DEVELOPMENT OF AN INFORMATION LITERACY COURSE

FOR COMMUNITY COLLEGE STUDENTS

by

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(ABSTRACT)

This study was an action study which used survey research to solicit input from a panel of experts on information literacy. The attributes of an information literate person identified by a panel of experts in 1992 were used as the basis for developing content goals for an information literacy course for community college associate degree students. Using these attributes as the basis, content goals were developed from the literature for each attribute and worded according to an expert curriculum development system.

A panel of experts on information literacy responded to a survey in which they validated the content goals by rating them as to difficulty and frequency of use. The difficulty factor referred to how difficult the content goal would be for community college students to achieve. The frequency factor related to how often the student would use the skill or knowledge in future academic and career activities. The combination of these two ratings placed the content goals into a two by two matrix. The placement in the matrix allowed the developer to select content based on importance of
content to the course. Forty-seven of the seventy-two content goals were included in the course based on the expert ratings and matrix cell placement.

An expert system was used to develop the course. The IPSI Performance Instruction expert system was used to configure the syllabus, learning experiences and evaluation scheme for the course. The system allowed the developer to maintain consistency in what was planned, what was delivered and what was evaluated. The course was developed as an individualized, performance based course and consisted of fourteen modules.

Documents produced as a result of this study were a course syllabus, fourteen modules containing learning experiences that allow the student to achieve the content goals, and an evaluation scheme composed of tests and skill checklists. The course is designed as a three credit semester length, individualized course.

The findings allowed the developer to configure the course in information literacy and to conclude that information literacy skills are an integral part of the educational experience. The course content fit easily into a modular instructional format. This format of instruction should be evaluated as to its application across the community college curriculum. Information literacy skills appear to align closely with general education skills and this relationship should be investigated further. Curriculum standards should be considered that incorporate information literacy into community college associate degree programs.
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CHAPTER 1

INTRODUCTION

Information is expanding at an unprecedented rate, and rapid strides are being made in technology for storing, organizing, and accessing the ever growing tidal wave of information. Since 1987, the number of books published has been between 46,000 and 56,000 new titles each year (Ink, 1994). A record was set in 1993 for new consumer magazine titles with 789 new titles being issued, an increase of 110 titles over 1992 (Husni, 1994). In addition to increases in print materials, the publication of electronic materials increased. CD-ROM publication increased by 36% over 1992 to 4,422 available titles (Nicholls, Sutherland & Julien, 1994). The building of the Information Highway will greatly expand the amount and availability of information. As more information is produced and stored in digital format, the key to using this information will be the ability to access, locate and select relevant information. These who are not adept at finding and using information will be at a disadvantage.

Educational reform calls for a restructuring and re-engineering of the teaching and learning process. Students should be active, independent learners who spend as much time in the library as they do in class (Boyer, 1987, p. 160-163). Students must assume responsibility for their learning and they should use a variety of resources in the learning process to master information skills which will allow them to become lifelong learners and active citizens (American Library Association, 1989; Breivik & Gee, 1989; Farmer, 1992a). Harlan Cleveland (1985, p. 21) states, "those people who do not educate
themselves—and keep educating themselves to participate in the new knowledge environment will be the peasants of the information society." Farraer (1992b) expresses the importance of information skills in business:

The majority of American workers in the twenty-first century will pursue careers directly related to the identification, selection, analysis, application, and communication of information. Even now, business leaders call for college graduates who are critical thinkers and problem solvers and who are able to search out and process information from throughout the global community (p. 110).

The information explosion continues, the cry for educational reform continues, and the demand for employees who can read, write, compute and communicate at a reasonable level continues. The 21st century will demand well-trained workers who can adapt and learn throughout their lives. The issues of crime, violence, and poverty continue. Beyond the demands of the workforce, personal issues, and societal issues, lies our democratic society which depends on a literate citizenry for its continued existence. Societal issues and global competition will require a citizenry that can make decisions to contend with those issues. The community college will continue to be the institution of choice for many traditional and non-traditional students. The community college is obligated to prepare students to perform in the workplace at a high technical level and to see that students acquire the skills to participate in society as a whole. Those skills include the ability to continue to learn, to solve problems, to make decisions, to communicate verbally, visually and in writing. Behind all these attributes is the need to locate, evaluate and use
information; that is, to be information literate. Knowledge is power and access to information is the first step to knowledge. For educational reform to materialize, there must be a shift from faculty teaching to student learning. Information literacy is both essential to educational reform and to an individual's survival in the workplace and as a citizen. The proliferation of information and the need to utilize information continually establishes the basis for the analysis of the information needs of students and the formal instruction of information skills.

**PROBLEM STATEMENT**

Outcome measures for information literacy based on the National Education Goals of 1990 (U. S. Department of Education, 1990) were established in a study that was conducted for the National Forum on Information Literacy, a group of representatives from 46 national business, government, and education organizations (Doyle, 1992a, 1992b). The study established a definition of information literacy and discrete attributes of an information literate person. Goal 5 of the National Education Goals (U. S. Department of Education, 1990) addressed the need for adults to be literate and to possess the knowledge and skills to compete in a global economy and to exercise the rights and responsibilities of citizenship.

The community college prepares adults to participate in the workforce and in society and is obligated to see that the issues addressed in Goal 5 (U. S. Department of Education, 1990) are part of the educational experiences of its students. No studies have been conducted to determine the information literacy skills needed by community college

Therefore, the procedural problem was to determine the relationship between outcome measures prepared for the National Forum for Information Literacy on optimal performance instruction course content for community college students.

PURPOSE STATEMENT

The general purpose of the study was to develop a competency-based information literacy course for community college students. The proliferation of information and the need to be able to navigate the tidal wave of information (American Library Association Presidential Committee on Information Literacy, 1989) supports the need for formal instruction in information literacy skills. It is especially important that community college students be well-grounded in information literacy skills. Community college students are trained in fields that change rapidly and are subject to sophisticated technologies. It is essential that community college students are able to find and use information so that they remain competitive in their professions and participate in society as informed citizens.

Specifically, the study addressed the following ancillary purposes.

1. Synthesize the extant literature on information literacy as it relates to general education skills, educational reform, resource-based learning and performance-based instruction.

The literature supports the call for educational reform with the movement toward active, independent learning through the use of a variety of resources (Boyer, 1987;
Breivik & Gee, 1989; Cull, 1991; Hambleton, 1992; Kirk, 1987). Students need to engage in learning activities that allow them to develop critical thinking skills. Seeking information, analyzing it, evaluating it and applying it all involve critical thinking skills. Beyer (1985) identifies critical skill competencies that have been emphasized by library media specialists in schools. The competencies include distinguishing between facts and values, determining reliability of a source, determining factual accuracy, detecting biases, and recognizing logical inconsistencies. Development of independent learners who are able to locate, use and evaluate a variety of resources leads to learners who know how to learn and build on their existing knowledge base. The skills that students develop through information literacy are transferable to the many situations students will encounter throughout their personal and professional lives (Kuhlthau, 1987).

2. Validate the content goals through the use of a panel of experts.

A panel of experts was used to formulate and validate a definition of information literacy and to identify the characteristics of an information literate person (Doyle, 1992a, 1992b). The panel consisted of experts from the fields of education, library and information science, and technology. Several of the experts also serve on the National Forum on Information Literacy (Doyle, 1992a, 1992b). Some of these experts along with Directors of Learning Resource Centers from League for Innovation Community Colleges were asked to evaluate content goals for a course in information literacy. The panel of experts for this study was asked to expand the attributes of an information
literate person through the validation of content goals based on the attributes of an information literate person they identified (Doyle, 1992a, 1992b).

3. Determine, write in consistent syntax, categorize, and prioritize content goals for an information literacy course for community college students.

An expert system (Vogler, 1991, 1992a, 1992b, 1992c, 1992d, 1993a, 1993b) was used to develop the course in information literacy. Information and access to information will change rapidly as we approach the 21st century. Rapid development of storage and transmission of information will present ever-changing challenges to users of information and to those who teach information skills. It is appropriate that the course be developed through an expert system that will allow frequent revision and updating as information resources change and as access to information changes. Through the use of an expert system, curricular content will always be current.

RESEARCH QUESTIONS

Three research questions were addressed in achieving the purpose of the study:

1. What are the content goals for information literacy skills for community college students?

2. How are the goals rated as to frequency of use and difficulty by a panel of experts?

3. Given the ratings by the panel of experts on the frequency of use and difficulty, what are the validated, prioritized list of content goals?
CONCEPTUAL FRAMEWORK

The conceptual framework of the study was anchored in five elements:

1) General education skills were used as the basis for establishing the relationship of information literacy skills as basic to curricular content. Technological developments such as the Internet and the information highway were addressed as to their impact on curricular content and reform.

2) The Association of College and Research Libraries (ACRL) (1987) Model Statement of Objectives for Academic Bibliographic Instruction was used in designing the course.

3) The Standards for Community, Junior and Technical College Learning Resources Programs (Association of College and Research Libraries, 1994) in section 5.5 call for the provision of an information literacy program that provides instruction in accessing and evaluating resources in a variety of formats.

4) Resource based education was used as a basis for establishing the cross-curricular nature of the course and the need to involve the student in an active learning environment.

5) IPSI Coursebuilding Software was used to make the syntax of the goals consistent, prioritize the goals and finalize the course content.
General Education

This study was grounded in the proposition that students must acquire information skills to be able to function in the workplace and in society (Breivik & Gee, 1989; Doyle, 1992a, 1992b; Farmer, 1992a). The ability to find, evaluate, apply and communicate information is a survival skill in today's information based society. The attributes associated with an information literate person (Doyle, 1992a) are closely aligned with the elements of general education and specifically with the higher order skill of critical thinking.

