop out of earlier CYS clusters had joined one of these five clusters at this particular point in the curriculum.

5. At least 60 of 75 CYS students who start in the fall of 1998 will send an email message to the library with a paragraph after their practicum orientation in which they describe the strategies and results of searches they conducted in four different online databases that were appropriate to their search topic.

This outcome was not met. Only 59% or 75 students of the 128 students listed on the class rosters provided to the writer by CYS actually completed this assignment by the end of the 1999 CYS summer institute. This did not reach Outcome 5's goal of 80% or 102 of 128 students completing the assigned work.

6. At least 60 of 75 CYS students starting in the fall of 1998 who complete the library's user satisfaction surveys for library training sessions at the program orientation and at the practicum orientation will have satisfaction levels of at least 4.5 on the Likert Scale.

This outcome was met. The average of the satisfaction levels of the surveys at the program orientation and the practicum orientation was 4.5 on the Likert Scale. The individual satisfaction rates were 4.4 for the training at the program orientation and 4.5 for the practicum orientation.

7. CYS students who start in the fall of 1998 will request at least 50% fewer computer searches during the

first half of 1999 than CYS students during the first half of 1998.

This outcome was successfully met but in an unexpected way. Because the Einstein Library had started to offer all NSU students library training and all students were required to have Internet access, Distance Library Services stopped doing computer searches for students shortly after the beginning of the writer's practicum implementation. As a result, no students in the CYS clusters starting during the 1998/1999 academic year were able to submit requests for computer searches. The result was that the number of CYS student requests declined from 236 in the first half of 1998 to zero in the first half of 1999. This reflected a decline rate of 100%.

8. A Web counter will indicate that the Einstein Library's Assistance and Suggestions Web page, where the remedial library training, the tutorials, and help information are located, will have been accessed at least 100 times between October of 1998 and August of 1999.

This outcome was met. Students accessed the writer's Web pages 7,573 times. The remedial pages that were posted in 1998 were accessed 5,330 times while the CYS practicum help pages mounted during the spring of 1999 were accessed 2,243 times.

9. At least 60 of the 75 CYS students who started in the fall of 1998 will answer NSU's Research and Planning

library survey questions at the 1999 summer institute with satisfaction levels of at least 4.0 on the Likert Scale.

This outcome was not met. Student responses did reach the targeted satisfaction level of 4.0 on the Likert Scale. However, only 45 forms out of a possible 123 were completed and returned to the CYS headquarters at the 1999 summer institute by the last day of the 1999 summer institute. This meant that, when the number of students completing the survey was adjusted to reflect the actual number of students starting during the 1998/1999 academic year, the writer found that only 37% of the students completed the surveys instead of the targeted goal of 87%.

Discussion

Over all, the writer was very satisfied with the success of the practicum implementation. By the end of the practicum implementation, students in clusters 93, 94, 95, 96, and 97 indicated that they felt much more confident and comfortable using and accessing, the online resources provided in NSU's Electronic Library. Even though the writer did not successfully complete every one of her outcomes, she was successful in her overall objective of improving student skills and student satisfaction levels with their ability to use these online resources for research.

The planning process. The writer's planning process played an important role in contributing to the success of the writer's practicum implementation. The writer completed

an initial analysis of causative and situational elements using Smith's (1998) criteria that analyzed the learning environment facilities, socio-cultural factors, the support environment, and instructional support. The writer used these criteria to identify any system constraints that had the potential of negating or negatively impacting the success of her practicum.

The writer was able to use knowledge of the university in the planning process to identify potential opportunities and problems. The writer correctly identified the strengths of her department (1) to provide and support effective bibliographic instruction both on campus and at cluster sites, (2) to develop and disseminate a wide range of instructional materials including sophisticated PowerPoint presentations and Web tutorials, (3) to provide effective one-on-one and instructional support to students using both synchronous and asynchronous methods, and (4) to work collaboratively both within the Einstein Library and with various academic programs at NSU.

The writer identified the educational opportunities in CYS to improve bibliographic instruction. She recognized that CYS offered the right environment for trying new innovations both because CYS provided valuable student-support services and because of the CYS staff's long-standing partnership with the library in promoting information literacy skills for CYS students.

Just as importantly, the writer analyzed the potential advantages and risks inherent in the academic system where she planned to implement her library training. The writer paid particular attention in her situational analysis to the needs and characteristics of the potential CYS student adopters. The writer opted to incorporate as much face-to-face training as possible in her practicum solution. Student comments in the user satisfaction surveys documented the wisdom of this decision. The specifics of hands-on training will be discussed in more depth later in the discussion of instructional strategies.

Because CYS students were working professionals, the writer's decision to provide them with the convenience of being able to access just-in-time training materials in multiple modalities was important. The writer had no way to quantify the degree to which print materials were used, but the high usage statistics of the writer's Web sites documented that students were using the online materials. NSU students accessed these materials 7,573 times between the fall of 1998 when they published to the Web and August 1, 1999.

Finally, the decision to use a sequential and developmental instructional approach to the library training proved useful. Quantitative data of satisfaction scores in Table 1 show that students felt increasingly comfortable as they received each of the three sessions.

TABLE 1

Comparison of Likert Scale Scores on Library Training Session Questions for Training Sessions at the Program Orientation, the Practicum Orientation, and the 1999 CYS Summer Institute

	Program Orient.	Practicum Orient.	Summer Inst.
Scores	4.4	4.6	4.9

Qualitative evidence supports that contention that the developmental and sequential approach proved to be an effective strategy for CYS students. One student wrote in Assignment 3,

> ...right before I went to Florida in February I was thinking, 'I hope I remember how to access the electronic library' since it had been quite a while before that we had done the assignments. Then along came another assignment that made me review it again. So that was good, and it gave me more confidence [emphasis added].

In spite of the overall accuracy of the situational analysis, the writer did make several mistaken assumptions, particularly in regard to the writer's appraisal of CYS students. In the writer's assessment of the level of CYS students's computer skills, she had correctly taken into account the fact that computer literacy would be an important prerequisite skill that library training would

build upon. The writer, however, mistakenly assumed that CYS's admission policy of requiring students admitted in the Child and Youth Studies program to have basic computer skills meant that these students would actually possess the prerequisite skills. As a result, the writer incorrectly assumed that students entering CYS programs during the 1998/1999 academic year would be able to handle the kind of basic technology activities needed to search online databases. The writer learned, however, during her practicum implementation that not all students knew such basics as (1) what a Web browser was, (2) how to access a Web address, or (3) where to locate the delete key on the computer keyboard.

In retrospect, the writer should not have been surprised by the number of CYS students without these remedial technology skills. Child and Youth Studies students in previous clusters had been weak in this area. The literature identified this as a problem (Cahoon, 1998). Lowther, Bassoppo-Moyo, and Morrison (1998) noted that students needed not only to know the computer basics but be technologically competent in order to conceptually understand how to use the computer in learning activities.

As in Castleman's (1995) findings, the writer found that many of the doctoral education students in the CYS program were not comfortable using computers. In the course of the practicum implementation, the writer estimated that 20% to 25% of students in the five CYS clusters starting

during the 1998/1999 academic year either did not know even the basics or were not technologically competent in their use of computers for learning activities. The writer found at least one student or more in each cluster who could be considered functionally computer illiterate. Other students who were not comfortable enough with the basics to know how to apply the skills in a library learning activity without special help were just "technologically challenged."

In contrast to the students who were computer illiterate, the technologically challenged students in CYS had at least a rudimentary knowledge about computers. This meant that they usually knew how to use a mouse, how to type in a URL to access a Web page, and how to send email. However, as with the students described by Lowther, Bassoppo-Moyo, and Morrison (1998), these students really didn't understand how to utilize their computers for more sophisticated sequences of activities that online research necessitated. For example, "technologically challenged" CYS students often had problems grasping how they might use abstracts located online to request document delivery from Distance Library Services.

Just as Espinal and Geiger (1995) had found, the writer learned that having students with inadequate computer skills in the cluster made it more difficult for her to provide successful library training. The librarian providing bibliographic instruction had to help technologically

challenged students with computer issues while simultaneously trying to teach the entire class how to conduct doctoral-level research. Needless to say, the writer's failure to anticipate this issue presented problems for her at the implementation stage.

While doing the situational analysis, the writer also failed to consider that the CYS program did not provide technologically-challenged students with remedial technology training. Providing this kind of support is always a challenge for an academic program dealing with distance students. Administrators in CYS were aware that they needed to do more than simply mandate computer skills, and there had been some discussion about the possibility of screening students entering the program for proof of a basic level of computer competence. However, the writer was aware of no plans to implement such a screening test as of this writing.

A second weak area in the writer's analysis related to library assignments. The writer expected CYS students to be motivated. As a result, she expected that the CYS students would be the kind of self-motivated learners who would seek out the information that they needed and would, therefore, complete assignments even if those activities were not part of required work in their study areas.

Contrary to Knowles's (1984) findings that adults were self-directed and independent learners, however, the writer found most of the adult students in CYS clusters with whom

she worked were not self-motivated when it came to activities they deemed marginal to their immediate objective to obtain a doctorate. The writer had been wrong in her assumption that the desire to develop research learning skills that students could use for their literature reviews would a sufficiently motivation for these adult learners. In retrospect, the writer concluded that students needed a more concrete incentive for completing the assignments.

The writer was sometimes able to compensate for the lack of motivation by prodding students to complete their work. In the case of Assignments 1 and 2, the initial completion rates had been poor. In spite of this, reminders sent out by the cluster coordinators and the writer proved a sufficiently successful strategy for the writer to be able to meet Outcomes 2 and 3. When there was less time to send out reminders, lack of motivation became insurmountable, however.

Problems communicating with distance clusters contributed to the problem of getting students to complete their library assignments. Because the CYS students in these five clusters were attending classes at distance sites, the writer did not have the option of just "dropping by" the classrooms to remind students that they needed to complete their library assignments. This meant that the writer had to work harder than with traditional students to compensate for this barrier to classroom communications.

The writer had failed to consider when she was in the planning stage of her practicum the problems that would develop from new clusters being scheduled to start late in the academic year. Part of the problem had been that the writer had not fully understood the various issues entailed in getting a new cluster started. CYS clusters could not begin until the cluster coordinators at the sites had recruited a sufficient number of qualified students to make the cluster economically viable. This meant that start dates were tentative until relatively late in the planning process. The initial start dates for the clusters in Boston and Alexandria, for example, were postponed several times. On other occasions, successful recruitment could mean that a cluster started sooner than anticipated. For example, CYS administrators had not initially projected that cluster 97 would start until the 1999/2000 academic year.

The postponed start dates for clusters 95 and 96 had the unanticipated result of putting their practicum orientations close to the time for the 1999 summer institute. The schedule change meant that the writer did not have sufficient time to remind students in these late-starting clusters to complete Assignment 3. Only nine of 22 students in cluster 95 and five of 21 students in cluster 96 completed the assignments. As Table 2 illustrates, the completion rates of students in clusters 95 and 96 were

notably lower than those of students in the other three clusters.

Table 2

Completion Rates of Assignment 3 by Cluster

	Assignments Completed	Total No. of Students
Cluster 93	19	27
Cluster 94	22	24
Cluster 95	9	22
Cluster 96	5	21
Cluster 97	20	34

Other factors may also have impacted completion rates of some clusters. Because students in cluster 93 did not receive library training when they attended their practicum orientation, they only received training asynchronously. This additional factor may have accounted for the fact that, of the three clusters receiving training earlier in 1999, cluster 93 had a lower completion rate than clusters 97 and 94. In spite of having several months to complete Assignment 3 and of receiving both email and letter reminders, only 19 of the 27 students in cluster 93 did so.

Administrative issues relating to the admissions policy of CYS was yet another area where the writer's situational planning had failed to anticipate problems. The writer had, perhaps naively, assumed that when a cluster started that there would be a finite number of students. She had not been

aware that the CYS administration would sometimes permit students to conditionally attend the first set of classes at the program orientation while the students waited for the processing transcripts and completing other minor administrative details in the acceptance process to be completed.

This practice presented the writer with several problems that she had not anticipated. First of all, the initial lists of students in new clusters that the writer received was often incomplete. The CYS program would send the writer a list of accepted students in the cluster in a timely manner, but this list usually did not include conditional students whose applications were still being processed. The writer usually did not receive the final version with a list of all accepted students who were starting in that cluster until a month or longer after the program orientation had taken place. This made getting an accurate count of the student population attending each program orientation difficult.

Not having a definitive head count until late in the process presented several problems of varying degrees of seriousness. The writer had to decide whether to use the list of students that she had in hand on the day of the program orientations for her roster of students who would be expected to complete the library assignments or try to amend the list herself. The writer finally decided to use the

initial list and amend it herself to determine the number of students she used as the definitive number of students attending the program orientations. The writer used the final "official" list of students enrolled for the number of students who would be expected to complete the library assignments.

The problem with learning the correct number of students attending the library training sessions in advance had a second and more serious ramification for library training. The writer prepared training materials to bring to the sessions based on the head counts provided in advance. This presented problems when there were significant disparities between the number of students who were listed to attend the session and the number of students actually attending.

Another problem for students not officially accepted in the program yet was the issue of obtaining these provisional students UNIX accounts. When the writer started her situational analysis, she had been aware of past problems with getting CYS students UNIX accounts in a timely manner. The writer was very aware of the fact that, without UNIX usernames and passwords, valid NSU students could not access NSU's password-protected databases. Based on her assessment, the writer developed and implemented a solution for the problem that entailed having the accounts person at FGSE&HS create batches of UNIX accounts that were to be disseminated

to all the students in a cluster on their very first day in the program. Only students on the class roster received UNIX accounts.

The problem, however, was bigger than just getting an up-to-date class list. University policy prohibited students not officially enrolled from being issued UNIX accounts until they were officially accepted in the program. This meant that, even though these students were at the program orientation and had attended the writer's library training session, they could not obtain the UNIX accounts they needed to practice using the newly introduced library skills. This also meant that these students were unable to complete the first two library assignments or use the online databases in the Electronic Library for class assignments.

The process for creating UNIX accounts for students accepted late did not work well. A number of conditional students accepted late during the 1998/1999 academic year did not receive their accounts for months. One student in cluster 95 who had started classes in February as a conditional student illustrates this problem. This particular student did not receive her UNIX account until the 1999 summer institute, five months after her program orientation. Because of the long delay between training and receiving her account, the writer was not surprised that this particular student never completed any of the library assignments. More importantly, the problem this student had

in obtaining the UNIX account was not an isolated case. Several other students who started during the 1998/1999 academic year either contacted the writer or called the Einstein Library about similar problems with obtaining their UNIX accounts.

Some have argued that students with problems obtaining their accounts have not always made a vigorous effort to get the matter rectified with the CYS office or through the cluster coordinator. The writer feels strongly that the ultimate responsibility of providing accounts in a timely manner rests squarely on the university. Student tuition entitles students to the right to access library resources. Therefore, the university is responsible for ensuring that students obtain UNIX accounts in a timely manner.

This brings the writer to a second, more procedural problem that CYS students trying to obtain UNIX accounts encountered during the 1998/1999 academic year. Some of the conditional students encountered administrative redtape or roadblocks in acquiring their UNIX accounts. Students with account problems were directed to contact the UNIX account person for the FGSE&HS. Some students encountered problems reaching this person by phone. If they tried to leave a phone message, the calls were often not returned. Two students reported problems with leaving voice-mail messages because the audix was already completely full. When students did speak with the UNIX account person, they were instructed

to FAX or mail the completed account forms directly to this person's office at FGSE&HS and call back in a day or so for their account information. However, the writer spoke with students who, when they called back, were told that the office had never received the request or that the forms simply could not be located.