The Association for Supervision and Curriculum Development identified four categories of thinking skills: problem solving, decision making, critical thinking, and creative thinking (Costa, 1985). The process of locating, evaluating, and using information involves the four categories of thinking. Boyer (1987) suggests seven areas of inquiry for the general education framework -- language, art, heritage, institutions, nature, work and identity. Inquiry into these seven areas will require active learners who can locate, interpret and communicate relevant information. Thus, information literacy serves as the basis for the inquiry and the process of the inquiry enhances the independent learning skills of the student.

Technological advances such as the information highway will impact the availability and accessibility of information for everyone. These advances are of particular interest to community colleges because they will allow community college students to have access to resources that were available only at upper division institutions. Universal access to a
variety of resources offers opportunities for major curricular reform, innovative approaches to teaching and learning in the community college, and collaborative ventures among community college faculty.

**Resource Based Education**

Resource based learning involves planned educational programs that actively involve students in the use of a wide spectrum of print, non-print and other resources (Breivik & Gee, 1989; Boyer, 1987; Hambleton, 1992; Kirk, 1987). Resource based learning represents the shift in an emphasis on content to an emphasis on the processes of learning that depend on the use of information and the development of information skills (Kirk, 1987).

**Performance Based Education**

Content goals were identified from the literature. The content goals were transformed into a common syntax through the use of Vogler's IPSI CourseBuilding Software (Vogler, 1993a, 1993b). Each content goal was formed into a short statement beginning with a present tense action verb and ending with a direct object (Vogler, 1991). To facilitate sorting, the verb will "lend itself to observation and measurement" (Vogler, 1991, p. 15). Some of the content was based on the ACRL Model Statement of Objectives for Academic Bibliographic Instruction (ACRL, 1987). In accordance with the IPSI Solutions System, each content goal was sorted within three domains: cognitive, psychomotor and affective. Cognitive domain goals involve students' knowledge; psychomotor domain goals involve skill requirements; and affective domain goals include
statements that relate to interests, attitudes and values (Vogler, 1991). The domain sort assists the curriculum developer to "clarify the content intent" (Vogler, 1991, p. 15).

**Frequency/Difficulty Sort**

The frequency and difficulty sorts allowed the curriculum developer to determine how much and what should be taught or what should not be taught (Vogler, 1991). Based on the sort, items that are to be performed frequently in an information retrieval activity were covered thoroughly in the course. High frequency, low difficulty (1 priority) goals were covered in the course and were given the highest priority. High frequency, high difficulty (2 priority) goals while important, rank below the first category. It is felt that competence in these skills will increase as experience in the information gathering process increases. Low frequency, high difficulty (3 priority) goals were the next considered for inclusion in the course. Low frequency, low difficulty goals (4 priority) were considered less important and were not included in the course. It was assumed that the student would acquire these skills on his own or as he progresses through the course.

**ASSUMPTIONS**

It was assumed that there was sufficient interest in the inclusion of information literacy skills in the instructional experiences of college students. This was well documented in the literature (Breivik & Gee, 1989; Boyer, 1987; Brotman & Loe, 1990; Pastine & Katz, 1989).
It was assumed that curricular content for a course in information literacy could be validated by the use of an expert panel (Doyle, 1992a). It was assumed that information literacy skills are applicable to the diverse curriculum offerings of the community college and the varying academic backgrounds of students enrolled in the community college.

**DELIMITATIONS**

This study was delimited in order to focus on the information literacy skills needed by the community college student in an associate degree program. The definitions of information literacy and an information literate person used were those definitions arrived at by the panel of experts completing the Information Literacy Outcome Measures Project (Doyle, 1992a). Knowledge of the community college curriculum and the community college student varied among the panel members. This variation in knowledge could impact the ratings of the content goals. The Directors of the Learning Resources Centers at League for Innovation Community Colleges had input on the content goals. The member colleges of the League for Innovation are large, comprehensive community colleges that are leaders in innovation in community college instruction. While this may impact the study, it is felt the League schools represent community colleges nationwide and that the directors of learning resource programs are knowledgeable about a wide variety of information resources and community college curricular offerings.

While a definition of an information literate person has been carefully formulated, the interpretation of the elements of the definition of an information literate person may vary among the panel of experts, thus impacting the ratings of the content goals. The higher
order cognitive skills required of an information literate person will be subject to the same difficulty in measurement as general education skills. There could be some discrepancy among the of experts in the interpretation of the content goals based on their knowledge of technology in general and specifically as technology relates to information resources.

The ACRL (1987) Model Statement of Objectives for Academic Bibliographic Instruction was used as a basis for formulating some of the content goals in accordance with their intended use. The model is intended to serve as a checklist for examining present programs and as a resource for developing new programs. When the model is used for developing new programs the following steps are recommended: define the user group and present level of sophistication; determine purpose of instruction; determine sections of the model which are relevant; select relevant terminal objectives; create additional subpoints if needed; develop enabling objectives. The model was used in the development of some of the content of this course. The limiting factors of the model may be the 1987 date of publication which preceded much of the literature on information literacy and the fact that information literacy is broader in scope than bibliographic instruction.

LIMITATIONS

This study was limited to community college students in associate degree programs. Thus, the results were applicable only to the information literacy needs of students in associate degree programs. The course content was based on the analysis of the responses of the panel of experts which consisted of some members of the Panel of Experts (Doyle,
1992a) completing the Information Literacy Outcome Measures Project and the Directors of Learning Resource Programs at League for Innovation community colleges.

The definition used as a basis for information literacy was the one arrived at by the Panel of Experts (Doyle, 1992a) completing the Information Literacy Outcome Measures Project and the interpretation of the elements of the definition rests with the individuals comprising the panel of experts. Information literacy was defined as the ability to access, evaluate and use information. The varying knowledge of the panel about the community college student and the community college curriculum may cause discrepancies in the ratings of the content goals. Some of the skills associated with information literacy were easily measurable while some of the higher order skills such as critical thinking, problem solving and comprehension skills were subject to the same measurement problems as general education skills.

The course was based on a variety of resources with the expectation that electronic resources and external resources such as the Internet are available at the community colleges. The ACRL (1987) Model of Objectives for Bibliographic Instruction was used for development of some of the content for this course but the applicability of the model is limited because of its 1987 publication date. Other resources were also used in the development of the content of this course. The developer eliminated any inconsistencies among the ACRL Model and other resources.

While the content of the course was validated, the actual time it will take the student to complete the activities and exercises was not addressed. By using the IPSI expert
system, it is possible to equate credit and time. However, since this is a new course, the actual time requirements to complete the course in a semester must be verified. The self-paced nature of the course will address a variety of learning styles and will make it difficult to validate time on task. The developer built in a self-assessment that students will complete. The student will have the opportunity to address time required to complete the assignments and exercises in the self-assessment.

DEFINITIONS

**Affective domain** - The affective domain is based upon behavioral aspects and includes the levels of awareness, distinction and integration (Vogler, 1991).

**Bibliographic Instruction** - See Library Instruction

**Cognitive domain** - The cognitive domain is knowledge based and includes the levels of fact, understanding and application (Vogler, 1991).

**Competency based education** - Learning based on measurable outcomes that are formulated on what a student must know or do to exit from a learning experience (Vogler, 1991).

**Content goal** - Statement which communicates curricular intent and curricular content. Content goals consist of a verb and a direct object and represent three hours of learning time (Vogler, 1991).
**Critical thinking** - Essential elements in critical thinking are a readiness to question all assumptions, knowing when to question, and the ability to carry out evaluations and analyses in a rational manner (Furedy & Furedy, 1985).

**Difficulty** - This dimension relates a content goal statement to how hard this content goal is to accomplish on the job (Vogler, 1991).

**Domain** - A classification of content goals as cognitive, psychomotor or affective (Vogler, 1991).

**Frequency** - This dimension relates how often content is used while on the job (Vogler, 1991).

**Information** - All ideas, facts, and imaginative works of the mind that have been communicated, recorded, published and or distributed informally in any format (American Library Association, 1983, p. 117).

**Information age** - The age in which we now live, characterized by rapid exponential growth of new information readily accessible in a variety of print and electronic formats (Breivik, 1992).

**Information literacy** - Information Literacy is the ability to access, evaluate, and use information from a variety of sources (American Association of School Librarians and the Association for Educational Communications and Technology, 1988; American Library Association, 1989; Breivik, 1985; Doyle, 1992a).
**Information skills** - Skills that allow the student to define the purpose of an information task, locate data, select and interpret data, and use the information to complete the task (Kirk, 1987; Kuhlthau, 1987; Nofsinger, 1989).

**Level** - This element refers to the degree of complexity of content goals (Vogler, 1991).

**Library or bibliographic instruction** - Instruction in the use of libraries to help clientele utilize resources more effectively (Brottman & Loe, 1990).

**Psychomotor domain** - The psychomotor domain is skill based with the student producing a product. It includes levels of imitation, practice, and habit (Vogler, 1991).

**Resource Based Learning** - Learning programs in which the student is an active participant, using a variety of print, non-print and human resources. Students engage in a variety of experiences, interacting with the learning environment at their own level, individually and in small groups (Department of Education, 1990).

**Significance Of The Study**

Academic libraries in the U. S. spent almost $1.3 billion for books, periodicals, audio visual, and electronic materials in 1992 (Bowker, 1994). Community college learning resource centers in North Carolina spent $4.2 million for materials. These resources are purchased to support the instructional programs at the institutions. Better utilization of these resources along with other resources in the community and beyond would be possible through a formal information literacy program. The expenditure for these resources could be justified, students would be provided with skills they could use
throughout their lives, and the educational experience of students would be enriched as they acquired the skills to utilize a variety of information resources relevant to their discipline and to their role as members of society.

The proliferation of information and the ability to access that information will continue as technology develops and as concepts such as the Information Super Highway become realities. With the ability to obtain or access voluminous amounts of information comes the need to be skillful evaluators and users of this information. Community college students are being trained to enter highly technical fields that will change rapidly and are dependent upon information. Graduates who are skilled in obtaining and using information will be better prepared to learn, change, develop new skills and compete in the workforce.

This study determined which information literacy skills should be included in a competency based course for community college students in associate degree programs. A course with validated content based on the attributes of an information literate person was developed for community college students. Based on the literature on information instruction, there appears to be a need to develop courses which address the attributes of an information literate person. The course follows the development of information literacy as a concept and the establishment of the attributes of an information literate person.
Organization Of The Study

This study is organized into five chapters. Chapter one includes the introduction, problem statement, study purpose, research questions, conceptual framework, assumptions, delimitations, limitations, definitions and the significance of the study.

Chapter 2 presents a review of the literature on information literacy, library instruction practice and research, resource-based learning, education reform, and performance-based instruction. Chapter 3 describes the design of the study including the identification of content goals, selection of panel of experts, survey design, and method of analysis.

Chapter 4 contains the results and analysis of the survey. Chapter 5 interprets the results of the study and discusses the implications of the study.
CHAPTER 2

REVIEW OF THE LITERATURE

This literature survey was structured to address the conceptual framework of the study: information literacy as a general education skill basic to the curriculum; the Association of College and Research Libraries Model Statement of Objectives for Academic Bibliographic Instruction; Standards for Community, Junior and Technical College Learning Resources Programs; resource-based education and educational reform; IPSI CourseBuilding Software for developing performance-based instruction. The review examines the following: the evolution, development and components of the concept of information literacy; information literacy and general education skills; ACRL Objectives and ACRL Standards for Community, Junior and Technical College Learning Resource Programs with current library instruction research and practices; impact of technology on information; information literacy and educational reform; performance based instruction.

EVOLUTION OF INFORMATION LITERACY

A review of the literature on information literacy and library instruction shows a steady evolution toward user-based, active, curriculum-related library instruction and a recognition that information skills are relevant to the whole educational experience of students and to the issues they face throughout their personal and professional lives. The term "information literacy" was first used in the 70's (Zurowski, 1974) and held a meaning close to traditional library instruction: the location of resources. The term
continued to be used in a variety of ways, most frequently in direct exchange for library or bibliographic instruction.

The term was formally defined by a panel of library and education experts in 1992 (Doyle, 1992a) as a list of attributes an information literate person should have. The attributes arrived at by the experts include: recognizing the need for information; recognizing that accurate and complete information is the basis for intelligent decision making; formulating questions based on information needs; identifying potential sources of information; developing successful search strategies; accessing information sources in a variety of formats; evaluating information; organizing information; integrating new information with existing knowledge; and using information in critical thinking and problem solving.

The definition of an information literate person (Doyle, 1992a, 1992b) broadens what was traditionally thought of as library instruction to a concept of generally applicable skills that students can use throughout their educational career and their lives. The definition of an information literate person ties the role of the library directly to the curriculum and positions the library to be an integral part of the instructional program. The resources already in the library or learning resources center, the emergence of technologies that expand access to informational resources and the recognition that students will enter a rapidly changing, information-based environment support the concept of information literacy as a viable part of a college student’s experience.
Information Literacy and the Learning Process

The term information literacy was first used in 1974 in a paper that called for a national program to achieve information literacy by 1984 (Zurowski, 1974). Information literacy was defined as the ability to locate and use a wide range of information resources to address a problem. Several states established programs that included teaching information skills in the K-12 schools. New York, Maryland, South Dakota, Pennsylvania and North Carolina established strategies for including information skills to enhance learning (Kuhlthau, 1987). Information literacy includes the skills of problem solving, decision making, critical thinking, information gathering and interpretation as well as basic literacy and computer skills (Demo, 1986).

Information skills are the most basic skills that students need to acquire the ability to learn and to continue learning (Tasmanian, 1986). Information skills are best learned when there is an immediate and purposeful need rather than in isolation from the curriculum. Skills that should be addressed include locating information resources, selecting the most important resources, interpreting the new information, evaluating the information, and effectively presenting the information. Kuhlthau (1987) defines information literacy as being comprised of library skills and computer literacy with the student being required to interpret and use information.

Information literacy has evolved beyond the traditional library skills which focused on locating information. In addition to the location of information, in information literacy, interpretation and application of the information are necessary (Kuhlthau, 1987). The
process approach to library instruction provides students with an awareness of how a problem or topic may change as information is gathered. Students become intellectually involved and participate with a sense of ownership and approach the solution to problems through an inquiry process (Kuhlthau, 1987).

Inquiry is a process that involves higher order skills of comprehension, problem solving, communication and thinking (Kuhlthau, 1987; Sheingold, 1987). In inquiry, students learn how to find information, determine what is important, and restructure the information to address a particular situation (Smith, 1987). The skills practiced in the inquiry process enhance the student’s ability to think and learn.

**Information Skills**

Information skills are recognized as being essential to college level students from both a general perspective as well as a discipline specific perspective. The Association of College and Research Libraries (1987) model statement of objectives addresses four broad areas of information skills and competencies. These include the user understanding how information is identified and defined by experts, how information sources are structured, how information resources are accessed, and how information sources are physically organized and accessed.

Moran (1990) sees librarians as capable of empowering undergraduates to become independent, self-directed learners who will be able to cope with the rapid changes of an information society. Students can be freed from lockstep education, lectures and grades by the creation of an environment like the library where students can experience dynamic
learning experiences. Rader (1990) describes information literacy as going beyond library instruction in that information literacy prepares people for lifelong self-education in a global, electronic environment. It prepares people to handle information in any given situation. Pastine and Wilson (1992) address the importance of the research process rather than the product. They advocate the process as being crucial to the development of critical thinking and the ability to turn information into knowledge.

**Library Instruction Goals**

Library instruction has taken on the attributes of higher level processes that involve thinking, behaviors, and the ability to integrate new information with existing knowledge to solve a problem, make a decision or realize there is no clear cut answer. Frick (1992) sees library instruction as being successful when it enables the user to apply learning in one area to new problems and includes the skills of critical thinking in the information gathering process. McCrank (1992) sees information literacy as an abstraction, an ideal and an interlocking set of skills and knowledge that is characterized by an ability or behavior rather than a specific content domain. The American Library Association’s User Instruction for Information Literacy Committee adopted a definition that information literacy is the ability to find, evaluate and use information effectively in personal and professional situations (American Library Association, 1991).

There remain some question as to agreement on what library instruction should consist of. The Association of College and Research Libraries task force on Bibliographic Instruction established guidelines but not structure (McCrank, 1992). There is little
definition of standards for the proliferation of programming in bibliographic instruction (Altan, 1989). Current practices and techniques used in library instruction indicate there is no agreement on what, how and when to teach the research process. There is agreement that research on currently used practices and methods needs to continue and that new methods need to be tried and evaluated as to their contribution to the field.

Information Literacy Goals

Teaching information literacy has to go beyond the confines of the classroom (McCrank, 1992). The library is an open system which can allow open exploration and discovery, self-paced learning, and access to unlimited resources both in and out of the library. Libraries should act as gateways to other libraries and other kinds of information resources. An information literacy program should be holistic including programming before formal instruction. It should be full-scale, reach across the curriculum and be comprehensive. Technology should be used as a means to an end, not an end in itself. The program should have breadth and depth and allow for varying levels of accomplishment with the goal of lifelong learning as a base.

Information literacy can absorb older narrower concepts of library instruction and expand to broader concepts of literacy. Information literacy should allow the migration to in-depth, discipline specific research. The program should be holistic so that there is cross over into many fields. The program should consist of basic principles and thought processes. Communication skills which encompass oral, written, and vocabulary skills should be addressed through the student’s interaction with searching procedures.
Information is an abstraction; it expands the classroom walls; it is both cyclical and progressive; and it stresses individual, self-paced education. Libraries and librarians should be in the mainstream of the educational process and should contribute to new knowledge. Information literacy should be a goal of all liberal arts or general studies education (Miller, 1989).

Empowerment of Learners

Collins and Takacs (1993) discuss the relationship of information literacy to lifelong learning. Reference service in an academic library endorses the philosophy of enabling users to become self-sufficient in the library (Sullivan & Campbell, 1991). Students must understand the capabilities and limitations of information technologies and they must know how to evaluate the information they find (Euster, 1987). Librarians will assume the role of expert information literates, well above the level of the information literate person. The user should know how to interact with the expert. Librarians will become interpreters, counselors and knowledge engineers designing expert systems for the user (McCrank, 1992).

Holden (1990) discusses teaching methodologies, emphasizing that students need to perform the task themselves and they need to be able to transfer it to many situations. In a survey conducted by Lynn and Bacsanyi (1989), students selected on-demand individual instruction as their most preferred mode of training. This supports the concept that instruction is most effective when it meets the need of the user. Self-paced, individualized instruction falls into this effective mode of instruction.
Information Literacy Skills and the Curriculum

In a response to A Nation at Risk (1983), it was stated that libraries could play a role in the Learning Society and it was recommended that librarians be actively involved in curricular design (Alliance for excellence, 1984). Although the library was not mentioned in A Nation at Risk (1983), the report called for reform in education that would lead to lifelong learning. The response to A Nation at Risk (1983) by the American Library Association pointed out the importance of the library’s role in the educational reforms that were called for.