The writer looked into the problem of why student accounts seemed to get lost once they reached FGSE&HS. She concluded that there were two factors contributing to the problem. Students often had difficulties identifying the name of the specific program in which they were enrolled. Students were confused by the various acronyms including FGSE, FGSE&HS, PET, CYS, CYFS, MOP, and SPS for a wealth of program and specialization names. If the student became confused and used an incorrect program name or acronym when they completed the UNIX request form, the person creating the UNIX account would have had trouble knowing where to send the form to verify that the student was currently enrolled in an NSU program. This would create problems when forms were forwarded to the wrong program. Once the forms were out of the UNIX account person's hands, he or she would simply wait for confirmation that the student was actually enrolled before creating the account.

The writer concluded that the verification process accounted for the majority of the problems that occurred with accounts being created for CYS students. The librarians

at the Einstein Library helped address this from their end by directing students to the technology contact person in CYS and letting him route the UNIX account request forms through his office. This plan had the added merit of giving CYS the opportunity to document the requests that were being directed to the UNIX account person. This plan should alleviate some of the problems for students in new clusters.

In spite of the problems identified above, the writer concluded that the overall analysis and planning process for the practicum went well. Perhaps the best evidence of the success of the writer's planning process was the degree of fidelity (Smith, 1998) between the writer's practicum proposal and the actual execution of her plan. With the exception of being unable to offer synchronous training to cluster 93, the writer completed every activity and strategy she had planned for the various clusters. The only deviations were positive ones that provided additional opportunities to integrate library training into the CYS program. These additions will be discussed more fully in the sections on the methods of delivering instruction and on unanticipated outcomes.

There is a second kind of planning that needs to be addressed next, and that is the planning that went into structuring the practicum proposal. The writer sometimes created problems for herself because of the precise way she constructed the proposal. The writer will discuss the

decisions that she made at the practicum proposal stage that negatively impacted the success of her practicum.

The writer's choice of wording for several of her outcomes created pitfalls that she should have avoided. The targeted completion rates for library assignments created one type of problem. The writer had selected the targeted rates when she had first negotiated with CYS to integrate library assignments into the first two CYS study areas. If this plan had come to fruition as originally planned, library assignments would have been required as part of the class work. In that context, the writer's goal that 65 of 75 students would complete Assignments 1 and 2 for Outcomes 2 and 3 and Assignment 3 for Outcome 5 seemed reasonable and attainable. The targeted ratios for Outcomes 2, 3, and 5 became a problem when the implementation proposal was revised. When the CYS administration decided to integrate library assignments into the program orientation and the practicum orientation rather than the study areas as originally planned, these targeted ratios became less achievable.

The writer should have adjusted her targets when the implementation plan was first renegotiated. She came to this conclusion in spite of the fact that she was able to successfully meet two of the three impacted outcomes. The writer learned that it was not a good idea to set outcome goals in which the margin for failure was so narrow that it

did not allow for the occurrence of additional unanticipated events. The delay in starting clusters 95 and 96 impacting the completion rates for Assignment 3 illustrates precisely the type of unanticipated events that can have a negative impact on outcomes.

Another change that the writer should have made when she adjusted the practicum proposal concerned the targeted satisfaction level for the training sessions. The writer should have lowered her goals here as well to allow for unanticipated events. The writer had not foreseen that the Einstein Library would add several questions to their user satisfaction evaluation form that was routinely used for library training sessions. (See Appendices A and B to see the original and modified versions of the survey.) This change had the unanticipated result of noticeably lowering the overall average of the scores. Fortunately, this mistake did not prevent the writer from successfully meeting Outcome 6.

TABLE 3

Comparison of Likert Scale Scores on Individual Questions on the Library Training Session User Satisfaction Surveys Completed at the Program Orientation, the Practicum Orientation, and the 1999 CYS Summer Institute

Scores	Program Orient.	Practicum Orient.	Summer Inst.
Question 1	4.6	4.7	4.9
Question 2	4.5	4.7	4.9
Question 3	4.4	4.9	4.9
Question 4	4.3	4.5	4.9
Question 5	4.4	4.5	4.9
Question 6	4.6	4.7	4.9
Question 7	4.0	4.2	4.7
Question 8	4.1	4.3	4.8

As Table 3 quantifies, the average scores for Questions 7 and 8 were noticeably lower than those for the first six questions. The Einstein Library had added these two questions to better quantify students' comfort level with using online resources for SACS. This proved to be both an advantage and a disadvantage, however. On one hand, having Questions 7 and 8 on the form provided the writer with additional, quantifiable evidence that her practicum was achieving the desired results. On the other hand, as Table 3

also documents, student scores on these specific questions were substantially lower than the scores on the first seven questions. Fortunately, in spite of the low scores to these questions, the writer was able to achieve her targeted goal of 4.5 on the Likert Scale for the overall average of scores and successfully meet Outcome 6.

The wording of Outcome 4 created problems that could also have been avoided with better planning on the part of the writer. The goal of having 65 of 75 students receive training at their practicum orientation seemed very reasonable when the writer was developing her practicum proposal. However, the writer had not foreseen that one cluster would be unable to attend the live training and would receive their training asynchronously. In hindsight, the writer could have been less precise in her wording without impacting or endangering the intent of her outcome. For example, the writer did not have to specify that students physically "attend" the library training session. She could have stated that students would "receive" or that students would "be offered" the training. This wording would have left the writer with the option of offering training either synchronously and asynchronously.

The wording of the completion rates targeted in Outcome 9 presented yet another problem. The writer quantified the threshold number of students in clusters 93, 94, 95, 96, and 97 who had to complete the survey in order for the writer to

achieve her goal. Even though the writer's intent had never been to tie the success of her outcome to a specific number of students completing the satisfaction surveys, the wording of the outcome had this unanticipated consequence. In retrospect, the writer should have realized that surveys rarely obtain such high completion rates. She should have set the targeted completion rate substantially lower or only specified the satisfaction level. The writer learned that the wording she used in the practicum proposal was just as important to the success of her practicum outcomes as the analysis she did in planning her proposal.

Collaboration and integration of library instruction into the curriculum. The writer wanted to provide CYS students with a relevant context for learning about online databases. To accomplish this, she collaborated with Child and Youth Studies to integrate library instruction into the curriculum. The writer was very aware that this kind of collaboration depended on a strong spirit of cooperation and a sincere belief in the goals of the collaborative effort by people in both the program and the library.

The writer was also very aware of the fact that although she had a "power base" within the Einstein Library, she had very little "leverage" within Child and Youth Studies. The success or failure of the writer's practicum depended on the writer's accurate assessment of the level of

cooperation that would be forthcoming from the staff of Child and Youth Studies.

In spite of the potential risks of collaborative efforts failing, the writer elected to try this approach with CYS for several reasons. First and foremost, she had a very good working relationship with several key people in Child and Youth Studies. Secondly, because the Child and Youth Studies program was organizationally in the same department with Instructional Technology and Distance Education (ITDE), the writer knew that the CYS staff understood both the challenges of getting a practicum implemented and the importance of the practicum process in the writer's doctoral program.

During the course of the practicum implementation, the writer's assessment of the potential for problems proved correct. The writer, however, failed to anticipate the exact nature of the events that would threaten the successful implementation of her practicum.

Perhaps the most important challenge to the successful implementation of the writer's proposal arose in the area of administrative reorganization. First of all, two of the key people instrumental in negotiating CYS's role in the writer's practicum left unexpectedly. The director of Programs in Education and Technology moved to a new position during a departmental reorganization. Very soon after that, the Director of Practicums retired and was replaced by

someone with the new title of Director of Applied Research. The changes in personnel meant that both people with whom the writer had originally negotiated the plans for her practicum implementation were no longer there.

The reorganization caused unanticipated problems because people like the new Director of Programs in Education and Technology did not have detailed knowledge of the specific nature of the implementation plans that had been negotiated or the changes in the CYS practicum orientation that had been planned. This meant that the writer had to renegotiate the details of how she would implement her practicum and change several important details. The writer replaced the original plan of the two-hour bibliographic instruction session during the practicum orientation with two one-hour sessions at the program orientation and the practicum orientation. She arranged for students to be "required" to do performance-based library assignments rather than having the assignments integrated into their first two study areas. Because these assignments were no longer graded assignments, it meant that the non-completion of the assignments no longer had consequences to student grades.

Shortly after that, Programs in Education and Technology underwent a second reorganization that impacted Child and Youth Studies. The director that the writer had just negotiated the changes with moved to head a new

department within FGSE&HS. Fortunately, this time the consequences of the reorganization were less traumatic for the writer. By this time, other CYS administrators in the program were aware of the plans to offer library training to the clusters starting during the 1998/1999 academic year, and they proved very supportive.

Not surprisingly, the second reorganization did result in some unanticipated problems. When the director left, CYS decided to have an executive council run Child and Youth Studies. As a result, administrative decisions were handled by various members of the executive council. This system worked well when the administrative issues could be easily categorized to fit the job responsibilities of each member. However, questions about planning for library training did not always fit neatly into standard areas of responsibility. There were times when the members of the council were unsure whom the appropriate contact person was. Although this created some difficulties, the writer preserved and was able to successfully coordinate efforts between the Einstein Library and CYS.

In spite of the problems that stemmed from the various reorganizations, all the different stakeholders in Child and Youth Studies were very helpful throughout the entire practicum implementation. Cluster coordinators played a very important role in this process. The Greenville cluster coordinator, for example, provided invaluable suggestions

about developing Web-based back-up materials for students. The writer developed the CYS practicum help pages (see Appendix E) based on this recommendation. The cluster coordinator then linked to these Web pages on her cluster Web page. The writer later added links to the pages of other cluster coordinators as well. The other cluster coordinators were equally helpful for everything from ironing out details about the presentations at the cluster sites to reminding students to complete their various library assignments.

Individual faculty members in CYS were another group that collaborated with the writer during the practicum implementation. One important area of cooperation was on developing Web materials for CYS students. One faculty member, for example, suggested that the writer expand the materials she had prepared to include a tutorial on how to develop a search strategy in PsycINFO (see Appendix E). The writer also worked with this faculty member to provide information about appropriate ERIC descriptors for the first study areas in the Child and Youth Studies program. This faculty member also collaborated with the writer to integrate library instruction into one of the CYS specialization areas, SPS (Special Services/Exceptional Education).

The ultimate success of the writer's practicum is a tribute to the spirit of cooperation that the writer received from all the administrators and staff in the Child

and Youth Studies Program both in North Miami Beach and at the various CYS sites. The writer can not stress how important the support of these people was to the ultimate success of her practicum. The fact that the writer succeeded in spite of the potential for insurmountable roadblocks is testament to this spirit of cooperation.

On a different note, the integration of library instruction into the curriculum was another important factor in the successful implementation of the writer's practicum. The fact that CYS actually began incorporating training sequentially and developmentally into the curriculum rather than as "one-shot" training was very important. The writer was able to provide bibliographic instruction sessions at the program orientation, the practicum orientation, and the summer institute and to reinforce the training sessions with related performance-based library assignments. The result was that students were able to master the basic skills of simply learning how to access the system and understanding how the ERIC database was organized before moving sequentially on to how they could develop a search strategy and begin an exhaustive literature review. Tying these performance-based activities to the practicum process made the library sessions more relevant.

Methods of Delivering Bibliographic Instruction

Face-to-face training was the most important single instructional strategy used. The writer provided

bibliographic instruction at the program orientation, the practicum orientation, and the 1999 CYS summer institute. Student comments (see Appendix B) document that they overwhelming prefer live, face-to-face training. Quantitative statistics bears out the writer's assertion. The writer examined the statistics collected from the various user satisfaction surveys administered at bibliographic instruction sessions. She analyzed the data from two perspectives. The writer first examined them from a chronological viewpoint. As Table 1 already indicated, satisfaction rates were high on all three sessions with 4.4 at training sessions at the program orientations, 4.6 at the training provided at practicum orientations, and 4.9 at the 1999 summer institute sessions.

A close analysis of several of the questions on these user satisfaction surveys also proved useful. Students demonstrated that they recognized the need and usefulness of the library training they had received. All but one of 256 students or less than 1% of the students completing the satisfaction survey at the various bibliographic training sessions replied that he or she would recommend "that the next cluster or class also receive this training." A number of students answering this yes-or-no question managed to communicate their feelings about the topic with penciled in comments. One student, for example, added an exclamation point and three check marks when selecting "yes" while

another student pencilled in "Yes!" in addition to check the "yes" choice.

As with the results of earlier surveys, the results compiled from all three sets of sessions showed that these students preferred face-to-face training. Only eight or 3% of the 256 individuals responding suggested that participants would either want training delivered via the Internet either in addition to the live training session or in place of a live training session. The data documented that only 3% of all students responding indicated that they were willing to consider trying to use this technological solution for receiving library training. Students did like self-paced tutorials on the Internet slightly better. Eighteen participants or 7% of the 256 respondents indicated that they wanted either self-paced in tutorials in addition to the live training session or in place of live training session.

The Library Services survey (see Appendix C) provided a different perspective on student satisfaction levels with library services including library instruction. The writer used the identical wording for the questions in this survey that had been used in a previous survey of students who graduated from the Fischler Center for the Advancement of Education (FCAE)that had been completed by Research and Planning (MacFarland, 1996a). Table 4 documents that CYS students demonstrated a marked improvement in their

satisfaction levels when compared to the benchmark established by the earlier scores.

TABLE 4

Comparison of Likert Scale Scores on Individual Questions Found on the Research and Planning User Satisfaction Survey Administered to the Fischler Center for the Advancement of Education* and the Library Service Survey

	Survey of FCAE Scores	CYS
Question 1	3.6	3.9
Question 2	3.7	4.0
Question 3	3.3	4.1
Question 4	3.6	4.1

* From Graduates of the Abraham S. Fischler Center for the Advancement of Education Reflect on their Experience with Nova Southeastern University (1996a).

An analysis of Table 4 documents that educational graduate students who had graduated from the program between 1992 and 1995 had substantially lower satisfaction levels than CYS students who completed the Library Services survey at their 1999 summer institute. The table highlights the fact that FCAE graduates had lower satisfaction levels in all four library areas surveyed: (1) the orientation program provided by the library, (2) access to information through

technology,(3) the instructional support services provided, and (4) the amount of information technology that was infused into the curricula. The mean of responses to Question 1 about what the survey terms the "library orientation" had the largest difference in levels of response. FCAE graduates had a satisfaction rate of 3.6 with the library training while CYS students had a satisfaction rate of 3.9.

TABLE 5

Comparison of Likert Scale Scores on the Library Services User Satisfaction Surveys Completed by Clusters that Started in the 1998/1999 Academic Year and Cluster that Started Earlier

	New Clusters	Older Clusters
Scores	4.0	3.9

The writer then used the scores on the Library Services survey that were completed at the 1999 summer institute to look at the satisfaction levels of the CYS students starting in the 1998/1999 academic year when compared to students from earlier CYS clusters also attending the summer institute. Table 5 shows that the overall satisfaction scores were not that different. Students in clusters 87, 88, 89, 90, 91, and 92 had a satisfaction level of 3.9 on the Likert Scale while students in clusters 93, 94, 95, 96, and 97 had a satisfaction level of 4.0.