Lenox and Walker (1993) proposed a learning environment in which students can acquire information processing skills, abilities and understanding. Students must learn a process in which they are able to question, control, sort, store and retrieve large quantities of data. Students need to become critical thinkers and creators and users of information. Information must be recognized as fluid and dynamic and students need to learn how to interact in this environment. Information literacy becomes a set of complex, integrated, higher level skills. Curriculum developers must include the vast array of available resources in new and existing programs. Rather than accumulating facts, students need to know where and how to find the information they need when they need it. Students should know that information is a valuable commodity that is subject to policy issues that could limit or restrict access to information. Information literacy should be integrated across the curriculum so that students are equipped with the skills they will need to function in the workforce (Lenox & Walker, 1993; Nussbaum, 1988).
Summary of the Evolution of Information Literacy

Information literacy is now recognized as an essential element in the educational process for students at all levels. The ability to locate, evaluate and apply information is an activity students will use during their educational experiences and throughout their personal and professional lives. It is recognized that the library offers an opportunity to contribute to the information literacy skills of students which in turn will enhance the overall ability of students to continue to learn. Graduates will be entering a workforce that will undergo rapid changes. Information will continue to proliferate and technological advances will make information more available to all. The ability to access, critique and use information has become a basic skill needed by all.

GENERAL EDUCATION

Instruction in information literacy skills can have a far-reaching impact on the general education attributes of students. Using the computer to search for, locate and process information is a practical way of applying computer skills (Kuhlthau, 1987). Information skills are information based, broad in scope and draw on all levels of cognitive processes of knowledge, comprehension, application, analysis, synthesis and evaluation. They are enabling skills. Students need to be guided in the development of thinking skills where they bring ideas to a practical conclusion (Kirk, 1987).
Critical Thinking

Critical thinking skills can be related to the library search process in that thinking critically involves learning what questions to ask, when to ask them, and knowing how much evidence is needed to determine the validity of a statement (Bodi, 1988). Critical thinking is the “process of determining authenticity, accuracy, and worth of information or knowledge claims or arguments” (Ennis, 1962). Most definitions of critical thinking include the ability to assess reliability of information, distinguish between fact and fiction, identify hidden assumptions, and recognize bias, logical fallacy, and irrelevance (Totten, 1990). McCormick (1983) advocates the role of the library in teaching critical thinking skills. Students need to know that what they do with the information they find is the important element.

Teaching critical thinking skills through the process of evaluating resources is recognized as a part of library instruction (Bodi, 1988, Engeldinger, 1988, Knapp, 1966; Oberman-Soroka, 1980; Plum, 1984 Wesley & Werrell, 1985). Students need to be guided to a state of skepticism where they question the authority and objectivity of a resource (Engeldinger, 1988; Finster, 1988; Meyers, 1986; McMillan, 1987; Perry, 1970). Library instruction should go beyond the “how to” of searching and address the evaluation and uses of information. Students will learn to view different sides of an issue and determine which view is most tenable (Bodi, 1988).

Indiana University Southeast moves students through an exercise dealing with periodical articles in which they are exposed to a variety of articles ranging from tabloids
to scholarly journals (Totten, 1990). Students answer questions about the articles to evaluate the information presented in the article. Students are prepared to apply the general principles learned in this exercise to other research projects.

Summary of Information Literacy and General Education

The literature is clear on the relationship between information literacy skills and higher level skills such as critical thinking. The location, evaluation, use and communication of information involves high level cognitive abilities. These skills are the skills that are transferable to a variety of learning experiences and enhance overall learning capabilities. Students entering the workforce in this century will have an advantage if they have developed the skills that allow them to self-direct their learning on a continual basis.

ACRL MODEL STATEMENT OF OBJECTIVES FOR ACADEMIC BIBLIOGRAPHIC INSTRUCTION

A task force within the Association of College and Research Libraries Bibliographic Instruction Section revised the 1979 model statement to reflect current thinking (ACRL, 1987). The goals of the model are to provide a framework for the assessment and development of bibliographic instruction for a variety of user groups within the library. The goals focus on conceptual processes rather than tool specific or institution specific detail.

The model consists of a set of general and terminal objectives which describe the general processes when gathering information. General objectives describe the overall
goals of the programs and terminal objectives breakdown the overall objectives into specific discrete measurable results. The model covers how information is identified and defined by experts; structured; intellectually accessed; physically arranged and accessed. The model addresses all types of user groups, does not order objectives as to difficulty, contains a glossary, incorporates technological advances, and includes evaluation of resources.

The model is applicable to community college students as it is directed to a variety of user groups. The model is to be applied by following the guidelines suggested for use of the model: define user group and level of sophistication; determine the purpose of instruction; determine relevant sections of the document; select relevant terminal objectives; create additional subpoints as needed; and develop enabling objectives.

Standards for Community, Junior and Technical College Learning Resource Programs

The Standards for Community, Junior and Technical College Learning Resource Programs (ACRL, 1994) in Section 5.5 call for an information literacy program that provides instruction in accessing and evaluating resources in a variety of formats. The literature was reviewed for current practices in library instruction at two-year colleges.

LIBRARY INSTRUCTION

Librarians have attempted to develop library instruction that addresses the user's needs, encompasses available technology and enhances the general skills graduates will
need in their personal and professional lives. Themes found throughout the presentations at the 1992 LOEX Library Instruction Conference include responding to user needs, active learning, transparent interfaces to information resources, remote access, affective aspects of learning, learning styles, inquiry/discovery learning, adult learning theory, and the impact of electronic resources (Shirato, 1993). A process of research is emphasized rather than the product of research.

User-based Instruction

Nahl-Jakobovits and Jakobovits (1993) proposed a library instruction system that is focused on active learning and critical thinking rather than tool-based. The focus of the system is on the needs and behaviors of information seekers in complex information environments. The model is composed of seven steps: needs assessment, defining goals and objectives, selecting formats and materials, devising test and evaluative procedures, constructing and teaching, analyzing and evaluating, and revising and recycling. This model moves toward the concept of information literacy in that it is based on active learning and critical thinking rather than tools.

Attitudes about the research process were found to be established through three levels of learning: orientation, interaction, and internalization. The interaction and internalization fix attitudes for the long term (Jakobovits, 1987). Sequencing instruction is important to learn attitudes that will transfer to other information seeking situations (Kuhlthau, 1987). Attitudes relating to information literacy need to be reinforced by being an integral part of an instructional program (Kuhlthau, 1987). Students need to know that the act of
gathering and using information is a process that evolves over time and involves several stages: initiating a research assignment, selecting a topic, exploring information resources, forming a focus, collecting information and preparing the presentation (Kuhlthau, 1987).

Academic bibliographic instruction is not an end in itself but rather a basis for teaching students to make effective use of information throughout their lives (Johnston & Clarke, 1992). At the community college, the library instruction program has to address the diverse nature of the student body and a variety of learning styles. The program should provide a variety of instructional options, several starting and ending points and individualized rates of advancement (Johnston & Clarke, 1992). Newer instructional technologies will allow more options for librarians and students to access and use information.

Active Learning

Gee and Breivik (1988) describe a good learning experience as being one which imitates reality, is active and individualized, meets a variety of learning styles, and occurs in a non-threatening environment. The library environment allows for an experiential method of learning such as that advocated by Kolb (1984). Kolb advocated beginning with a concrete experience and moving through a cycle of examining, explaining, and applying. This is a natural process that students can use in the research process to make judgments, establish their position on an issue and reach conclusions.

Active learning experiences which allow the student to interact with resources and information and to analyze and evaluate the resources they locate enhance critical
thinking, problem solving and decision making. Active learning allows the student to interact with the information and thus retain more. Research has shown that active learning is more effective at achieving higher cognitive objectives (Ridgeway, 1989). Students enjoy participating in learning and thus develop a positive attitude about the research process. For active learning experiences to be successful, there must be clear instructions, the students should keep notes as they proceed, and sufficient time should be allowed to complete the activity (Ridgeway, 1989).

**Summary of Library Instruction**

Library instruction is seen as a way to address a variety of student needs, meet a variety learning styles and increase student participation in and responsibility for learning. The library is seen as an open system that can provide access to in-house resources and act as a gateway to other resources. The library offers an opportunity for a holistic approach to instruction. Students can interact with a variety of resources, develop self-directed learning techniques, work in a self-paced independent environment and enhance learning skills that are applicable to many situations. The library is now positioned to address the learning process from the standpoint of the learner. This has been occurring informally and now can be formalized as an integral part of the curriculum.

**RESEARCH IN LIBRARY INSTRUCTION**

University of Idaho (1993) librarians studied two methods of library instruction. Six English classes were taught under the lecture method and six classes were taught using active learning techniques. Pre and post tests of library knowledge and confidence were
given. The statistical analysis of the test results did not show any significant difference in the two methods. The active learning method involved small group work followed by individual students completing worksheets that were turned in and graded. Although there was no significant difference in the two methods of instruction, student comments indicated a preference for the active learning method. The most consistent comment across both methods was a request for more hands on practice. Students also indicated they would prefer being taught in a computer lab setting.

In a study of library users comparing those who received formal library instruction and those who did not, it was learned that those receiving the instruction had higher levels of self-assessed and actual knowledge than those who did not receive formal instruction (Fox & Weston, 1993). An assessment survey was developed to measure self-assessment of success in research tasks as well as actual research skills. Findings of the study included: students who participated in group bibliographic instruction had higher levels of library skills; course-integrated library instruction raises self-awareness, self-confidence, and some skill levels in the use of library resources and techniques; group instruction was effective at increasing skill levels for CD-ROM searching; highly focused library instruction does not necessarily produce higher levels of general library literacy; and further study in gender differences in self-confidence in using computers is needed.

Two surveys of students at Johns Hopkins University revealed the knowledge level of the library and resources of freshman and upperclassmen (Coupe, 1993). The study found that there were discrepancies between the two groups. The largest discrepancy was
knowing the location of current periodicals with upperclassmen outsoring freshmen. Upperclassmen were better informed about the online catalog. Both groups scored low in knowledge of Library of Congress call numbers. There was a low working knowledge of some basic concepts such as keyword searching and understanding the differences between book and journal citations. The surveys showed that mere exposure to the library does not enhance skills and that students are accurate at assessing their own library skills. No relationship was found between the frequency of visits to the library and the level of library skills. Studies by Kohl and Wilson (1986) found that effective library instruction should focus on process and how information is organized and accessed rather than concentrating on specific tools and smaller tasks.

In a study on the self-assessment of library skills by students, it was learned that there was no higher level of proficiency when freshman were compared with seniors (Greer, Weston, & Alm, 1991). There was little difference in test score results regardless of the primary influence and the authors felt that these results called into question the current library instruction practices. The authors felt there should be a basic core of library skills that would enhance the student-librarian interaction. Students felt they were successful based on what was asked of them for their classes although the success may come at the expense of wasted time and effort. The authors felt that library instruction should allow students to engage in effective independent research. The study pointed out that much more bibliographic instruction is needed but when, by whom, under what circumstances and with what content remains in question.
In a study of the information search process of high school students, it was learned that students were confused, tired and bored at the start of a research project; confident, confused and tired at mid-point and tired, confident and relieved at closure (Kuhlthau, 1989). It was noted that the students' confidence rose as the project progressed and as their confidence rose, their papers became more focused. A conclusion from this study is that more attention needs to be paid to search strategies that approach information seeking holistically.

Nofsinger (1989) surveyed academic libraries in Washington State to determine if academic libraries provided library instruction to high school students. One result of the survey revealed that 34% of the responding institutions provided instruction to high school students. Twenty percent of the responding community colleges reported providing instruction to high school students. Most instruction (93%) was provided after being requested by high school personnel. The most prevalent method of instruction was a tour sometimes followed by a lecture on subject resources. Handouts, handbooks and self-guided tours were used but few libraries used video or other non-print media to introduce library resources. The authors recommend improved communication between school and academic librarians; increased outreach activities; state guidelines for cooperative programs of information literacy; the sequential teaching of library skills to facilitate the transferability of skills; inclusion of information literacy skills in teacher preparatory programs; and inclusion of information skills in basic courses.
Summary of Library Instruction Research

Research on current library instruction indicates that there is still some question as to the effectiveness of some of the current practices. The research did reveal that there is a need to make any instruction relevant to the users' needs. The research also revealed that user attitudes are important in the instructional process. Users have to feel comfortable in their environment if learning is to be productive and effective. Students indicated a preference for individual assistance and active learning experiences. Research such as this combined with research on learning theory will provide a base for the development of effective library instruction.

LIBRARY INSTRUCTION PRACTICES

A program on information literacy to meet the information demands in the medical field was developed for nursing students (Fox, Richter & White, 1991). It was found that with information rapidly changing in the nursing field, students should be taught learning strategies rather than facts and that they should be able to locate and use information in problem solving situations. It was also determined that students would have to deal with a variety of informational formats ranging from print to sophisticated electronic resources. The students were assigned a research project with instruction being included on the location of clinical information, the flow of scholarly information, and research proposal writing.

O'Hanlon (1991) presents a technique for library instruction that works back from the end product. Students analyze the resources used in finished papers and articles.
O’Hanlon sees this as a way to address the anxiety (Kuhlthau, 1988; Mellon, 1984) often felt by users and a way to help users plan their own project. Students examine the references used, refer back to the text where that information was cited, and trace how the author located the resources.

MacAdam (1990) presents a technique for teaching Communications students at the University of Minnesota. Much of the information used by these students is secured from sources other than those in the library. This extends the students research strategy beyond the library showing them that the library can serve as a resource center and as a gateway to other resources. Students use a problem solving approach in their research process. In the exercise on locating biographic information, students learn how information is generated, transmitted and retained. They learn that the amount and extent of information depends on the fame of the individual being researched. Students begin to build a general model of information gathering that can be applied and modified to other situations.

The library at the University of Arizona joined in a campus-wide movement toward active learning to change student attitudes toward library research and help them achieve higher order cognitive skills (Williams & Cox, 1992). Active learning will move students away from the absorption of information from others to self-directed independent inquiry. Students are given a case study and asked what questions they would have to answer to complete the report. Questions are analyzed and students determine where they might look for answers with some leading to the library and others to other appropriate resources. Further analysis of the problem-solving approach will be conducted.
Developmental-instruction theory holds that success in fostering intellectual growth depends on the degree of personal interaction in the educational process and that the first year of college is crucial in tapping students' potential to grow intellectually (Finster, 1988). While librarians have provided bibliographic instruction programs and prepared library resource manuals, few faculty have been involved in a process that would support library-centered learning (Moran, 1990). A library centered method would match the developmental needs of students by allowing a flexible, individualized curriculum. Students would be experiencing a world similar to the one they would face after college where they will be making decisions on their own. Students should be aware that a great deal of learning takes place outside the classroom.

Coughlan (1989) describes a method of library instruction used with an adult learner study group at the SUNY Empire State College where the average age of the students is 37. Students were engaged in hands-on experience and recorded their search strategies in a journal. The format of the instruction was a learning contract. Students were involved in individual learning projects and traditional methods did not meet their needs.

Gibson (1989) presents alternatives to the term paper. He bases his suggestions on Ennis' (1962) critical thinking goals: development of specific objectives for each assignment; building in the necessity for clarifying assumptions; encouraging multiple perspectives on an issue; and the retention of relevant information for the decision. Assignments have students identifying multiple perspectives and evaluating authorities,
doing research on the basis of case studies, and examining how different disciplines differ in their treatment of an issue.

Adams and Morris (1985) address a variety of approaches for teaching library courses for credit. They discuss the orientation of the course: level of student, required or elective, origin (department sponsored, independent), dependent, general or course-related, and independent study. Planning the course involves setting overall goals, analyzing goals, deriving objectives, selecting a model, developing assignments and tests, and writing a syllabus. Development of materials includes assignment directions and worksheets, diaries and journals, search projects, and problem oriented assignments such as case studies, reading materials and handouts. Independent study courses should follow the same guidelines with emphasis on the student as an active learner. Evaluation should measure what was taught and results should be used to improve the course.

Jakobovits and Nahl-Jakobovits (1992) studied user comments to determine what happened during the research process. Students were asked to articulate their thoughts when they went to the library, the emotions experienced while there, the obstacles encountered, equipment and strategies used, how they solved problems, and whether they consulted librarians. Students reported a new realization of the library's usefulness in their academic work. The student reports were increased by asking them if using the library was relevant to them personally, how they went about finding what they needed, what problems they encountered, if they noticed any materials they would like to read in the future, if their attitude toward the library had changed, and if their library research for their
final paper was different than the first. The analysis of the student reports helped the librarians develop user-based objectives, helped students avoid common errors, helped librarians understand user thinking, and aided in the preparation of better signs, guides and instructions. The combination of positive affective and cognitive behaviors yielded productive sensorimotor skills. Librarians gained insight into the world of the user.

**Summary of Library Instruction Practices**

Current techniques in instruction indicate that librarians are utilizing a variety of techniques to make the instruction effective and productive for the student. Methods include attempts to address the needs of students in information intensive fields such as nursing, unique approaches such as starting with an end product and working backwards, extending research beyond resources housed in campus facilities, assuring student participation in the research process, addressing the needs of non-traditional students, developing alternatives to traditional library projects, and using user self-analysis of the research process to develop more relevant instructional opportunities. Librarians are analyzing and evaluating their own instructional techniques and are integrating their findings with established research on learning theories.

**LIBRARY INSTRUCTION IN THE COMMUNITY COLLEGE**

In a response to Thomas Eadie's (1990, 1992) proposals on the ineffectiveness of library instruction, the ACRL's Community and Junior College Libraries Section (1993) addressed library instruction in the community college. They agreed that there is a need for more evaluation of bibliographic instruction in order to improve the programs. They
feel the librarians need to be proactive in anticipating user needs, that library skills need to be incorporated into the whole educational process, and that the instructional approach should follow adult education practices by incorporating a variety of instructional approaches (ACRL, 1993).

Affleck (1992) studied the current practices in library instruction at community colleges. She studied the proportion of U.S. community colleges that teach information literacy, require library instruction in various forms, and have written goals for the instructional programs. The study also addressed the structure and content of the programs as well as the evaluation methods. The results showed that 94% of the colleges responding offer bibliographic instruction as defined by the ACRL Standards for two year colleges. In the area of information literacy which stresses both location and evaluation of information resources, the findings were less clear. Most respondents defined their purpose as teaching students to access information with less emphasis on discrimination among resources. Only 34% checked critical thinking or evaluation as an instructional goal and only 28% indicated their programs included teaching students to critically evaluate search strategies and the authority of information resources. The majority of the colleges had programs that were not part of the required curriculum and took the form of single sessions taught at the request of the faculty. Only 25% of the responding colleges had written goals for their programs and 54% indicated they had formal evaluation processes. In the area of adaptation for remedial and vocational students, 32% of the responding colleges indicated no adaptation for remedial students and 70% reported no
adaptation for vocational students. The author felt that the most important finding was that while the librarians indicated support for their formal instructional role, only one-third of the colleges included library instruction as part of the curriculum.