TABLE 6

Comparison of Likert Scale Scores on Individual Questions on the Library Services User Satisfaction Surveys Completed by Clusters that Started in the 1998/1999 Academic Year and Cluster that Started Earlier

	New Clusters	Older Clusters
Scores		
Question 1	3.9	3.8
Question 2	4.0	3.7
Question 3	4.1	4.2
Question 4	4.1	3.7

The areas of difference between the two groups taking the Library Services survey is more apparent when one looks at the satisfaction scores for each question in Table 6. The difference between the two groups was particularly apparent on Questions 2 and 4. Students in the new clusters rated training on how to access information in electronic and other formats with a 4.0 while the older clusters only had a satisfaction level of 3.7. Students in the new clusters showed a 4.1 satisfaction rating for the level of infusion of information technology into the curricula while students in the older clusters had a satisfaction level of only 3.7.

Although the quantitative data is revealing, it is important to augment this evidence with qualitative

information for a more well-rounded understanding of the feelings of CYS students starting during the 1998/1999 academic year with regard to the library training and their feelings about being able to use the online resources. A great deal can be learned by looking at student comments on both the user satisfaction surveys and Assignment 3.

First of all, the vast majority of students commenting on library training sessions stated that they found the sessions helpful. For example, one student from cluster 97 said, "You do an outstanding job in presenting the information". Similarly, a student in cluster 94 commented, "The library training at the practicum orientation was extremely beneficial. It was refreshing to learn how easily we could do our own searches through the electronic library. Your instruction was clear and very helpful".

Other students indicated that they thought it was important to have the library training. In the Library Services survey, several students from the earlier clusters who had only received "one-shot" training articulated problems with having training only offered at the beginning of their program. Comments included, "The Electronic Library was introduced at the first cluster meeting when everyone was already overwhelmed. That would be a good start, but I would like to have had an in depth demonstration at the Practicum Orientation," "More training like offered on Wednesday morning for advanced accessing info is needed

early in your Nova experience," and "Not enough pre-training but excellent help at the library by library personnel. Thank you!".

Still other students indicated that they wanted even more training than they had already received. One student from cluster 97, for example, stated, "Need more training and exposure to become proficient -- more opportunities for each cluster should be scheduled to receive this important training" while another student stated, "I felt an one day training was not enough information/hands on!".

Just as importantly, students indicated that the training helped them feel more comfortable with the material. One of the students who had been computer illiterate when she started stated, "I'm beginning to feel better about the library" while another stated, "It's taking me a long while, but thanks to Johanna, I'm feeling better each session". In Assignment 3, a student in cluster 96 explained,

> I have found each of your trainings and related activities very helpful. All the information is presented in a logical and organized fashion, with visual aids to complement the written material ....thorough, accurate, and well designed.

Not all students liked the writer's approach to training. One student from cluster 95 commented,

> If further library service training is offered - could it please be more advanced that [sic] just how to use basic search engine? Also, I think that by talking about the benefits of using Distance Library Services, and the databases in it, to find literature needed, and to spend many sessions explaining this, and then telling students that using the databases to download information cannot be the method in which we receive the majority of information, is contradictory.

Several students indicated that they would have preferred getting into the more advanced techniques faster. Some students focused on their feelings of frustration about the varying levels of computer skills that slowed down the process. One student put expressed this sentiment diplomatically, "I found the library training helpful but also a little frustrating. We are all on such different levels that it is difficult for the instructor and everyone else". Another student suggested that the students taking training that incorporated technology be divided by levels of computer and technology skills. This student stated,

> I believe since there is such a vast range of skills in the class, it would be helpful to have different levels so instruction could be provided to those just beginning, as well as those who have had experience using computers. Although I don't mind helping others,

I often miss important information when I am trying to help others. I don't think this is anyone's 'fault', but I believe since our time is limited in the lab it is important to make every minute count.

These students' comments reflected Espinal and Geiger's (1995) conclusion that when instruction is geared to the level of students with limited computer skills, the computer literate students in the class get bored. Although the writer had been aware that some students were frustrated by the sequential and developmental approach, she decided not to accelerate the pace of the training. The writer concluded in both her formative and summative evaluation that moving faster would have disadvantaged the majority of CYS students who possessed less computer and technology skills.

In fact, instead of accelerating the pace of the bibliographic instruction sessions, the writer decided to slow the pace of the training on the basis of her formative evaluation of comments by a number of students in clusters 93 and 94 in the program orientation satisfaction survey. A number of students found the pace too fast or that there was too much information for them to absorb in the limited amount of time available. Comments included "Not enough time to work w/computer. Felt too rushed. Too stressed" and "The information presented was helpful but was a lot in a short time period!". As a result, in the sessions for clusters 95, 96, and 97, the writer made sure that she did not discuss

advanced techniques that might distract or confuse novices. Simplifying the content seemed to work for most students. Students in later clusters did not comment about the pace or quantity of information.

In the writer's formative evaluation, the writer identified a second problem with the library training at the program orientation. She realized that having the library training on the same day students received their program orientations resulted in "information overload." As a result, the writer recommended to CYS that the timing of the first bibliographic instruction session be changed for clusters starting in the 1999/2000 academic year.

When doing the summative evaluation, the writer concluded that there was an underlying issue that needed to be considered when analyzing user satisfaction surveys. She concluded that a lack of technology skills was an important factor in determining student satisfaction levels with the training. Based on comments like the following, "I felt it went by so fast. As a true novice [emphasis added] to using the internet, I am coming away from this a bit overwhelmed", the writer determined that in many cases, students were overwhelmed because they lacked the technology skills to understand and process the information being presented. No amount of adjustments to the pace of instruction was going to remedy a lack of prerequisite computer and technology skills. As a result, the writer concluded that, no matter

how good the training was, students who lacked the remedial skills were going to feel overwhelmed by the content.

In her summative evaluation of the various alternatives for delivering face-to-face training, the writer concluded that hands-on training was the best alternative for CYS students. The writer's conclusions agreed with the findings of Adams (1995), Glogoff (1995), Gresham (1997), and Kaczor and Jacobson (1996). Although the writer recognized that providing hands-on training was not always a feasible option for students taking classes in a cluster format, she concluded students strongly preferred having hands-on library training. Comments at the program orientation included "Should have been hands-on for all -- would help next class for all experiential learners" and "Would have been helpful to be at a computer to practice going into the databases and maybe even printing an article."

In the Library Services survey, one student expressed his or her frustration with not having hand-on training at the cluster. As this student explained,

> The application process is critical in technology. The students needed the opportunity to practice while the instructors were present. It was difficult to return to our homes/businesses, and begin the initial application of the instructional material. Obviously, the students in our cluster were able to go through the application process or we wouldn't be in summer institute 1999.

However, the amount of frustration expressed by the cluster members was great.

When the writer did provide hands-on training, student comments were positive. The writer was able to offer optional hands-on sessions at the 1999 summer institute on July 14. Comments in student evaluations for these optional hands-on training sessions indicated that students had found these hands-on sessions very helpful. Quantitative evidence supported the writer's conclusion. All 35 students completing the training evaluation forms indicated that they thought the session should be offered again the next year.

An analysis of the results of the various user satisfaction surveys where the respondents had received hands-on sessions at the summer institute indicated that students had liked having the opportunity for hands-on training. Only one student of all the respondents indicated that he or she would have preferred getting training via a live demonstration offered on the Internet. As with the results in earlier user satisfaction surveys, students did not ask for alternative methods for delivering the training. In this particular group of CYS students, not one respondent wanted self-paced training via the Internet. Instead, students clearly voiced their approval of having hands-on training.

Based on student comments about their desire for hands-on sessions, the writer used the survey data to look at the

student satisfaction levels of hands-on training versus live demonstrations. For the live demonstration sessions, the writer used the results of the user satisfaction surveys for the program orientation training for clusters 93, 94, and 96 as well as the user satisfaction surveys for the practicum orientation for clusters 94 and 96. For hands-on sessions, the writer used the user satisfaction surveys obtained from cluster 97 for both the program and practicum orientations as well as the user satisfaction survey results from the optional hands-on sessions and SPS specialization sessions offered at the 1999 summer institute.

The writer had expected that student satisfaction rates would be higher in the hands-on sessions than in the sessions were the students received live demonstrations. However, a comparison of the overall satisfaction levels of students receiving the two types of training for each question revealed very little difference in the satisfaction rates of the two types of presentations. Individuals receiving hands-on training had an overall satisfaction level of 4.7 while those who attended live demonstrations had the only slightly lower satisfaction level of 4.6.

An analysis of the individual questions shed a little more light on student feelings. Table 7 breaks down the averages of the student responses for each question. The only notable results are for Questions 7 and 8.

TABLE 7

Comparison of Likert Scale Scores on Individual Questions on the Library Training Session User Satisfaction Surveys for Live Demonstrations and Hands-on Training

	Live Demonstrations Scores	Hands-on Training
Question 1	4.6	4.7
Question 2	4.6	4.7
Question 3	4.9	4.9
Question 4	4.6	4.7
Question 5	4.7	4.7
Question 6	4.7	4.6
Question 7	4.4	4.6
Question 8	4.1	4.6

Perhaps not so surprisingly, students who received hands-on training responded that they felt more comfortable using online resources than before and that they felt more confident that they could locate full-text articles than before than students only seeing the skills demonstrated. The contrast between the two groups was most notable for Question 8 in which students were asked to rate their feelings of confidence that they would be able use the skills taught to locate full-text articles. Student

responses jumped from 4.1 for the live demonstrations to 4.6 when the training was hands-on.

On a different note, the writer concluded that providing optional training at the 1999 summer institute offered students was important because it offered students a second opportunity to master or reinforce their mastery of online search techniques. One of the most rewarding aspects of the optional sessions occurred when the writer would see students suddenly "get it."

Students could not seem to agree about the best time to offer library instruction during their program. A group of students did not want the first library training session to be offered at the program orientation. The program orientation was the students' very first day in the CYS program, and the library training was scheduled at the very end of that busy and stressful day. Comments revealed that, by the time the library training was being delivered, students were feeling bombarded and overwhelmed by all the information they were being provided. As one student put it, the library training session "happen[ed] after a brain-drained session from 8:30-3:30". Another student explained that "everyone was kind of feeling overloaded" at the end of the day. Another student suggested in the Library Services survey that library training should wait until students could see its relevance: "I received the library services training very early in the program. It was irrelevant at

that point. A retraining should be done later in the process when it becomes more relevant and though [sic] my experience and the library questions become easier to ask".

Not everyone agreed that library training should wait until later in the program, however. Other students indicated that they wanted the training as early as possible. Quantitative data from questions on the user satisfaction survey used at the program orientations (see Appendix B) indicated that 40% of the 129 students completing the training wanted the training earlier rather than later in their program. Comments included, "Today's training first day of program," "Needs to be done first day,""1st session," and "Now is good."

Some students wanted additional training to be offered. Some wanted the training offered several times during their programs. Comments included, "Both A and B [earlier and later]", "More than once," and "Need both [earlier and later]". Others wanted more time for the library training. Comments included: "Some of us would have liked ½ of the day to specifically attempt searches" and "My only recommendation is that perhaps an entire day, or at a minimum, a half day be scheduled for this training in the future".

On a different note, the writer did have an unexpected opportunity to evaluate the effectiveness of asynchronous training as an alternative to face-to-face library training

sessions. When the writer was unable to deliver cluster 93's planned library training session at the practicum orientation, the writer used this as an opportunity to try using asynchronous training with that cluster. The writer added speaker's notes to her PowerPoint slides, printed the presentation, and mailed it to the students in cluster 93. Students instructed to use these asynchronous materials to complete Assignment 3.

Based on the writer's evaluation of the quality of work that cluster 93 students provided on Assignment 3, she concluded that this approach was only moderately successful. First of all, when the completion rate of cluster 93 was compared to that of the two other clusters that received library training in the first quarter of 1999, the writer found that only 19 of the 27 students in the cluster completed Assignment 3 even after receiving reminders by email and letter. In contrast, 22 of 24 students in cluster 94 and 20 of 34 students in cluster 97 completed the assignment.

More importantly, an analysis of the quality of the work that was submitted by cluster 93 revealed that some students either had not taken the time to read the materials or had not grasped the principles. The most glaring example were two students who used search engines to do the assignment rather than four scholarly databases as specified.

In the writer's summative evaluation of the asynchronous approach, she came to two conclusions. First of all, based on the low completion rate of cluster 93 and the fact that even students who did complete the assignment demonstrated that they had not grasped the underlying learning objectives, the writer concluded that these students were less receptive to self-directed learning as an instructional methodology than to face-to-face instruction. This conclusion was not surprising since the students in all the CYS clusters had selected a distance education program that was primarily structured around face-to-face instruction. Secondly, the writer concluded that completion rates were also adversely impacted by the fact that Assignment 3 was non-graded. Students who were either technology challenged or less self-motivated had little external inducement to overcome their disinclination to do the work when there was no grade attached to the assignment.

As in other surveys, qualitative data documented that students in cluster 93 did not like the asynchronous approach as much as traditional face-to-face training. One student, for example, explained, "Did not receive training that was planned but canceled for cluster 93-2/99. Do not feel real comfortable that I know how to access all that is available".

As planned, the writer provided the CYS students that started their programs during the 1998/1999 academic year

with a variety of printed materials. Students in clusters 93, 94, 95, 96, and 97 received a copy of the Introduction to Distance Library Services and the Electronic Library with their orientation packets at the beginning of their programs. Students also received updated versions of the booklet at the practicum orientation and the hands-on sessions at summer institute.

A wide variety of other printed instructional materials were also provided to students. The writer supplied students with printed copies of the PowerPoint slide presentations at the library training sessions (see Appendices G, H, and M). The writer prepared a number of help pages including a searching tips page (see Appendix K), a page for developing search strategies (see Appendix J), and a page listing useful databases used for the library training offered at the practicum orientation (see Appendix I). The writer developed a worksheet that was used for the SPS specialized training at the hands-on training offered at summer institute (see Appendix L). In addition, the writer provided students with printed copies of two Web pages, the Library Help Page for CYS Lit Review and the Web page on how to locate peer-reviewed articles (see Appendix E).

Evidence supports the conclusion that students found the written documentation that the writer developed helpful. Comments by students in both the program orientation and the practicum orientation's evaluation form specifically noted

that the print materials had been helpful. Comments included "Having everything organized and easy to follow was very helpful", "The visual presentation gave us the opportunity to respond w/notes on the hard copy", and "I liked having copies of the slides in handout form for future reference."

Comments in Assignment 3 further substantiated that students were using the documentation as intended for just-in-time help. One student in cluster 96 chronicled how she first tried to do Assignment 3 by going to the NSU home page and using the NSU search engine to try to locate a library resource. When that approach proved unsuccessful, the student explained that he or she "returned to hard copy from the Program Orientation booklet from March 99, bless your heart!" where the student found the answer he or she had been looking for. In other words, this student used the documentation to locate the library's URL.

Web-based instructional materials proved useful. The writer developed an array of online Web materials to help CYS students. (For a list of Web addresses, see Appendices D and E.) As planned, the writer developed a series of remedial Web pages in the fall of 1998. The usage statistics indicate that students found these pages useful. These pages were accessed a total of 5,330 times between November 1 of 1998 and August 1 of 1999. The writer developed additional Web pages (see Appendix E) in the spring of 1999. Quantitative evidence provided by usage statistics documents

that these pages were also used. These pages were accessed a total of 2,243 times between the time they were published to the Web during the spring of 1999 and August 1 of that year.