Blandy (1989) discusses library instruction at Hudson Valley Community College. Library competencies are built into English composition classes and library research is an integral part of liberal arts classes. Library assignments emphasize both content and skills, cover both scholarly and current topics and have requirements that are carefully spelled out. Librarians and faculty work together on library assignments to assure availability of resources and to build independent learning skills. Assignments are evaluated and revised as feedback indicates. Librarians can provide access to resources that can enliven instruction, extend horizons, and support independent learning, inquiry and discovery.

Chattanooga State Technical Community College addressed library instruction by assuring that instruction time is productive (Houck, 1992). It was determined that librarians were trying to pack too much into instructional sessions so the content of the sessions was pared down and configured to address specific assignments. Routine skills are addressed on demand by staff stationed in areas where help with resources or equipment is needed. Preparation of materials for classes is shared to reduce time spent on this activity. Several staff members are involved when students engage in hands-on activities with computer resources. Finally, classes taught were limited to four per day.

The emphasis at the community college library is on currency of information and innovation in delivery systems (Anderson & Fischer, 1992). Technology has made
information as accessible to community college students as students at senior colleges and universities. The focus of library instruction should be on identifying and locating information in a variety of formats. Community college librarians must meet the needs of college transfer students, vocational/technical students and remedial students. Knowing the demographic makeup of students at the college helps librarians design instructional activities that meet the needs of the variety of students at the institutions.

Johnston & Clarke (1992) looked at studies (Beristain, 1985; Janney, 1986; Niemeyer & Lawson, 1988) to determine the trends in library instruction at community colleges. The results indicated that orientation tours, course-related lectures, individualized instruction at the reference desk, and print/nonprint point of use programs are the most prevalent modes of instruction. Instructional content centered on procedural and location orientation, introduction to basic library tools such as the catalog and reference works, and introduction to specialized materials. The lecture measure was favored because it is the most economical method. Informal comments from faculty and students as well as observation of users are the most prevalent evaluation techniques. Institutions using self-paced approaches to library instruction report that scheduling is sometimes a problem for students but the method allows them to reach a large number of students (Adams & Morris, 1985).

Summary of Library Instruction at Community Colleges

Library instruction in the community college is less clear than at senior level institutions. Research indicates that library instruction emphasizes location of resources
and not higher level skills of critical thinking and application of information. There is a need for more evaluation on library instruction in community colleges. Reports indicated that library instruction is not required as part of the curriculum. The nature of the diversity of the student body was an issue with little adaptation of library instruction to the needs of non-traditional students or to vocational and remedial students. The lack of staff was frequently a problem but the advent of technological advances was seen as offering opportunities not previously available to community college librarians and students.

**IMPACT OF TECHNOLOGY ON LIBRARY INSTRUCTION PROGRAMS**

New information technologies require the re-examination of how students are taught and how information is made available (Moran, 1990). New technologies have the capacity to allow every student to be an active learner and support the concept of a library-college. The quality of education can be measured by the resources available for learning and the extent to which students are encouraged to become independent, self-directed learners (Boyer, 1987).

Kuhlthau (1987) states that computers have transformed the traditional means of producing, storing, organizing and gaining access to information. Students must learn competencies that allow them to locate and use information throughout their lives. Definitions of information literacy include the ability to access, evaluate, and use information to answer a question, solve a problem or meet an informational need (Breivik, 1985; Kuhlthau, 1987).
The convergence of computing technology and telecommunications was the catalyst for the information explosion. Information has changed the way decisions are made and has caused demands for new skills in the workforce. An information ecosystem is developing in which there will be information rich and information poor. Information literacy is a precondition for one to be able to function in the information age. Resource based learning will support the individual development of the skills needed by students and adults in today’s society. Students will be active participants in learning. They will be learning how to learn and laying the foundation for the process of continual learning.

The information environment has become both simpler and complex (Lowry, 1990). It has become simpler in that information systems are being designed for users and more complex in that there are many choices with a variety of structure, mechanics and purpose. A course in the Humanities and History Division at Columbia University Libraries was designed to train graduate students in the world of electronic resources and to develop the research skills that will be needed in the changing world of information. The course expands traditional library instruction to include personal information management, systems of scholarly communication, and computer-assisted research. Students write an essay analyzing the research process, discussing and analyzing resources, and indicating the implications of the research process in their own scholarly research. Librarians need to develop expertise in computer-based databases, electronic publishing, the use of electronic networks, and analytical software.
Summary of the Impact of Technology on Library Instruction

Technological advances in information resources have opened up new possibilities for instruction in information literacy at community colleges. Resources that were not available at two-year colleges are now accessible. The playing field has been leveled and community college students now have equal access to information. These advances and availability in information technology present both opportunities and challenges for community college librarians. The demand for their time and expertise will increase and they will have to rethink current practices in providing library instruction to students. Librarians at community colleges will have to make the transition to the technology environment while still meeting the demands of a diverse student body.

RESOURCE-BASED LEARNING

Cull (1991) studied the impact of a change in student attitude toward a resource-based history course. Student attitude toward the resource-based program was favorable with 98% responding favorably. Students were actively involved in a variety of learning activities. Resources included the use of realia, class trips, and visits by resource persons. The wide variety of resources allowed for differences in rate and style of learning and learner confidence. Students develop independence and see the relationship between classroom and the outside world. Resource-based learning allows the interaction of the student with a variety informational resources. Resource-based learning programs can address individual differences in learning style and rate, offer opportunities for exceptional
students, and familiarize students with a wide range of materials and technologies (Partners in Action, 1981).

Dependency created by traditional schooling can be reduced allowing the teacher to become a facilitator of learning (Hancock, 1993). Information literate workers will view learning as a process and will be more productive and flexible workers. Information literate students engage in active, self-directed learning. They interact with a rich range of resources, communicate an understanding of content, pose questions about what is being learned, use the environment, people and other resources for learning, reflect on their own learning, assess their own learning, and take responsibility for their own learning. Teachers involve students in complex tasks that stretch the students beyond the classroom and the textbook.

Information literacy thrives in a resource-based learning environment. Students reach beyond their own institution to resources in the community. Resource-based learning addresses a variety of learning styles and interests. Information literate students realize there are many resources available to them. Every student does not need to use the same resources. Students need to know information is packaged in many ways and they need to be critical users of information. Information literate citizens know how to use information in their personal and professional life and make informed decisions. They become lifelong learners who value the importance of information in their lives. Workers who are information literate can gather, synthesize, interpret and evaluate information. They will
be prepared for the rapidly changing world of work and for the career changes they will face.

**Competency Based Instruction**

Competency based training results in a student being able to show evidence or demonstrate competence of a skill at a stated level of performance under specified conditions (Burnheim, 1991). Libraries must focus on a redefinition of learning resources so that users can focus on skills and competencies that are developed through the use of resources. Specified information literacy skills and research process competencies should be part of the curriculum. Competencies to be included are formulating and analyzing an information need, identifying and locating information, evaluating resources, recording and storing information, interpreting information, presenting findings and evaluating the research process. Delivery of competency based instruction should include learner defined needs, learner-specified course or topic needs, learner-selected time and place of learning, and exit certification of competence. To fully participate in this process, library staff need to be knowledgeable about curricular development and instructional dynamics.

**Summary of Resource Based Learning and Competency Based Instruction**

Information literacy instruction is naturally resource-based learning. The library is in the best position to utilize and support the concept of resource-based learning. The development of technology-based resources makes the opportunities for instruction even richer. Boyer (1987) strongly advocates resource-based learning for college students and sees the availability of resources as a measure of the quality of educational experiences.
The availability of a variety of resources assures equal educational opportunities for all students. This is especially important for community college students who span the gamut of student demographics and abilities, but have no less a need to be information literate than traditional students. They need to be competitive with graduates of other educational institutions in the workforce and in senior level educational programs.

Library instruction also lends itself to competency-based learning activities. Students can interact with resources and demonstrate their ability to access, evaluate and apply the information they have amassed. Assuring that students meet specified competencies enhances the likelihood of their both retaining the skills and applying them in other situations.

EDUCATIONAL REFORM

Boyer (1987) addresses undergraduate use of the library in a report on undergraduate education. He calls for the integration of resources into the educational mainstream. He criticizes the low use of libraries and presents a challenge to librarians to link the library to the classroom. In an assessment of how academic libraries are addressing the themes found in the educational reform documents, Martell and Ware (1988) conclude that academic libraries are not acting differently. The authors offer suggestions of how academic librarians can be more integral to the educational process.
Moore (1990) reviewed publications to discern the aims of colleges in student outcomes. Outcomes found throughout the works include critical thinking, ability to make inferences, effective communication, problem solving ability, capacity for continued self-directed learning, informed decision making ability, and ethical decision making. All of these abilities can be used and enhanced through an information literacy program.

Euster (1987) discusses what is needed to make students information independent. The user needs to understand how information is generated, how to evaluate information critically, how to scale the universe of information to a particular need, and how to evaluate the cost-effectiveness of the research in terms of time, money and convenience.