Although the sheer number of times the Web pages were accessed is impressive, it is difficult to draw too many conclusions from these statistics. First of all, the Web counter only counted the number of "hits" or number of times that the pages were opened. The writer has no way of assessing whether students simply opened and immediately closed the pages again or whether they used the materials to get one-on-one help as intended. Secondly, these statistics did not provide any information about who might have been accessing the pages. Because these pages were not password protected, there is no way of knowing that the people accessing the pages were even NSU students or faculty.

The writer was able to establish through other means that at least some non-CYS students were routinely using the Web pages developed by the writer. The writer learned that one of the CYS cluster coordinators who was also an online professor in the Graduate Teacher Education Program (GTEP) was sending her GTEP students in an online research class to some of the writer's Web pages. Fortunately, because of the way the outcome was worded, having non-CYS students accessing the writer's Web pages did not prove to be an obstacle for successfully meeting Outcome 8 because the

outcome had not specified that it had to be CYS students who accessed the writer's Web pages at least 100 times.

As mentioned earlier in this chapter in the discussion of collaboration with cluster coordinators and CYS faculty, the writer developed various pages linked to it in response to the recommendations of CYS personnel. (For a complete list of Web addresses for these pages, see Appendix E.) The writer created the search strategy Web tutorial at the request of the cluster coordinator for cluster 94. The tutorial was accessed 704 times between the time the writer published these pages to the Web in the spring of 1999 and August 1 of that year. She developed a PsycINFO version of the tutorial at the request of the CYS administrator in charge of the SPS specialization area. These pages were only accessed a total of 126 times during the same time period. Disappointingly, during the month of July when the 1999 summer institute was meeting, these nine pages were only accessed a total of 14 times.

Based on formative evaluation, the writer concluded that Morner's (1993, 1995) conclusion that doctoral students in education come from a wide range of backgrounds was correct. One student, for example, explained in Assignment 3,

> Since there are only a few of us that are not education people, I would like for you to go into other databases

that aren't strictly education based. Mental Health would be an example for me personally.

In response to the student needs, the writer developed step-by-step instructions on how to access and use online databases for students needing information about locating discipline-specific topics in education, psychology and the social sciences, technology, and medicine. As Lowther, Bassoppo-Moyo, and Morrison (1998) suggested, the writer used a step-by-step approach to Web instructions so that students could "focus on solving the problem rather than attempting to learn how to use the software by trial-and-error approach" (p. 106). As the authors suggested, the writer only provided this limited level of detail to avoid overwhelming beginners with too many distractions. Because these pages were designed to help students with special needs, the writer did not expect that they would be used extensively. Thus, the writer was not surprised when students only accessed the various discipline-specific pages a total of 65 times between the time they were created in the spring of 1999 and the beginning of August.

The writer developed Web pages on a variety of other pertinent topics. Perhaps the most useful of these Web pages was the one that defined peer-reviewed or refereed articles and helped students learn how to locate them. This page was particularly useful because CYS students were required to include at least some peer-reviewed articles in their

literature reviews. The writer later used this page as a hand-out for students at their practicum orientation library training, and another librarian used this page as a handout for doctoral students attending the 1999 Programs in Higher Education summer institute. The Web page on peer-reviewed journals was accessed 136 time in the first seven months of 1999.

As recommended in Dewald's (1999) article, the writer designed her Web tutorial using both graphics and text. The writer included a wealth of screen-captured graphics that depicted a step-by-step search process in two databases, ERIC and PsycINFO. The writer also designed the CYS practicum help pages to supplement in-class instruction. Students could use these pages for just-in-time help for completing Assignment 3 and for doing the literature review for their applied dissertations.

In the writer's summative evaluation of the design process that went into creating the Web pages, she concluded that the learning styles and technological skills of the CYS students had not lent themselves to using Web tutorials for stand-alone library instruction. As a result, the writer avoided using tutorials as "a substitute for a human connection in learning" (Dewald, 1999, p.31). Because many CYS students were not that comfortable with technology and because they preferred face-to-face interactions, the writer concluded that these students had been served best by being

provided with Web-based materials that had been developed to be used "in connection with academic classes rather than in isolation" (Dewald, 1999, p. 31).

The writer became increasingly convinced during her practicum implementation that NSU students needed to have their bibliographic instruction delivered in the same manner as their regular class instruction, whatever that method might be. As discussed already, the writer's experience with cluster 93's asynchronous training provided her with the strong conviction that CYS students should receive face-to-face library training. These students had enrolled in a face-to-face, cluster-based distance education program rather than a more virtual variety of distance program precisely because they preferred a delivery model that promoted human connection in learning rather than the isolation of virtual interaction. The writer's conclusions cannot be applied to all distance students for students enrolled in other types of distance classes may have other types of learning styles and needs and respond differently based on those styles and needs.

One-on-one help was another type of instructional interaction offered CYS students. The writer provided students with a variety of methods of interacting with the library both synchronously and asynchronously. These types of interactions provided students with opportunities for

virtual reference help or what Dewald (1999) termed "ongoing post-adoption support" (p. 27).

One-on-one help played an important and time-consuming part of the writer's practicum plan. The writer had planned that students would have a variety of opportunities for individualized synchronous and asynchronous help. After all, "good library instruction does not end with the class session, but includes the option of asking the librarian for help at any future time" (Dewald, 1999, p. 27). As planned, the writer successfully provided CYS students with this type of ongoing library support.

First of all, students could get synchronous help from librarians by telephone. There is no way to accurately quantify how many CYS students availed themselves of this particular service, but librarians at the Einstein Library reported that a number of CYS students had called with questions and UNIX account problems.

As planned, students were also able to email the writer and Reference Desk for asynchronous help. There was no way to track the number of CYS students who contacted the writer or Distance Library Services. This was due in part to the fact that NSU email accounts only indicated the center, not the program, of the student and in part to the fact that students were free to use email provided at work or by private Internet Service Providers (ISPs). However, librarian observations and student comments such as "Johanna

always responds to e-mail" indicated that some students were using this service.

The writer had hoped that students would use email to get virtual reference help. However, an analysis of the reported student usage during the practicum implementation indicted that CYS students rarely used email to ask serious research questions. When students did contact the writer or other librarians, it was usually because they were experiencing problems with their UNIX accounts or some kind of related technological problems.

Student comments at the 1999 summer institute confirmed that students were not contacting the library for help in most situations. A number of students reported experiencing problems correctly linking to Wilson Education Abstracts because they had overlooked one small step in the procedure. They related that, in spite of experiencing problems, they almost never thought to contact the Einstein Library's Reference Desk or the writer either by phone or email for help. The writer could only conclude that her efforts to publicize this service at both the program and practicum orientations had made little impression on the CYS students.

Students' work submitted for Assignment 3 provides support for the contention that CYS students did need reference help, particularly when they were starting their literature reviews. The work done for Assignment 3 documented that all but seven of the 75 students who

completed the assignment needed some type of help or guidance about additional resources from the writer. Appendix F includes a detailed list of the suggestions provided to CYS students in the five clusters that quantifies the number of students that did indeed need help in their research process. By inference, Appendix F indicates that most students needing help do not seek such help on their own. Assignment 3 was important because the assignment forced the CYS students to initiate contact with the writer that otherwise never would have taken place.

Providing one-on-one, in-depth reference help was time intensive for the writer. Responses averaged a half page each, and the writer usually spent at least 15 minutes per response to provide students with feedback and suggestions. At times, the writer had to research specific topics to identify possible synonyms, useful resources, and potential problems.

In spite of the fact that students had not proactively solicited library input for their research, they appreciated the input that the writer provided for Assignment 3. Comments included "WOW!! Thanks so so much Johanna. I really appreciate your response. I found it quite informative and very helpful!" and "Thank you Johanna. You are very encouraging to a novice computer user!! I hope you are our teacher all the way through!!"

The writer was disappointed that, in spite of the positive responses to the help, not one student comment on the Library Services survey singled out the virtual reference help as a service that students found particularly helpful.

Although not part of the practicum implementation, the writer was pleased to note that students did begin using this service more extensively after the 1999 summer institute. It showed that a better relationship was being forged between the library and the students. The writer could only conclude that establishing such a relationship took longer and more effort than she had originally anticipated.

In addition to the asynchronous help, the writer provided the CYS students with several opportunities for face-to-face, individualized help. When the writer went to the cluster sites, she was available to help students both before and after her training sessions. The writer worked with five individuals after training sessions in Greenville, Boston, and Alexandria. She used these sessions as an opportunity to give the students hands-on, supervised practice on her laptop. The writer concluded that providing this service was a particularly important service to offer at the distance sites. In spite of the fact that the writer was able to help these students become more comfortable with technology and library online resources, the assistance

usually was not sufficient to help truly technologically challenged students. This problem was illustrated by the fact that at least two of the students whom the writer individually helped at their cluster sites still required intensive help in the 1999 summer institute's open computer lab.

In the writer's summative evaluation, she concluded that one reason students did not often avail themselves of one-on-one help was because they were often not willing to acknowledge that they needed help or reach out for assistance. The writer saw this with one student in the Alexandria cluster. The student had angrily complained in the hallway before the practicum orientation library session of being "harassed" to do the library assignments. The writer concluded that the student was feeling defensive because she might be having trouble using the technology. As a result, the writer found an opportunity to offer to help this student during the lunch hour. The student did not avail herself of the offer and stayed away the entire hour. Not knowing if there might have been some other demand on the student's time during lunch, the writer quietly offered again to help the student during the break after the library training session. The student politely declined the writer's offer. Ironically, this student never completed any of the library assignments.

At the 1999 CYS summer institute, CYS students had two types of opportunities to get one-on-one help. An on-site Reference Help Desk was provided during the lunch hours between July 12 and July 16 and help on July 15 and 16 during the evenings in the open computer lab. The CYS administrators had expected the Reference Help Desk to be popular, but this was not the case. Unfortunately, only eight students stopped by the desk for help during the entire five-day period. Most of the students who did stop by were there for help with document delivery questions rather than for research or technology questions.

The most successful method of providing one-on-one help was in the open computer lab at the 1999 summer institute. Students were much more eager to get one-on-one help when they could sit down with someone in front of a computer. The writer had originally planned to only be in the open lab from 7:00 to 9:00 P.M. on Thursday and Friday eveingings. However, the writer expanded this plan after her experience in the open computer lab on Wednesday. The writer had delivered two optional hands-on training sessions that day between 8:30 and 12:00. She was then supposed to spend the next hour at the Reference Help Desk located in an open lobby area in another part of the hotel. The writer was delayed, however, in following this schedule because more than 20 students in the lab delayed her with a whole assortment of research questions. When there was a lull, the

writer slipped out of the computer lab to get to the Reference Help Desk. When she got to the Reference Help Desk, the contrast between the two locations was stark. Only one student came to the Reference Help Desk that day, and that student simply wanted to drop off a request form and return a library book. Not surprisingly, the writer quickly concluded that the library services in the computer lab were the ones that needed to be expanded.

The decision to increase library services in the open computer lab proved very popular. The writer expanded her hours in the lab from two to four ½. She estimated that she helped students over 100 times in the lab during those two evenings.

The writer became convinced that one very important factor in the success of the one-on-one help was the fact that CYS students in clusters 93, 94, 95, 96, and 97 were already familiar with the writer and, therefore, more comfortable about asking her for help. A positive synergy in the computer lab developed that encouraged other students to also ask questions. Students from second-year clusters would hear the writer helping first-year students and would ask questions of their own.

To quantify the difference between student usage patterns for one-on-one help offered at the on-site Reference Help Desk and in the open computer lab, the writer arranged to offer one-on-one help in the computer lab over

the lunch hour on July 16 while a library staff person was available at the Reference Help Desk. Only one student with a document delivery question stopped by the Reference Help Desk. In contrast, the writer helped 10 students in the computer lab. More important than just the number of students, the type of questions being asked in the lab were more serious research questions. In contrast, the one student at the Reference Help Desk had a document delivery question that was easily handled. The contrast between the usage patterns of the two types of one-on-one help becomes even more startling when one considers the fact that the Reference Help Desk service had been announced at the opening event for the summer institute and was advertised in the week's calendar of events while there had been no publicity of any kind for the library help being offered in the computer lab.

On a different note, the application of various methodologies to improve learning was successful. Active learning proved to be an effective method of involving students in situations in which the writer could only provide demonstrations instead of hands-on training. As planned, student volunteers would demonstrate doing computer search at the program orientations training sessions. At the practicum orientations, students worked collaboratively in small groups to develop search strategies on the topic of family structure and would demonstrate the results for the

whole class. Student evaluations for both the Program and practicum orientations indicated that the active learning activities were successful. Comments included: "Actually going through the process, BEST part of today!," "Using computers with 'expert's' help," and "Use of live examples". One student who actually demonstrated one of the searches wrote, "My hands-on experience was non-threatening, and I'll feel comfortable in 'calling you up' and asking for help!".

An important part of developing a model for library training was considering the capacities and qualities of the individual learners. The writer concluded in her summative evaluation that providing instructional materials in multiple modalities had helped meet the needs of students with different learning styles. One student commented,

> I do not learn well in a lecture type of environment. I know you are thinking 'how did he get into the Ed.D. program?' I think the same thing. The hands-on sessions at Summer Institute will be better suited to my learning style.

Another student said, "I find the packets helpful as well as I am the type of learner who has to have very sequential directions in front of me". Still another student liked the live demonstrations and noted, "I am a visual person -- this was very helpful for me". There were also alternatives for students who wanted individual help. One student wrote, "Honestly, I feel very intimidated when computer skills are

taught in whole group style. I was so nervous during the training, that I didn't take in all that I need to".

On a different note, the writer concluded that having one person doing most of the training at the sites and in the hands-on sessions at summer institute was a useful strategy that she had not deliberately devised. In years past, the responsibility for doing the various sessions had been shared rather equally among the librarians. However, this was not the case during the 1998/1999 academic year. Although the writer was not able to do every single session, she did as many as possible personally for her practicum.

Students definitely preferred interacting with someone they were already familiar with. As already discussed, the personal connection and rapport established between students and the writer was an important factor in the success of the one-on-one training in the open computer lab. Students were able to relate to the writer on a personal level, and they seemed more comfortable bringing up questions and discussing their research needs.

Personal experience at the 1999 summer institute provided the writer with abundant anecdotal evidence that having one librarian do most of the interactions with the CYS clusters was effective. At past summer institutes in FGSE&HS, the writer had not routinely been recognized and stopped by students. This changed significantly, however, at the 1999 CYS summer institute. Students from the new

clusters recognized and spoke with the writer in the hallways, in the computer lab, at the Einstein Library, and even in the hotel restaurant. One student said, "Oh, you're that computer lady" while other students actually remembered the writer's name.

Many of the students stopped the writer with questions ranging from how to request journal articles from Distance Library Services to how to structure their search strategies. Others just wanted to share their experiences. For example, one student from cluster 95 stopped the writer to explain that he had not "gotten it" in spite of the fact that the writer had come to Boston twice to do training. He was pleased to share that this had changed as a result of the hands-on session at the 1999 summer institute.

Performance-based library assignments proved to be a very effective strategy for getting students to actually utilize online research skills. Assignments 1 and 2 were simple tasks, but they ensured that students could access the online databases and understood how to locate specific types of materials. The first two assignments were also important as the first steps in the developmental and sequential process. Assignment 3 built on these basic skills to teach students more complex research skills.

The only drawback to the library assignments was the fact that students not completing the assignment suffered no meaningful consequences. Students would have been more

likely to complete the assignments if their grades had been penalized for non-completion or if they had been blocked from continuing in the practicum process until they completed the library assignments. The writer's conclusion was in direct contrast to those of Knowles (1984) who had concluded that adults were motivated intrinsically rather than motivated by external inducements such as grades.

Unanticipated successes. In the process of implementing her practicum, the writer had some unanticipated successes. The practicum generated a positive synergy between the CYS administration and the library that went beyond the planned scope of the writer's practicum proposal. The writer provided 21 practicum advisors with hands-on training at both the 1998 and 1999 summer institutes, a strategy advised by Bailey (1985), Zaporozhetz (1987), and Fabiano (1996). The results of SPS (Special Services/Exceptional Education) training was another unanticipated outcome. The writer had done training sessions for CYS students in this specialization area in years past, but the writer had not planned for this activity in her practicum proposal because the coordinator had been on leave during the planning period.

Achieving underlying objectives. Based on her quantitative and qualitative summative analysis, the writer concluded that, overall, integrating library instruction into the curriculum was a successful strategy. The library

collaboration with CYS ensured that students in those distance clusters had access to the same high level of bibliographic instruction as was available to students in local CYS clusters. To put it another way, integrating library instruction into the curriculum for distance students ensured that students both on and off campus had equivalent opportunities to learn how to do online research. This approach had the added benefits of (1) promoting the mission of NSU to develop lifelong learners and (2) meeting the accreditation criteria set by the Southern Association of Colleges and Schools (SACS) for bibliographic instruction provided to distance students by promoting information literacy.

Leadership role. The writer took a leadership role in the design and implementation of her practicum. Perhaps the most important role she took was in designing a program that met the needs of the stakeholders. The writer's program addressed the SACS recommendation (Southern Association of Colleges and Schools, 1997) that students be provided with information technology skills as well as promoting NSU's goal to support learning life-long research skills. In doing so, she met the needs of the Child and Youth Studies Program, the Einstein Library, and Nova Southeastern University as a whole.

Throughout the practicum implementation, the writer worked to build bridges between CYS and the Einstein

Library. Her style was to build consensus and promote collaboration. As planned, the writer accomplished this by working constructively within the system.

Recommendations

Although the model used during the 1998/1999 academic year was quite successful in meeting its overall objectives, the writer would like to recommend several changes to her model for the library training during the 1999/2000 academic year:

(1) Librarians should only provide one site visit for each new cluster (unless CYS is willing to pay the library's travel expenses for the second visit). The Einstein Library budget will continue to pay for one training trip per cluster. Although the writer found providing two sessions an effective developmental and sequential strategy, providing the initial training session during the first weekend of class is costly. Offering the training so early is also a problem because students are already experiencing information overload and because many do not yet see the relevance of the library training for their own research needs.

(2) To continue providing library instruction that builds developmentally and sequentially, the writer recommends the following changes be made to the training and assignments offered. In the first four months, CYS should (a) show the new Distance Library Services video that was

prepared specifically for education programs at NSU, (b) provide students with the Introduction to Distance Library Services and the Electronic Library booklet, and (c) require that the first two performance-based library assignments to be completed before students attend the practicum orientation. In the second four months, a librarian from the Einstein Library should continue to (a) provide face-to-face training session at the practicum orientation and (b) follow up with Assignment Three.

(3) The first two library assignments need to be mandated and coupled with some kind of meaningful consequences if the assignments are not completed. One solution might be to integrate the assignments into the study areas. This would be particularly appropriate for the first two library assignments that could tie into the content of the study area and could be easily tracked by either the cluster coordinators or the study area professor. A second possibility would be for CYS to block student advancement to the next step in the practicum process if the if library assignments have not been completed. CYS students have demonstrated that many of them are not self-motivated to complete the assignments without some form of outside inducement so it is essential to ensure that students complete the first two library assignments. Mandating the completion of the assignments is important because it provides a performance-based method of ensuring that

students have acquired the necessary basic skills required to be able to handle the more advanced training at the practicum orientation.

(3) CYS needs to ensure that students admitted into the program actually possess the mandated prerequisite levels of computer competency or offer "technology challenged" students with the opportunity to obtain remedial computer training.

(4) Students should receive hands-on training. Although providing this kind of resource is difficult, it is not an insurmountable obstacle. Other NSU programs including Educational Leaders and the Masters of Business Administration have offered hands-on computer training at distance sites in the past. As student comments on surveys in Assignment 3 have documented, CYS students vastly prefer hands-on training. Providing the library training hands on would also have the added advantage of addressing the SACS recommendation that NSU provide "adequate and appropriate [emphasis added] access to information technologies ... and training for their use at all locations [emphasis added] where educational programs are being provided" (Southern Association of Colleges and Schools, 1997, p. 183).

With some creative scheduling, CYS might be able to combine library training with Tech I. Providing hands-on training would also address criticism like this comment made by a student in cluster 93: "We were told [at the] beginning

of program that this was technology rich, but have yet to utilize much/any technology".

(5) CYS needs to ensure that students accepted conditionally into the program receive their UNIX accounts within one week of the time that they are fully accepted into the program. (The one-week time period was mandated by NSU policy implemented in the spring of 1999.) Rectifying the problem of providing UNIX accounts in a timely manner is important for two reasons: First, students are paying tuition and are entitled to access online library resources for their class work and research. Secondly, the SACS standards mandates that distance students are entitled to "adequate and appropriate access to information technologies and systems" (Southern Association of Colleges and Schools, 1997, p. 183) in one of their recommendations.

Dissemination

The writer has taken a leadership role in promoting her model to other programs at NSU and professionally via professional presentations. Educational Leaders, another program in the Fischler Graduate School of Education and Human Services, has already adopted some of the elements in the writer's model and has expressed interest in adopting additional aspects of the writer's model in the future. Before the writer started implementation of her practicum, Educational Leaders had only provided their students with "one-shot" training at their summer institute. They have

begun, however, to provide library training to students at the orientation sessions at new clusters. The program director explained that Educational Leaders was in the process of revising their program and hopes to integrate library training more comprehensively into the curriculum. He discussed integrating bibliographic instruction into a field study. (A field study is the point at which students in Educational Leaders investigate the area that they are interested in for their dissertations.)

The Graduate Teachers Education Program (GTEP) has already started using the Library Help Page for CYS Lit Review (see Appendix E) in some of their research classes. GTEP is also using this page for their new online program that has recently started.

The writer plans to make arrangements for a follow-up study using confirmation evaluation. She plans to do citation analysis of bibliographies from literature reviews of CYS students in clusters 93, 94, 95, 96, and 97. The writer has already contacted the CYS Director of Applied Research about obtaining permission to use these bibliographies.

Conclusions

The writer's practicum successfully integrated library instruction into the curriculum for students in a distance doctoral program. She effectively collaborated with Child and Youth Studies to accomplish this in a development and

sequential manner. The writer used multiple modalities to provide CYS students with a wide variety of synchronous and asynchronous methods for getting instruction that met the students' varying learning styles. The writer was able to substantiate her conclusions with extensive qualitative and quantitative data that documented that the CYS students actually were (1) more confident about their ability to access online resources and (2) more comfortable about using these resources for their doctoral research. Thus, by accomplishing these personal goals, the writer was able to contribute to ITDE's (Instructional Technology and Distance Education) goal of integrating technology into the instructional process for distance students.

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APPENDIX A

ORIGINAL VERSION OF DISTANCE LIBRARY SERVICES EVALUATION FORM

Distance Library Services Evaluation

Please take a few minutes to fill out the following evaluation of this training class. Your responses are important to us. We will use the results of this survey to improve the structure, content, and delivery of future training sessions and presentations.

Training Class : **Date:**

Program: **Instructor:**

Location:

		Excellent				Poor	
1.	The class materials and information were well organized.	5	4	3	2	1	N/A
2.	The instructor made the subject understandable.	5	4	3	2	1	N/A
3.	The instructor was prepared for the session.	5	4	3	2	1	N/A
4.	The instructor was student-oriented.	5	4	3	2	1	N/A
5.	The instructor answered "real world" questions.	5	4	3	2	1	N/A
6.	The information was relevant to your academic studies.	5	4	3	2	1	N/A
7.	Would you recommend that the next cluster or class also receive this training?	_____ Yes				_____ No	

Comments and suggestions for the instructor:

Comments and suggestions about the instructional materials and content:

APPENDIX B

COMPILATION OF RESULTS OF USER SATISFACTION SURVEYS USED AT PROGRAM ORIENTATIONS, PROGRAM ORIENTATIONS, AND HANDS-ON SESSIONS AT THE 1999 CYS SUMMER INSTITUTE

Library Training Evaluation

Please take a few minutes to fill out this evaluation of the training class. **Your responses are important to us.** The Einstein Library will use the results of this survey to improve the structure, content, and delivery of future training sessions and presentations.

Training Class:
Presentation Type: **Location:** **Instructor:**
Date: **Program:** *Child and Youth Studies*

	Disagree -- Agree					
1. The information was presented in a clear and logical manner.	1	2	3	4	5	N/A
Program Orientation						***Average = 4.6***
Practicum Orientation						***Average = 4.7***
Hands-on Sessions at the 1999 Summer Inst.						***Average = 4.9***
2. The instructor made the subject understandable.	1	2	3	4	5	N/A
Program Orientations:						***Average = 4.5***
Practicum Orientations:						***Average = 4.7***
Hands-on Sessions at the 1999 Summer Inst.:						***Average = 4.9***
3. The instructor was prepared for the session.	1	2	3	4	5	N/A
Program Orientations:						***Average = 4.4***
Practicum Orientations:						***Average = 4.9***
Hands-on Sessions at the 1999 Summer Inst.:						***Average = 4.9***
4. The technical resources were adequate for the training session.	1	2	3	4	5	N/A
Program Orientations:						***Average = 4.3***
Practicum Orientations:						***Average = 4.5***
Hands-on Sessions at the 1999 Summer Inst.:						***Average = 4.9***
5. The examples shown in the presentation clarified the instruction.	1	2	3	4	5	N/A
Program Orientations:						***Average = 4.4***
Practicum Orientations:						***Average = 4.5***
Hands-on Sessions at the 1999 Summer Inst.:						***Average = 4.9***
6. The handouts were helpful.	1	2	3	4	5	N/A
Program Orientations:						***Average = 4.6***
Practicum Orientations:						***Average = 4.7***

Hands-on Sessions at the 1999 Summer Inst.: Average = 4.9

7. As a result of the library training, I now feel more comfortable using online resources than I did before. 1 2 3 4 5 N/A

Program Orientations: Average = 4.0

Practicum Orientations: Average = 4.2

Hands-on Sessions at the 1999 Summer Inst.: Average = 4.7

8. I think I will now be able to locate full-text articles. 1 2 3 4 5 N/A

Program Orientations: Average = 4.1

Practicum Orientations: Average = 4.3

Hands-on Sessions at the 1999 Summer Inst.: Average = 4.8

9 My training today was:
A) Hands on B) Live demonstration C) "Canned" demonstration D) NetMeeting

Program Orientations:

This question was not asked the Greenville, Boston, national CYS clusters. In the Alexandria and Ft. Lauderdale clusters, 16 selected Hands on, 11 selected Hands on and Live demonstration, and 21 selected only Live demonstration, and one selected "Canned" demonstration.

Practicum Orientations:

Thirty-six students said they had hands-on training, 51 selected live demonstration, five selected canned. (Several selected more than one option while five did not select anything.)

Hands-on Sessions at the 1999 Summer Inst.:

A total of 71 students said they had hands-on training while 19 said that selected live demonstration.

10. I would recommend that the next cluster or class also receive this training. _____ Yes _____ No

Program Orientations:

99% of students recommend that the next cluster also receive this training.

Practicum Orientations:

100% said yes.

Hands-on Sessions at the 1999 Summer Inst.:

100% said yes.

11 I would recommend that library/information technology training be provided:
A) earlier in my program. B) later in my program.
C) N/A (not applicable)

Program Orientations:

40% wanted the training earlier in the program, .5% wanted the training later in the program, and 55% selected N/A.

Practicum Orientations:

Thirty-five chose A, three selected B, and 40 said N/A (C). One choose two or more options while the rest choose nothing.

Hands-on Sessions at the 1999 Summer Inst.:

A total of 38 chose A (earlier), six selected B, and 22 said N/A (C).

12 If you would have preferred receiving library instruction in a different way, which method would you prefer? A)N/A B) Hands-on training C) Live demo via Internet D) Self-paced training via Internet

Program Orientations:

47% selected N/A, 26% wanted hands-on, and 19% wanted self-paced tutorials. The rest either selected more than one option or left this blank.

Practicum Orientations:

Twenty-eight students said N/A, 32 wanted hands-on, four selected live demo via Internet, and nine wanted self-paced training via Internet. (Several chose more than one option while several others left the answer blank.)

Hands-on Sessions at the 1999 Summer Inst.:

A total of 38 chose A (earlier), six selected B, and 22 said N/A (C).

13. What was the most helpful part of the instruction? (Use the back if you need more room for comments.)

Contact the writer for a complete list of comments for the surveys.

14. What was the most confusing or least helpful part of the instruction? (Use the back if you need more room for comments.)

Contact the writer for a complete list of comments for the surveys.

APPENDIX C

COMPILATION OF FINAL LIBRARY SERVICES SURVEY RESULTS

Library Services:

Purpose of This Survey: As part of a continuous process of evaluation of student services, the purpose of this survey is to determine your general level of satisfaction with your experiences with the Einstein Library training and services. Results will be used to help the University provide an improved educational experience for future students.

Survey Methodology: This survey is to be distributed to CYS students during the 1999 Summer Institute.
Instructions: Please review the following rating scale and then mark or circle your reaction to each statement:

Rating Scale: **Cluster:**_____

1	Very Dissatisfied
2	Dissatisfied
3	Neutral, Neither Agree nor Disagree
4	Satisfied
5	Very Satisfied
NA	Not Applicable
U	Unknown or Unable to Answer

1 2 3 4 5 NA U Orientation program relative to library services
Average in clusters 93, 94, 95, 96, and 97 = 3.9
Average in clusters 87, 88, 89, 90, 91, and 92 = 3.8

1 2 3 4 5 NA U Training in access to information in electronic and other formats
Average in clusters 93, 94, 95, 96, and 97 = 4.0
Average in clusters 87, 88, 89, 90, 91, and 92 = 3.7

1 2 3 4 5 NA U Access to information through technology
Average in cluster 93, 94, 95, 96, and 97 = 4.1
Average in cluster 87, 88, 89, 90, 91, and 92 = 4.2

1 2 3 4 5 NA U Infusion of information technology into the curricula
Average in cluster 93, 94, 95, 96, and 97 = 4.1
Average in clusters 87, 88, 89, 90, 91, and 92 = 3.7

Comments: **Contact the writer for a complete list of comments.**

APPENDIX D

LIST OF WEB HELP PAGES INITIALLY DEVELOPED BY THE WRITER

Following is a list of the basic and remedial Web pages that the writer developed in the fall of 1998. The statistics reflect usage between November 1, 1998, and June 1, 1999.