**Summary of Information Literacy and Educational Reform**

Libraries are positioned to participate in educational reform through the inclusion of information literacy skills in the educational programs of undergraduates. The ability to access and utilize information is essential to the college graduate who will enter a world that will change continually. The educational process needs to shift to being learner-centered and the learner has to be responsible for his learning and build skills that will allow him to continue to learn. Educational reform literature calls for active learning, resource based learning experiences, process oriented learning, teacher facilitation of learning, learning how to learn, and student responsibility for learning. All of these activities happen naturally in the library.
PERFORMANCE-BASED INSTRUCTION/EXPERT SYSTEM

Vogler’s (1991, 1992a, 1992b, 1992c, 1992d, 1993a, 1993b) expert system for curriculum development assists the developer in configuring performance based instruction. Performance instruction is the planning, delivering and evaluating of learning and teaching (Vogler, 1991). The computer-based system is embedded in CourseBuilding, LessonBuilding, and ExamBuilding applications software. The system allows the curriculum developer to design the course, develop lesson plans, and create test items. While the software provides the infrastructure for the development of the syllabus, the developer has the option of over-riding any default built into the system.

Content Goals

The software guides the developer through the process of establishing content goals and performance objectives. CourseBuilding software is designed with defaults which equate time and lecture credit with a three hour semester course having three hours of in-class time and six hours of out of class learning time. Individualized modules require nine hours of student learning time. The system assists in the syntax of the content goals to assure clarity. The content goals specify the outcomes expected of the learner and the syntax is based on a verb, a direct object and adjectives.

Content goals are sorted on the basis of domain/level, frequency/difficulty, purpose and chronology. The developer codes the domain as cognitive, psychomotor, or affective. Level is specified as simple or complex with domain and level being linked to the verb in the content goal. The frequency and difficulty levels established for the goals are used in a
matrix that can help determine which content to keep and which to remove from the course. The purpose of the content is specified as foundation, crucial, remedial or enrichment. The purpose sort maintains instructional integrity and communicates the expectancy levels of the course.

The chronology sort specifies whether certain content should come before other content. If there is no prerequisite content, then it can be configured by preference. The result is a mapping of the course showing the horizontal or vertical configuration of the course. The vertical objects are prerequisites while the horizontal represent preference. A horizontally configured course is more flexible than a vertically configured course.

The performance objective details the quality, quantity, efficiency, durability standards and specifies the conditions under which the evaluation will take place. The quantitative phrase is generated from the direct object in the content goal by transforming the verb to the past tense. The qualitative phrase is created by transforming the action verb to a noun and specifying the basis for measuring performance. The syllabus is generated as the final step in building the course and is based on earlier decisions made by the developer. The format is built into the software and the user is prompted to input the information for the syllabus.

Learning Experiences

The software determines the starting point based on the chronological sort performed in CourseBuilding. LessonBuilding is used to develop learning experiences that will allow the student to accomplish the content goals. The developer is prompted to consider
instructional strategies that will stimulate and maintain student interest. The developer then selects learning experiences through which the learner accomplishes the performance objectives specified in the course. Since modules are developed for individualized, self-paced instruction, there is no need to determine instructor practices or delivery methods.

**Individualized Modules**

Vogler’s (1991) system allows for the development of learning modules as well as traditional instruction. Modules are intended to guide the learning process. Modules allow the learner to engage in a self-paced, individualized learning experience. This method is especially relevant to a course in information literacy. One of the goals of information literacy is to allow the learner to engage in self-guided, learner centered activities. The learner assumes responsibility for his acquisition of knowledge because he is confident in acquiring the information needed to reach his goal. The modular approach to learning reinforces learner-centered learning.

In an information literacy course, the student will be acquiring skills that enhance his ability to assume responsibility for his own learning. By doing this under a modular learning experience, the student will be enhancing his ability to control his own learning process because he is learning in an environment where the student makes decisions and choices about the learning experience based on the student’s needs and abilities. Information literacy is best approached through a modular setting since the skills the student is developing are of a high order and individual abilities, skills, and educational background will impact the rate of progress and depth of knowledge gained.
Evaluation Scheme

ExamBuilding (Vogler, 1993) allows the developer to build an evaluation system that is criterion based. Learners must be evaluated to insure that they have acquired or can use specific knowledge, skills, and affect before exiting the course. Performance instruction allows performance testing that is compared to the performance objective standards established in the syllabus. The purposes of evaluation, evaluation of performance, stimulation and reinforcement of learning and evaluation of instructional effectiveness, are achieved with the assistance of the ExamBuilding software.

Exam item types, (a) true/false; (b) matching; (c) multiple choice; (d) completion; (e) short answer; (f) essay; (g) skill test; (h) affective, are created on the basis of the content goal taxonomy associated with the verb in the content goal. The software suggests the item type best suited to the content goal. Testing techniques and strategies are embedded in the software. The reading level is defaulted in the software and if a test item exceeds the reading level default, the expert system prompts the developer to make a decision to override or adjust the test item.

Summary of Performance Based Expert System

Planning, the key to performance instruction, is built into the software to assure the production of effective and efficient performance instruction. The system is content driven with the instructor being in control of the content to be included and evaluated. The syllabus contains the essence of the course content so that students, faculty, administrators, and counselors know what the course contains. Learning activities and
assignments are contained in the lesson plan/module. The exam ties the packages together so that what was planned was delivered and what was delivered was evaluated.
CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

The design of the study is described in this chapter. The research procedure sought consensus from a panel of experts on the course content for an information literacy course for community college students. The formulation of the panel is described. The development of the survey is defined. The methods employed for analysis of the surveys are discussed.

DESIGN OF THE STUDY

The study was an action study. Possible content goals for an information literacy course were identified through the literature and were based on the definition of an information literate person arrived at by a panel of experts (Doyle, 1992a). Content goals were identified or developed for all of the attributes contained in the definition of an information literate person. The content goals were developed using the syntax of Vogler’s (1991) Performance Instruction expert system. A panel of experts on information literacy was identified. A survey containing the goals was designed and distributed to the panel of experts. Results of the input were analyzed and the ratings of the content goals by the panel were used to establish the content for a three credit course on information literacy for community college students.
Table 1. Attributes of an Information Literate Person

<table>
<thead>
<tr>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognizing the need for information</td>
</tr>
<tr>
<td>Recognizing that accurate and complete information is the basis for intelligent decision making</td>
</tr>
<tr>
<td>Formulating questions based on information needs</td>
</tr>
<tr>
<td>Identifying potential sources of information</td>
</tr>
<tr>
<td>Developing successful search strategies</td>
</tr>
<tr>
<td>Accessing information sources including computer-based and other technologies</td>
</tr>
<tr>
<td>Evaluating information</td>
</tr>
<tr>
<td>Organizing information for practical applications</td>
</tr>
<tr>
<td>Integrating new information into an existing body of knowledge</td>
</tr>
<tr>
<td>Using information in critical thinking and problem solving</td>
</tr>
</tbody>
</table>

Note. From Doyle, 1992a, p. 57.

IDENTIFICATION OF THE CONTENT GOALS

The framework for the identification of content goals was the definition of an information literate person formulated in 1992 by the panel of experts (Doyle, 1992a). The attributes are listed in Table 1. The literature on the evolution of information literacy as a concept was also instrumental in identifying content for information literacy.
instruction. Content goals were identified by reviewing the literature on current practices in academic bibliographic instruction. The Association of College and Research Libraries (1987) Model Statement on Academic Bibliographic Instruction was reviewed for the purpose of identifying content goals relevant to information literacy instruction. Where no specific goals existed relevant to the attributes of an information literate person, the developer formulated goals.

POPULATION AND SAMPLE

A panel of experts on information literacy was identified for this study. The selection of the sample was purposeful. The panel of experts identified for this study was derived from two areas. Some experts were chosen on the basis of their having participated in groups studying the concept of information literacy or defining an information literate person. Persons who had served on both major panels on information literacy: American Library Association Presidential Committee on Information Literacy (1989) and the Panel that developed information literacy outcomes based on the National Education Goals of 1990 (Doyle, 1992a) were identified and comprised the basis for the selection of experts. The experts selected represented all levels of education from elementary through higher education, business and industry, state education systems and leaders in the field of library education.

Experts were also drawn from community colleges. Directors of Learning Resource Programs at League for Innovation Colleges were asked to complete the survey. They were included to represent current practices in library instruction in the community.
<table>
<thead>
<tr>
<th>College</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeAnza College</td>
<td>California</td>
</tr>
<tr>
<td>Delta College</td>
<td>Michigan</td>
</tr>
<tr>
<td>Central Piedmont Community College</td>
<td>North Carolina</td>
</tr>
<tr>
<td>Seattle Community College District</td>
<td>Washington</td>
</tr>
<tr>
<td>Monroe Community College</td>
<td>New York</td>
</tr>
<tr>
<td>Santa Fe Community College,</td>
<td>Florida</td>
</tr>
<tr>
<td>Miami-Dade Community College</td>
<td>Florida</td>
</tr>
<tr>
<td>St. Louis Community College</td>
<td>Missouri</td>
</tr>
<tr>
<td>Humber College of Applied Arts and Technology</td>
<td>Canada</td>
</tr>
<tr>
<td>Moraine Valley Community College</td>
<td>Illinois</td>
</tr>
<tr>
<td>Kirkwood Community College</td>
<td>Iowa</td>
</tr>
<tr>
<td>Johnson County Community College</td>
<td>Kansas</td>
</tr>
<tr>
<td>Kern Community College District</td>
<td>California</td>
</tr>
<tr>
<td>Sinclair Community College</td>
<td>Ohio</td>
</tr>
<tr>
<td>Maricopa Community Colleges</td>
<td>Arizona</td>
</tr>
<tr>
<td>Cuyahoga Community College</td>
<td>Ohio</td>
</tr>
<tr>
<td>Dallas County Community College District</td>
<td>Texas</td>
</tr>
<tr>
<td>Lane Community College</td>
<td>Oregon</td>
</tr>
</tbody>
</table>

There are eighteen community colleges that are members of the League because of their innovative instructional programs and uses of technology in instruction. The
League schools provide national coverage and represent the largest, most comprehensive community colleges in the nation. A list of League for Innovation Community Colleges is listed in Table 2.