Web Address	Usage (Total)	Usage (July '99)
http://www.nova.edu/library/helpdocs/books.htm	40	8
http://www.nova.edu/library/helpdocs/cite.htm	872	165
http://www.nova.edu/library/helpdocs/diff.htm	186	29
http://www.nova.edu/library/helpdocs/diss.htm	140	15
http://www.nova.edu/library/helpdocs/docdel.htm	9	2
http://www.nova.edu/library/helpdocs/edareas.htm	171	29
http://www.nova.edu/library/helpdocs/edref.htm	70	8
http://www.nova.edu/library/helpdocs/encyc.htm	206	24
http://www.nova.edu/library/helpdocs/eric.htm	47	9
http://www.nova.edu/library/helpdocs/evalweb.htm	601	125
http://www.nova.edu/library/helpdocs/glossary.htm	153	29
http://www.nova.edu/library/helpdocs/ill.htm	61	11
http://www.nova.edu/library/helpdocs/info.htm	317	73
http://www.nova.edu/library/helpdocs/locate.htm	110	17
http://www.nova.edu/library/helpdocs/marps.htm	113	20
http://www.nova.edu/library/helpdocs/per_ed.htm	73	10
http://www.nova.edu/library/helpdocs/psych.htm	264	38
http://www.nova.edu/library/helpdocs/pubcycle.htm	73	9
http://www.nova.edu/library/helpdocs/reference.htm	43	7
http://www.nova.edu/library/helpdocs/scholar.htm	98	15
http://www.nova.edu/library/helpdocs/select_d.htm	501	106
http://www.nova.edu/library/helpdocs/site.htm	6	0
http://www.nova.edu/library/helpdocs/strategy.htm	654	132
http://www.nova.edu/library/helpdocs/subjkey.htm	522	122
Totals	**5,330**	**1,003**

* This is a list of Web pages that the writer developed. It should be noted that since the completion of the practicum, other librarians in the Einstein Library have taken over responsibility for maintaining and changing these pages.

APPENDIX E

SEARCHING STRATEGIES WEB PAGES AND OTHER HELP PAGES

The following Web pages were developed in the spring of 1999 to provide cluster students with follow-up, just-in-time help in doing their literature reviews. The usage statistics reflect the usage between January 1, 1999, and June 1, 1999.

Web addresses	Usage (Total)	Usage (July 1999)
Index page: http://www.nova.edu/library/cysprac/	539	143
http://www.nova.edu/library/cysprac/audiolog.htm	14	0
http://www.nova.edu/library/cysprac/boolean.htm	56	14
http://www.nova.edu/library/cysprac/combine.htm	49	11
http://www.nova.edu/library/cysprac/descript.htm	75	19
http://www.nova.edu/library/cysprac/disser.htm	67	25
http://www.nova.edu/library/cysprac/doctype.htm	48	14
http://www.nova.edu/library/cysprac/ed_tech.htm	15	4
http://www.nova.edu/library/cysprac/edref.htm	50	13
http://www.nova.edu/library/cysprac/ERIC.htm	88	20
http://www.nova.edu/library/cysprac/ERIC_bas.thm	156	60
http://www.nova.edu/library/cysprac/evaluate.htm	50	13
http://www.nova.edu/library/cysprac/ft_ed.htm	36	8
http://www.nova.edu/library/cysprac/keyword.htm	109	28
http://www.nova.edu/library/cysprac/lesn_pln.htm	56	22
http://www.nova.edu/library/cysprac/lib_media.htm	9	0
http://www.nova.edu/library/cysprac/loc_book.htm	85	17
http://www.nova.edu/library/cysprac/locl_lib.htm	17	2
http://www.nova.edu/library/cysprac/peer.htm	136	72
http://www.nova.edu/library/cysprac/plus.htm	54	16
http://www.nova.edu/library/cysprac/primary.htm	49	16
http://www.nova.edu/library/cysprac/proxim.htm	83	19
http://www.nova.edu/library/cysprac/socsc.htm	18	5
http://www.nova.edu/library/cysprac/speechlng.htm	17	1
http://www.nova.edu/library/cysprac/strategy.htm	188	40
http://www.nova.edu/library/cysprac/years.htm	53	13
Subtotal	**2,117**	**595**

Pages Added Later Based on CYS Faculty Input

PsycINFO Tutorial:		
http://www.nova.edu/library/cysprac/bool_p.html	7	0
http://www.nova.edu/library/cysprac/comb_p.html	12	1
http://www.nova.edu/library/cysprac/desc_p.html	11	0
http://www.nova.edu/library/cysprac/eval_p.html	8	0
http://www.nova.edu/library/cysprac/keyw_p.html	22	7

APPENDIX H

POWERPOINT SLIDE HANDOUTS FOR PRACTICUM ORIENTATION

Practicum Orientation Agenda:

1. Search strategies to focus an ERIC search
   - Proximity searching
   - Keyword versus controlled vocabulary
   - Field searching
   - Combining concepts
2. Databases
   - Databases with primary resources
   - Other useful databases
3. Library assignment

M

Developing a Search Strategy:

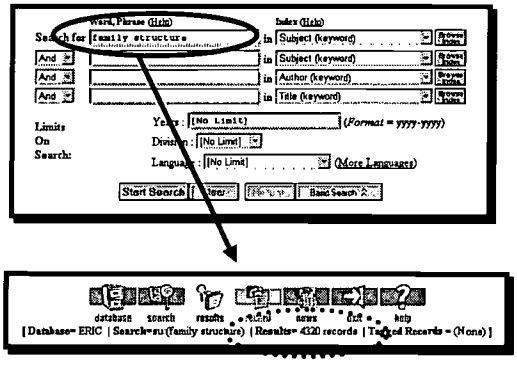
First decide on a topic.

For example:

I want to find information about family structure.

Identify your key term or terms.

Basic keyword search



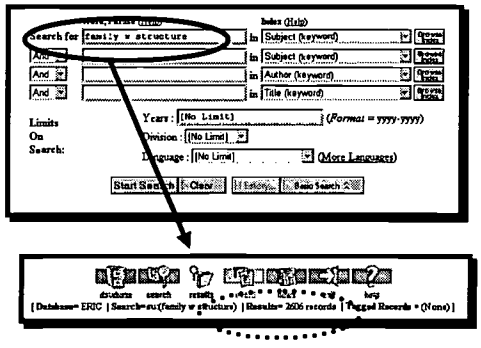
Proximity searching in FirstSearch databases:

family w structure

learning w styles

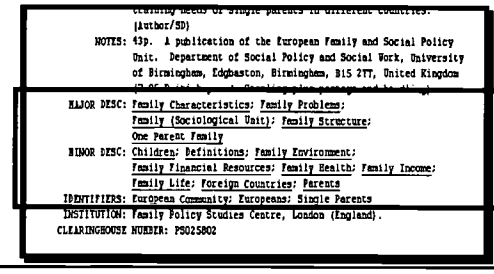
nuclear w family

Using proximity searching



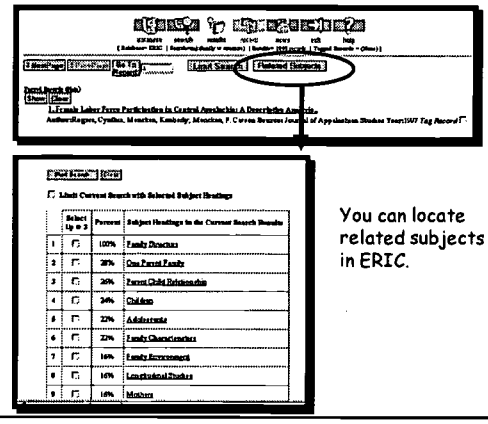
Keyword searching vs. field searching:

The abstract has fields and index terms that you can use for more effective searching.



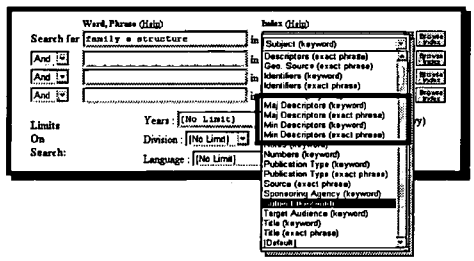
Keywords versus Controlled Vocabulary
Subject Headings
Index Terms
ERIC Descriptors

Inclusion	⟺	Mainstreaming
Third w grade	⟺	Grade 3
ESOL	⟺	English (second language)

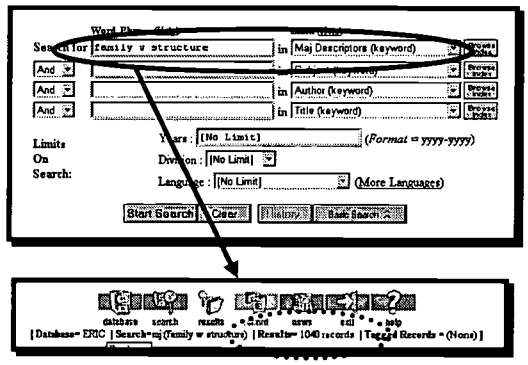


You can locate related subjects in ERIC.

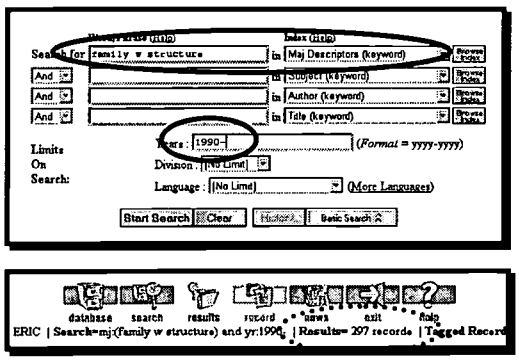
Refining your search using -- field searching



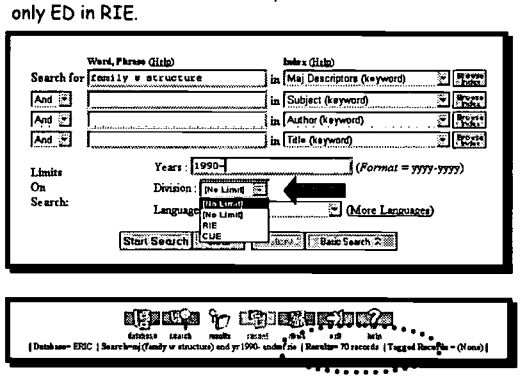
Searching using the descriptor field



You can limit your search by years



You can limit the search to only EJ abstracts in CIJE or only ED in RIE.



Select Database

Enter Search Term

Too few? Too many?

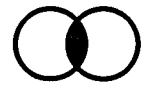
What you want?

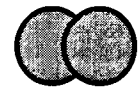
Once you have done a simple search...

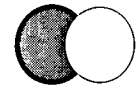
You have to narrow or broaden your search and evaluate the results.

Boolean operators:

And
And
Or
Not

and  Narrowing a search

or  Broadening a search

not  Eliminating a category or group

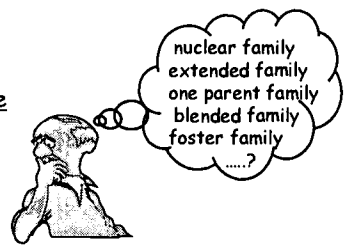
Think of synonyms:

Concept

family structure

or

??????



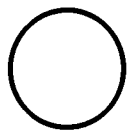
Combining Concepts:

I am looking for research or case studies about the impact of environment or family influence on the structure of families.

Concept and family structure or

Concept and or

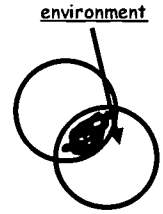
Concept or

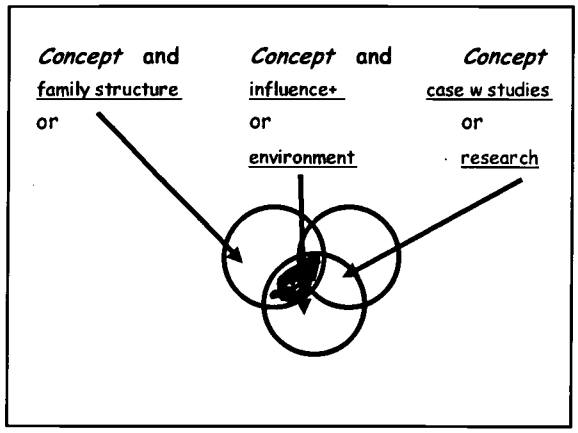


Concept and family structure or

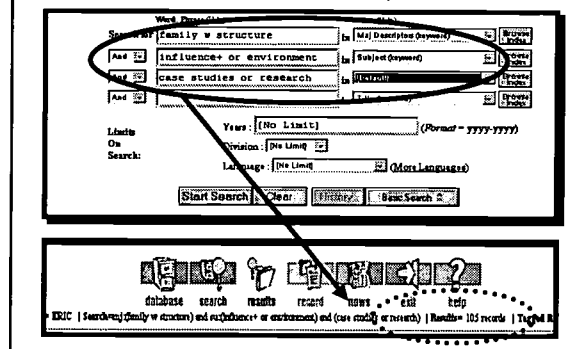
Concept and influence+ or environment

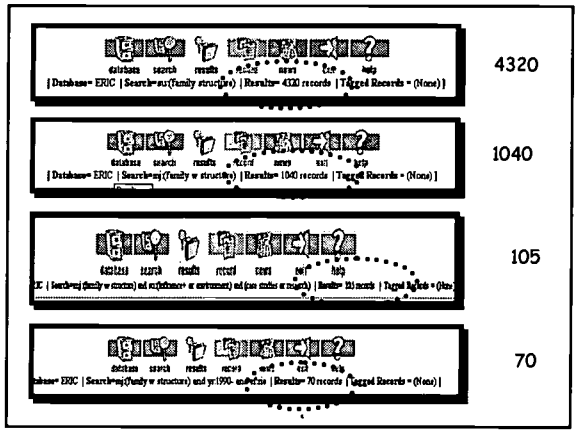
Concept or





You can combine several terms, but you can only use a maximum of two ORs in your search.





Databases for Locating Primary Research

- Digital Dissertations
- ERIC -- NSU practicums in ERIC's ED collection
- NSU's MARPS, Practicums, and Applied Dissertations Database
- WorldCat

Other Useful Databases for Education Students

- Health and Psychosocial Instruments (HAPI) Online in Ovid
- PsycINFO Online in FirstSearch Basis
- Social Science Index in FirstSearch Plus
- Sociological Abstracts in FirstSearch Plus
- Mental Health Collection in Ovid
- JSTOR Online

Whether you have questions about how to zero in on the precise information you need or about which databases to search, you can always call the Reference Desk in the Einstein Library.

(800) 541-6682 X4613

library@nsu.nova.edu

http://www.nova.edu/library/cysprac/plus_p.html	19	0
http://www.nova.edu/library/cysprac/prox_p.html	13	1
http://www.nova.edu/library/cysprac/strat_p.html	27	5
http://www.nova.edu/library/cysprac/years_p.html	7	0
Subtotal	**126**	**14**
Total	**2,243**	**609**

APPENDIX F

COMPILATION OF STUDENTS' COMMENTS AND THE WRITER'S RESPONSES TO ASSIGNMENT 3

Assignment 3 read as follows:

- A paragraph describing your search strategies in four appropriate databases. You will need to select a search topic that you are interested in exploring, develop a search strategy, and identify four appropriate databases for your topic. After conducting your search in the four selected databases, send me an email with a paragraph describing your search strategy, any variations that you had to make to make in your strategy in the four databases, and a report of your search results in each database. If you have any questions or concerns about your search strategy, please let me know about them in your email.
- In a second paragraph, explain whether you found the library training and activities helpful and why or why not. Also indicate any specific skills or databases you would like included or reviewed in the hands-on library training session at the CYS summer institute.
- In the subject line of the email message, type **CYS** and your cluster number. Include your name, cluster number, and location of your cluster in the body of the email message.

For a compilation of student recommendations and suggestions,please contact the writer.

The following comments were made by the writer to questions raised by students and responded to by the writer in Assignment 3:

National CYS Cluster 93

- The writer explained what computer "cookies" are that the student had encountered while trying to use JSTOR.
- The writer explained why the + sign does not work for singular and plural in non-FirstSearch databases. Suggested the use of Health Reference Desk for additional health-related full-text articles and pamphlets.
- The writer explained where in the Electronic Library the student could locate book catalogs from other universities like Oxford. Also recommended that she consider trying WorldCat for access to the holdings of 15,000 libraries that participate in interlibrary loan.
- The writer explained the steps for off-campus students to access the HAPI database and other Ovid products.
- The student asked for help with descriptors for searching on the topic of incarceration of people of color. The writer located a number of ERIC and PsycINFO descriptors. She suggested that the student try using

PsycINFO, Sociological Abstracts, and Social Science Index as well as ERIC.

- The student had searched ERIC and AltaVista for her search topic. The writer explained that AltaVista was a search engine rather than a database. The student was searching for information on African American males and criminal justice so the writer suggested several ERIC descriptors. She also suggested that the student try PsycINFO, Sociological Abstracts, and Social Sciences Index.
- A student asked for help with locating information about emailing surveys to parents of preschoolers. The writer suggested that email might be spelled with or without a hyphen. She also explained that different databases might not recognize the hyphen. She went on to suggest that the student broaden her search and try Computer Database in InfoTrac.
- The writer explained how FirstSearch uses the term "Subject" to actually refer to keywords. She also explained how to access the online request forms and send requests by email.
- The writer explained that the assignment was to use online databases that indexed articles and books that were published. The student had used only one database, ProQuest, and three search engines: AltaVista, Netscape, and Yahoo. The writer recommended using the search engines should be limited to supplemental materials rather than the primary source. It should be noted that the student later replied and thanked the writer for explaining this and pointing her in a different direction for her literature review.
- In the first message, the writer helped a student who was having problems with her UNIX account password. In a second message, the writer explained that the student had not described the precise search strategy that resulted in 909 records. She explained that the student should analyze why the first 100 records did not have the content she was looking for. She could use this information to identify a second search term or terms and use these to narrow her search more precisely.
- The writer explained that ERIC was slow to update descriptors so that "African American males" was not an ERIC descriptor. Instead, the student should use "Blacks" or "Black Students."
- The writer explained that the student would probably not find Arts and Humanities a useful database for locating articles on either of his topics, cultural competency or turnover in child welfare administration.
- The writer could not recommend search strategies since the student had not provided detailed information about

her results, but the writer did suggest one additional database, PsycINFO.

- The writer recommended that the student think about using ERIC descriptors instead of the phrase instead of "youth of color." She also suggested checking Index of Legal Periodicals and LegalTrac for articles that information of incarceration statistics.
- The writer suggested that the student try using school discipline in addition to school fights. She recommended trying NovaCat, Digital Dissertations, and the NSU MARPs, Practicums, and Applied Dissertations databases.
- The writer suggested that the student search for the topic of self esteem in the ERIC descriptor field rather than as a keyword. She suggested combining this with the school level desired.

Greenville Cluster 94

- The writer answered a general question about whether it was OK for students to locate a print source online. The practicum instructor had argued that students should not be using a lot of online resources. There was a confusion between Web-based materials that were not published and materials located or accessed on the Web but made available through traditional avenues.
- The student had requested a full-text article from the writer. The writer emailed her the article but explained how she could have located it for herself online.
- The student had misunderstood how to use the Boolean OR command. The writer explained how OR is used and provided several examples.
- The student had commented that he had needed to use education as a search term in some of the general full-text databases. The writer explained why this had been necessary.
- The student had included NovaCat as one of his databases. He had tried to search this book catalog using the same techniques as she would in a journal index. The writer explained about the differences between the two databases and why he would have to use broader terms to locate books that might only have sections or chapters on her specific topic.
- The student had located an article she wanted but said the cost was $26. She did not realize that she could request the document through Distance Library Services so the writer explained the process to her.
- The writer explained how the student could request books using the print request forms in Introduction to Distance Library Services and the Electronic Library,

use the online book request form, or email Distance Library Services with the request. She did alert the student that the student would have to pay the postage to return the books to the appropriate lending library.

- The writer provided one student with advise about why she might be having trouble with her UNIX account and who to contact to get it fixed.
- The writer suggested that the student should try ERIC and Wilson Education Abstracts for abstracts on Y2K. She also suggested using "Year 2000 Date Change" as an index term in Wilson.
- The writer explained how to access the Ovid Mental Health database and why the student had experienced problems accessing Wilson Education Abstracts.
- The writer complemented the student on his effective strategy. She did explain that since Distance Library Services provides two free dissertations per student and since he could also obtain many dissertations free through interlibrary loan at his local library, it was not necessary for the student to limit his search to only NSU's and local institutions' dissertations.
- The writer was pleased that the student had tried two new databases, EDRS, and Test Locator. She recommended that he also consider trying NovaCat, Digital Dissertations, PsycINFO, and NSU's MARPs, Practicums, and Applied Dissertations. She recommended trying other terms like dispute resolution, arbitration, and mediation in addition to conflict resolution. She also reminded him about being able to use the proximity searching feature in PsycINFO and provided him with examples of how to use it.
- The student had not provided specifics about her search on "career education" so the writer described how she might want to narrow and focus the results of over 11,000 abstracts in ERIC. The writer also told the student when the writer or someone else from the library would be available to provide one-on-one help at Summer Institute.
- The writer suggested searching Digital Dissertations and PsycINFO rather than ArticleFirst and PapersFirst. She explained why ArticleFirst and PapersFirst were not the best databases for his topic of outcome measures that related to children's homes and children's programs.

Boston Cluster 95

- The writer recommended that the student use descriptors for more precise searching. She explained that narrowing a search by adding terms might arbitrarily eliminate records. She recommended that the student

might want to keep the search a little broader and manually evaluate the records for relevancy and focus.

- The writer explained that the student had searched several databases provided by the same vendor, but this did not mean that all three databases used the same descriptors.
- The writer explained how to successfully access Wilson Education Abstracts.
- The writer explained why the student might want to broaden her search when she was only locating 16 records in ERIC on the topic of scaffolding and reading and elementary education.
- The writer made several suggestions about how to narrow her search and to indicate that there would be one-on-one help in the computer lab at summer institute on Thursday and Friday nights as well as at the Help Desk during the lunch hours.
- The writer explained about the difference between Netscape and Internet Explorer. The student was concerned about the changes to FirstSearch so the writer explained that there would be time for hands-on training on Wednesday and for one-on-one help on Thursday and Friday evenings as well as at the Help Desk during the lunch hours.
- The writer walked one student through the log-on process over the phone.
- The writer suggested that one student try Wilson Education Abstracts for his search topic.
- The student's description of his search was so general that the writer did not get the impression that the student had actually accessed the Electronic Library so she recommended several databases.
- The writer recommended Wilson Education Abstracts for some more current information.
- The writer suggested that they student use proximity searching and Boolean operators in the Advanced Search mode of ERIC to narrow her topic. She also recommended that the student try Wilson Education Abstracts and Research Library Periodicals rather than ArticleFirst and ContentsFirst.
- The writer let the student know that both her strategy and selection of databases were right on target. She did explain how to identify which journals were peer-reviewed in Expanded Academic Index and ProQuest. She recommended that the student use her Web page at http://www.nova.edu/cysprac/peer.htm. She also explained how to locate library catalogs via the World Wide Web via the Electronic Library's Catalogs page.

Alexandria Cluster 96

- The writer recommended that the student broaden her search by using synonyms or broader concepts. For example, in addition to middle schools, the student might use junior high schools or secondary education. The writer also recommended trying PsycINFO. Last of all, she suggested using broader descriptors in WorldCat since this was a databases of books. Thus, the indexing of terms was much broader than in an index of journal articles.
- The writer explained how the student might cut and paste results into her word processing program or email results to herself.
- The writer let the reader know that she would be available that Thursday and Friday for one-on-one help.
- The writer explained that the Electronic Collections Online was not a good choice and why.
- The writer suggested that the student focus her search. The student was looking for the term "assessment" so the writer suggested that the student consider what aspect of assessment she wanted to concentrate on.

Ft. Lauderdale Cluster 97

- The writer recommended using several education databases and using the Boolean operator and in the student's search.
- The writer recommended that the student search one of the book catalogs, either NovaCat or WorldCat.
- The writer recommended that the student try using proximity searching to narrow her search. She also recommended that the student use the databases with educational resources like Wilson Education Abstracts and Research Library Periodicals rather than ArticleFirst or ContentsFirst.
- The writer suggested that the student might want to also consider CINAHL, Medline, and Health and Psychosocial Instruments. She also questioned whether the student wanted to use or on the topic of "autism" or "applied behavior analysis."
- The student had been researching the topic of "youth ministries" and had selected several good databases. The writer suggested that he still try ERIC, Wilson Education Abstracts, PsycINFO, and Digital Dissertations. She suggested the education databases because they do index some parochial school journals.
- The writer recommended that the student try the Linguistic and Language Behavior Database to locate materials on autism. She also suggested CINAHL and Medline for clinical articles on the topic.

- The writer suggested using proximity searching to limit the topic of technology training. She also suggested that the student narrow and focus her topic to some aspect of technology training. Finally, the writer recommended the Computer Database in InfoTrac and the Cambridge Scientific computer databases also additional resources.
- The writer recommended that the student use Wilson Education Abstracts instead of ContentsFirst for locating education-related articles.
- The writer suggested that the student use the ERIC descriptors "homosexuality" and "lesbianism" to widen her search beyond the keyword terms of "gays" and "lesbians." She also suggested trying the phrase listening skills in ERIC. The writer also recommended PsycINFO and suggested a search strategy that would limit the search to "education," "schools," or "teachers."
- The student had used search engines instead of the Electronic Library so the writer explained how to access the Electronic Library and why the student should be making use of this resource in her literature review.
- The student did not provide any specific details about her search topic or strategy. She indicated which databases she used and that she found it useful to limit her search primarily to full-text articles. The writer explained that the student would be overlooking many articles that might pertain to her literature review with this strategy. She explained that only about 15% of the recent education articles were available in full text.
- The writer recommended that the student try ABI/Inform as a more scholarly business database than BusManPrac. She reminded the student to limit the databases selected in order to not get newspaper articles and pointed out that ABI/Inform had a good deal of full text articles. She also suggested that the student try NovaCat, Digital Dissertations, and NSU's MARPs, Practicums, and Applied Dissertations Database. She did recommend against using ArticleFirst since it was not indexed and did not have abstracts.
- The writer let the student know that Social Science Index, General Science Index, and Arts and Humanities were not good databases to search on the topic of student achievement and standardized testing since they were subject-specific databases. Instead, the writer recommended using Wilson Education Abstracts, Digital Dissertations, NovaCat, and NSU's MARPs, Practicums, and Applied Dissertations Database.

- The writer described why FirstSearch did not search her search phrase as a phrase but as terms combined with implied "ands." The writer suggested doing proximity searching.
- The writer reminded the reader that he could get obtain many dissertations indexed in Digital Dissertations through interlibrary loan and that Distance Library Services would buy two for him to keep at no charge.
- The writer answered the student's question by explaining about the print station feature offered in InfoTrac.
- The writer advised using the ERIC descriptor "attention deficit disorders" rather than "ADHD."
- The writer explained how to order articles through Distance Library Services. She also recommended that the student consider using the computer databases to locate articles on the topic of computer assisted instruction.
- The writer suggested that student use the ERIC database for her topic of parent involvement and preschools. She also suggested that the student consider also trying the ERIC descriptor, "parent participation," as a possible synonym.

APPENDIX G

POWERPOINT PRESENTATION HANDOUT FOR THE CYS PROGRAM ORIENTATIONS

Distance Library Services for Education Students

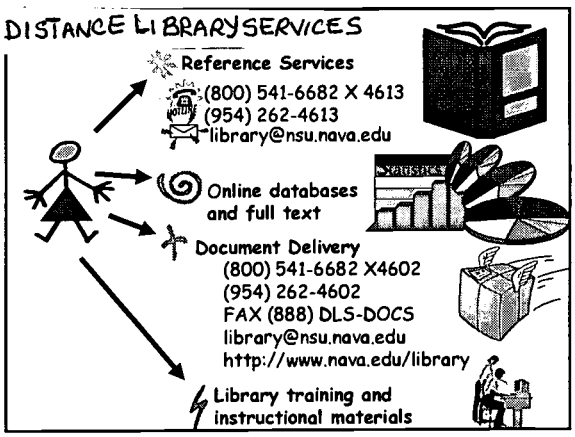
Nova Southeastern University

Workshop Agenda:

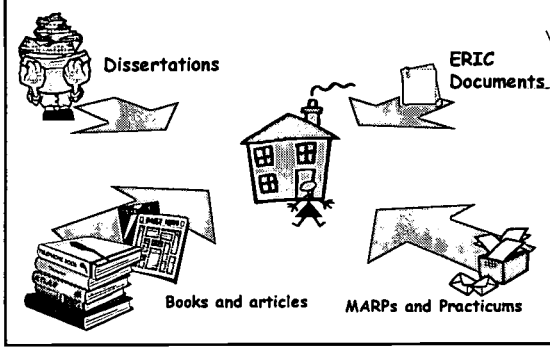
Learn about:

1. Distance Library Services
2. The Electronic Library
3. ERIC
4. Finding full-text education articles

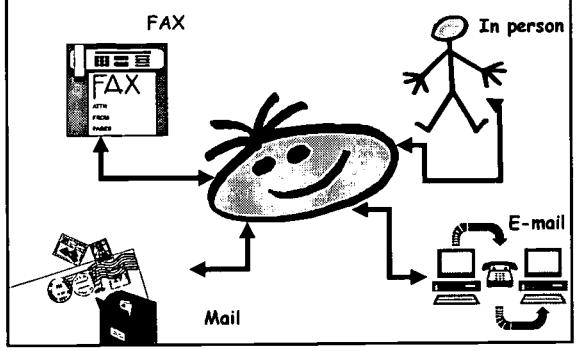
DISTANCE LIBRARY SERVICES



Types of Materials that Can Be Sent to Your Home by DLS:



Ways to request materials from DLS:



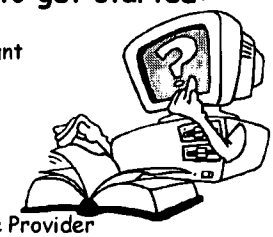
ALTERNATIVE RESOURCES

- Web and Internet Resources
- Local Libraries
  - Public Library, State Universities and Colleges
  - NSU Library Agreements

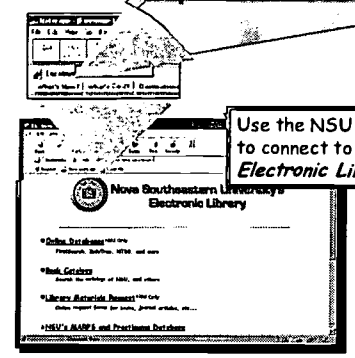
Using the Web for Research

What you need to get started:

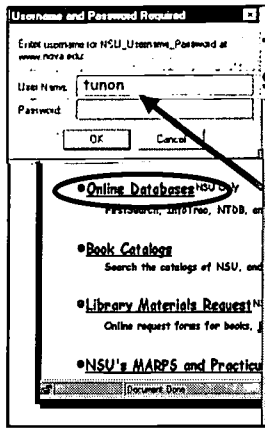
- ☑ NSU UNIX account (From your program)
- ☑ Computer
- ☑ Modem
- ☑ Internet Service Provider for Web access



http://www.nova.edu/library



Use the NSU Web address to connect to NSU's *Electronic Library* (EL).

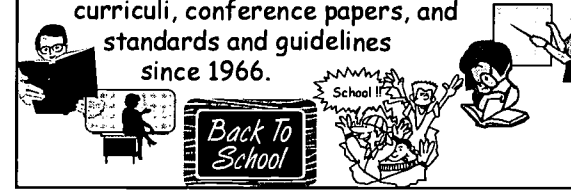


Southeastern University's

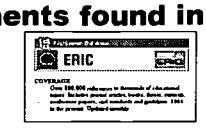
- Only NSU students can access on *Online Databases* that the university pays a subscription for.
- When you click on *Online Databases*, a pop-up menu appears for the password.
- You must have a UNIX account and password to use this resource.
- You get an account through the cluster coordinator.

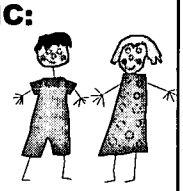
ERIC

ERIC is an excellent source for locating education resources. The database includes journal articles, books, theses, curriculi, conference papers, and standards and guidelines since 1966.



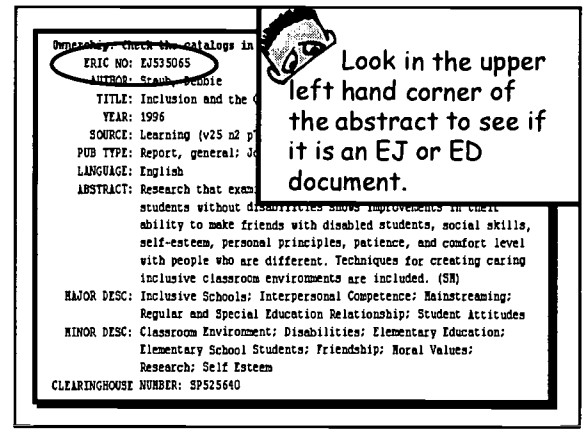
There are two kinds of documents found in ERIC:





EJ documents are journal articles indexed from CIJE.

ED documents are from RIE and are made available from the Dept. of Education on microfiche. ED documents (materials not published in journals) -- conference proceedings, Nova practicums, school training materials, etc.



Look in the upper left hand corner of the abstract to see if it is an EJ or ED document.

For **EJs**, you need: the title of the article, the name of the journal, the name, date, volume number, and pages:

ERIC NO: EJ531014
AUTHOR: Scigliano, John A.; And Others
TITLE: Using HTML for Organizing Student...
YEAR: 1996
SOURCE: T.H.E. Journal (v24 n1 p51-56 Aug

For **EDs**, you need the ED number:

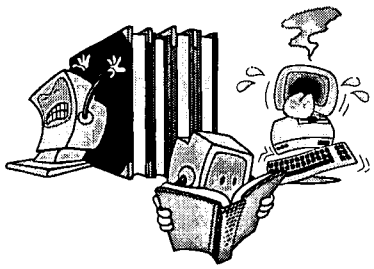
ERIC NO: ED405928
AVAILABILITY: EDRS Price - MF01/PC01 Plus Postage.
AUTHOR: Satterlee, Brian
TITLE: Executive Leadership Concepts for Higher

FirstSearch Database
ERIC

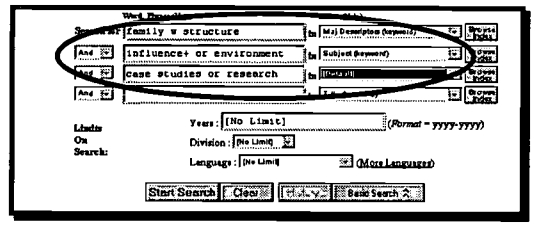
Ways to get ERIC documents:

- **DLS** will send a **free microfiche copy** of an ERIC ED document to you.
- Libraries with government depositories usually have the ERIC microfiche collection.
- Order paper or electronic copies from EDRS, call 1-800-443-ERIC or http://edrs.com in Beta Test Area ($4.08 per 25 pages)

Searching ERIC



Use Advanced Search to combine several terms. Refer to your booklet, *Introduction to Distance Library Services and the Electronic Library*, for ways to refine your search results. .



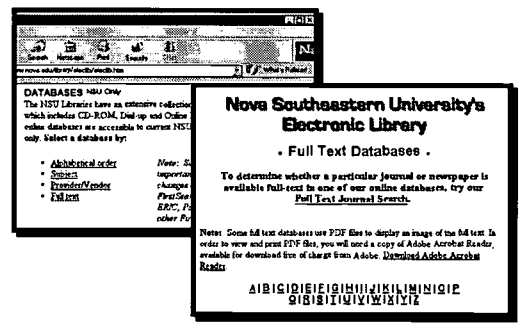
Finding FirstSearch Full-Text Articles

Full text is a research solution ...

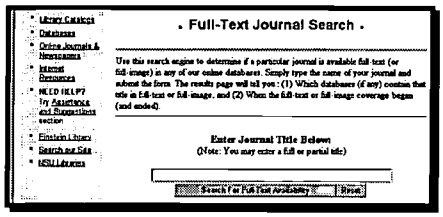
that provides equal access for NSU students on and off campus...

and that is neither time or place bound.

Using Full Text Journal Search to Locate Articles



Use to locate the full-text of specific articles found in indices such as ERIC or PsycINFO.



Where to look for full-text articles:

- Wilson Education Abstracts FT
- ProQuest Direct - Library Journal Periodicals
- InfoTrac -- Expanded Academic ASAP
  Health Reference
  Computer Database

Using Your Computer in the Research Process

Search ERIC.

Search other indices.

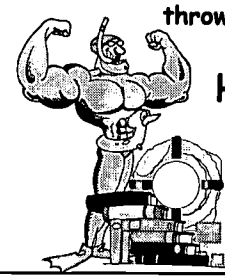
Search Library Journal Periodicals in ProQuest, Wilson Education Abstracts, etc., for full-text of articles.

Find journal articles and ERIC documents that are available locally.

Request materials from Distance Library Services.

Reference HELP

Remember -- The library doesn't just throw you in the deep end.

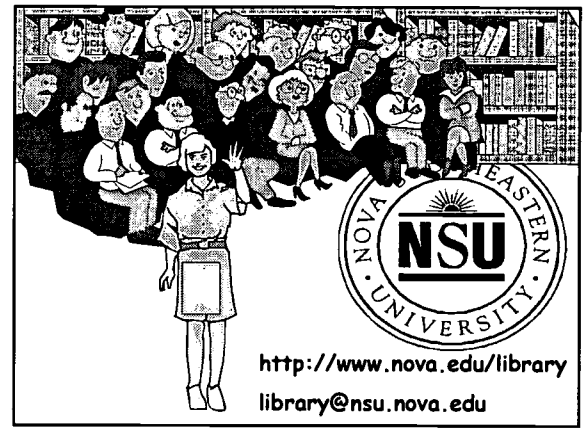


Help is available:

Whether you have questions about how to zero in on the precise information you need or about which databases to search, you can always call the Reference Desk in the Einstein Library.

(800) 541-6682 X4613

library@nsu.nova.edu



http://www.nova.edu/library

library@nsu.nova.edu

APPENDIX I

"LIST OF DATABASES RESOURCES FOR CYS STUDENTS" HANDOUT

Database Resources for CYS Students

- *ERIC*
  - EJ -- articles in educational journals
  - ED -- microfiche copies of educational documents
- Full-text resources
  - *Wilson Education Abstracts*
  - *ProQuest Direct*
  - *Expanded Academic Index ASAP*
- *NSU's MARPs, Practicums, and Applied Dissertations Database*
- *Digital Dissertations* -- NSU dissertations full-text
- *WorldCat* -- books available through interlibrary loan
- Social Science databases
  - *PsycINFO*
  - *Social Science Index*
  - *Sociological Abstracts*
  - *HAPI (Health and Psychosocial Instruments)* -- in Ovid
  - *Mental Health Collection* -- in Ovid (full text)
- Technology databases
  - *Computer Database* -- with selected full-text articles
  - *PapersFirst* -- indexes papers presented at conferences
  - *Applied Sciences and Technology*
  - Computer databases in *Cambridge Scientific*

APPENDIX J

"SEARCHING ERIC EFFECTIVELY" HANDOUT

Searching ERIC Effectively

1. Write a search statement: _____

_____

_____

2. Underline the keywords or concepts in your search statement.

3. List the keywords and any synonyms and ERIC descriptors in the columns:

Concept		Concept		Concept
_____	**and**	_____	**and**	_____
or		**or**		**or**
_____	**and**	_____	**and**	_____
or		**or**		**or**
_____	**and**	_____	**and**	_____

4. Identify any other limiting factors such as type of document, years of publication, and field searching.

_____

APPENDIX K

"TIPS FOR FOCUSING A SEARCH" HANDOUT

Tips for Focusing a Search:

- Use descriptors or subject headings
- Use field searching for example, limit by words in title or by author's name
- Limit by year or years

  Example: 1990-
  1995-1998
- Limit by type of document

  For example, RIE or CIJE in ERIC
- Proximity or phrase searching

  For example, in FirstSearch databases
  elementary **w** education
  distance **w** education
  meta **w** analysis
- Combine terms to narrow a search with **AND**.

  Example: mainstreaming **and** reading **and** elementary w education
- Combing terms with **OR** broadens a search.

  mainstreaming **or** inclusion
- Look for singular or plural of a term.

  For example, in FirstSearch, use **+**
  computer**+**
  school**+**

APPENDIX L

HANDOUT FOR SUMMER INSTITUTE TRAINING OF STUDENTS IN THE SPS SPECIALIZATION AREA

PsycINFO

ERIC

Medline

CINAHL

HAPI (Health and Psychosocial Instruments)

Database _____

APPENDIX M

POWERPOINT PRESENTATION FOR TRAINING OF STUDENTS IN THE SPS SPECIALIZATION AREA

Doing Research on the Topic of *Social Skills* or *Pragmatics*

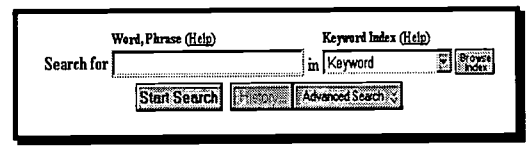
↓

Pick a Database

↓

PsycINFO

Where to start?



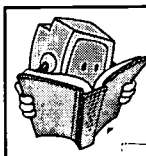
Developing a Search Strategy:

First decide on a topic.

For example:

I want to find information about social skills.

Identify your key term or terms.



Proximity searching in FirstSearch databases:

family w structure

needs w assessment

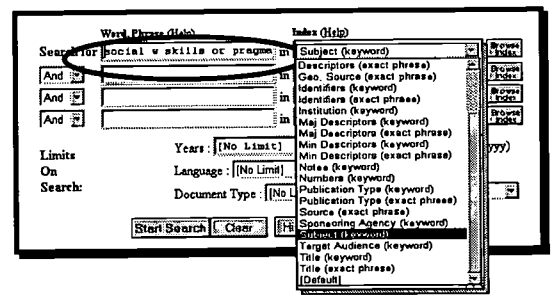
social w skills

Boolean operators to narrow your search:

and  Narrowing a search

or  Broadening a search

Social w skills or pragmatics



Concept and social w skills
or pragmatics

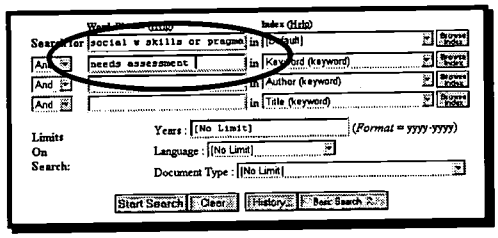
Concept and
or

Concept
or

Search Results in PsycINFO

Social w skills	8,149		
Social w skills or pragmatics	9,258		
Social w skills or pragmatics (Descripters/ keyword)	7,121		

social w skills or pragmatics and needs assessment



Concept and social w skills
or pragmatics

Concept and needs assessment
or

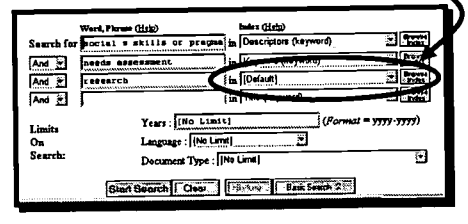
Concept
or

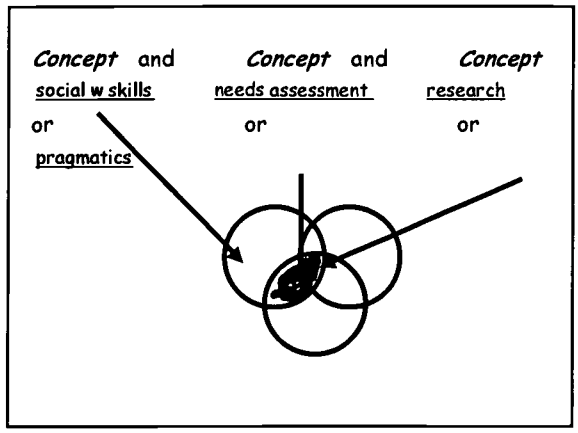
Search Results in PsycINFO

		Needs assessment	
Social w skills	8,149	80	
Social w skills or pragmatics	9,258	85	
Social w skills or pragmatics (Descripters/ keyword)	7,121	44	

social w skills or pragmatics and needs assessment and research

Be careful of the default setting:. Change *Author* to *Default*.



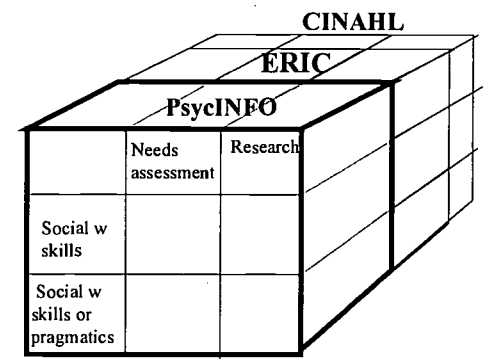


Search Results in PsycINFO

		Needs assessment	Research
Social w skills	8,149	80	0
Social w skills or pragmatics	9,258	85	19
Social w skills or pragmatics (Descripters/ keyword)	7,121	44	8

Databases to Search

* PsycINFO
* ERIC
* CINAHL
* Medline
* Health and Psychosocial Instruments (HAPI)



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Printed Name/Position/Title: Johanna R. Tuñón, Head of Distance Lib. Serv

Organization/Address: Nova Southeastern University, 3301 College Ave, Ft. Lauderdale, FL 33314

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FAX: (954) 262-3947

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Date: 3/28/00

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