A total of 34 experts was identified for the study. Eighteen were from League for Innovation Community Colleges and 16 experts were selected from those who served on one or more panels that were instrumental in developing a definition of information literacy or establishing outcomes for information literacy. The panel configured represented all levels of education, business and industry, and community college library instruction.

**TREATMENT AND TREATMENT PROCEDURES**

The treatment in this study was the use of a panel of experts on information literacy to validate content for a course in information literacy to be developed for community college students. A computer based system was used to develop the course after the content was established. The system was Vogler’s IPSI curriculum development software which guides the developer through a systematic development of an instructional package that assures that what is planned is taught and what is taught is evaluated (Vogler, 1991).

The procedure for the study was to identify a panel of experts, survey them for input on course content, evaluate the results of their input, configure an individualized, performance based course, and produce a syllabus and lesson plans for the course. The results of the survey completed by the panel of experts were evaluated in a systematic way to assure no bias in analyzing the results. The course content was based on those results.
and was configured according to Vogler’s matrix of frequency and difficulty of content goals (see Figure 1).

**INSTRUMENTATION**

The survey was designed to solicit input from the experts on content for a course in information literacy. The content goals were worded according to Vogler’s Performance Instruction (IPSI) curriculum development software. The goals were developed to reflect student outcomes. The pattern for the content goals was an action verb indicating an action by the student followed by a direct object which represents the element the student acts upon. Adjectives are placed between the verb and the direct object to qualify the activity.

The panel was given a list of potential content goals for information literacy instruction and was asked to rate the goals as to frequency and difficulty. The panel was asked to rate difficulty and frequency on the basis of “high” or “low”. Frequency referred to how much the student would use the skill in future studies or career activities. Difficulty referred to how difficult the goal would be for community college students to achieve. An option was provided for panel members to indicate that the goal should not be included or that they did not know how to evaluate the goal. The panel was also asked to suggest additional or alternative goals that were student-centered and included skills and knowledge needed for students to become information literate.
The survey was mailed to the experts. Two mailings and a facsimile were issued. The experts were asked to complete the survey and return it by a specified date. The survey instrument appears in the Appendix A.

DATA COLLECTION PROCEDURES

This study was conducted November 1994 through February 1995. Surveys were mailed to the panel of experts initially in November with a follow-up mailing to non-respondents in December. A final contact was made by facsimile to non-respondents of the first two mailings. Panelists were informed of the reasons for their inclusion and the intent of the survey to solicit their input on course content.

The results of the expert input were analyzed and the course was developed according to Vogler's computer-based curriculum development software. Modules were developed based on the content validated by the panel of experts. The course modules are included in Appendix B.

METHOD OF ANALYSIS

The analysis of the data collected was done through a frequency count. Responses by the experts on the difficulty of the content goal for community college students to achieve and the frequency that the students would use the goal in future academic pursuits and/or career activities were recorded and tabulated. The content goals were ranked according to the difficulty of the content goals as indicated by the percentage of the respondents that rated the goal difficult for community college students to achieve. The panel was also
asked to indicate the frequency of use of the content goal by community college students. These results on frequency of use were tabulated by counting the number of experts rating the content goal “high” or “low” as to frequency of use.

The results of the ratings by the panel determined the content of the course. The goals received a rating for frequency and difficulty that placed them in a matrix that allowed the developer to configure the content of the course. Course content was configured according to Vogler’s IPSI curriculum development process. Content for a course is built according to the ratings of the content goals as to frequency and difficulty (See Figure 1).

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>FLDL</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Least important content</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>FHDL</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Most important content</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FHDH</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Second most important content</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FLDH</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Third most important content</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1. Content Goal Matrix**

Percentages of the respondents indicating difficulty were tabulated and goals were ranked from highest percentage of respondents indicating difficulty to the lowest difficulty.
percentage. The percentage ratings were arrived at by dividing those responding “high” to
difficulty by 27, the number of possible respondents. The frequency rating was
determined through a count of the experts indicating high or low. After the percentage
rating on difficulty and the count on frequency were calculated, each content goal was
given a designation that placed it in the matrix illustrated in Figure 1.

The content goals were listed according to the percentage ratings on difficulty. The
goals were split at midpoint based on the number of goals. In this case, the split was after
the 36th goal in the percentage rating. Those goals falling above that split were placed in
the top of the matrix indicating high difficulty. Those goals were then assigned a rating
for frequency based on the number of experts indicating high or low frequency which
placed them in the appropriate cell in the top half of the matrix. Those goals falling below
the split were placed in the lower half of the matrix indicating low difficulty. They were
placed in the appropriate cell according to the frequency assignment given them by the
experts.

Course content was initiated with those content goals receiving ratings of high
frequency, low difficulty (FHD). Content was added next from the content goals
receiving ratings of high frequency, high difficulty (FHDH). The next content goals to be
included in the course were the goals falling in the low frequency, high difficulty cell
(FLDH). Content goals receiving low frequency, low difficulty were not included in the
course.
The developer evaluated the results to determine if the results indicated content for a one, two or three credit course. The number of goals required for a one, two or three credit course is fifteen, thirty and forty-five respectively. Credit determination was based on the total number goals falling in the categories of FHDL, FHDH, and FLDH. Goals ranked FLHL are goals that the student can learn on his own or will learn as a result of the rest of the content of the course. Ties in any category were looked at on a case by case basis and in relation to their place in the ratings and their relationship to the rest of the course content.

Development of the course was based on Vogler’s IPSI curriculum development software. Content of the course was based on Vogler’s CPA Model (Vogler, 1991). Content is sorted according to the difficulty and frequency ratings of the content goals. The frequency/difficulty sort assists the developer in determining how much, what, and what not to teach. The goals are placed in a two by two matrix (see Figure 1). Content falling in the top half of the matrix must be covered in the course. After the content goals were determined, the developer used the computer-based system to develop the course. The software assisted the developer in maintaining consistency of format and content by guiding the developer through a systematic approach to course development. The software assisted the developer in selecting the domain of the content and the learning theory associated with the content goal. The developer was guided through syllabus configuration and lesson plan development. The developer was also provided with an
analysis of the course content on domain level, difficulty of content and purpose of content.

**SUMMARY**

The study was designed to allow experts on information literacy to validate the content for a course for community college students in information literacy. Potential content goals were identified and worded according to Vogler's iPSI Performance Instruction expert curriculum development system. A survey was designed to solicit expert opinion as to the inclusion, difficulty, and frequency characteristics of the content goals. The results of the survey were determined by frequency count and percentage ratings of the difficulty of the content goals by a panel of experts. A course in information literacy was developed based on the validated content and on Vogler's curriculum development system.
CHAPTER 4

FINDINGS

The general purpose of the study was to develop a competency-based information literacy course for community college students. This chapter presents the findings from this study. The potential content goal development is discussed. The response to the survey is discussed. The results of the expert ratings of the content goals as to inclusion, frequency and difficulty is presented. The composition of the course in information literacy based on the response of the experts is presented.

A total of 72 content goals were identified or developed based on the attributes of an information literate person. The goals were identified through the literature review on current practices in library instruction. The ACRL (1987) Model Statement of Objectives for Academic Bibliographic Instruction was also used in the development of the content goals. Goals most easily discerned from the literature and ACRL model statement related to traditional library instruction. The concept of information literacy encompasses a broader perspective than that of traditional library instruction. Goals beyond traditional library instruction were identified through the study of problem solving, resource based learning, general education, and educational reform literature. The content goals were worded according to Vogler’s Performance Instruction curriculum development system.
SURVEY RESPONSE

A total of thirty-four surveys were mailed on the first mailing. One additional follow-up mailing was issued to non-respondents. A final facsimile transmission was issued to those still not responding. The two mailings and faxed initiatives resulted in 28 responses. Twenty-four of the 28 surveys were completed and usable. One institution returned 4 completed surveys, one from the intended recipient and 3 which were completed by members of the professional library staff. These responses were included in the ratings of the content. This decision was based on the fact that those completing the survey in addition to the intended respondent were professional librarians and were from a large comprehensive community college which approximates the profile of League for Innovation Colleges. Another factor in the decision to include these respondents in the analysis was the lower response of the community colleges as compared to the other experts. The additional surveys presented no problems in interpretation.

Response to the survey from the intended recipients was 82.35%. The percentage of usable surveys was 85.7. The number of usable surveys was 24 out of 28. The three additional surveys from a single institution resulted in a count of 27 instruments being usable for statistical purposes.

The experts who chose not to complete the survey stated lack of time, lack of knowledge of community college education, or suggested another person to contact. The respondents who suggested others to complete the survey selected experts already on the
list of those being asked to respond. The panel consisted of experts from League for Innovation Community College Learning Resource Programs and others who had served on previous groups defining or developing outcomes for information literacy. The response from the League colleges was 14 of 18 for a 77.77% response and 14 of 16 information literacy experts for a response of 87.5%. The combined response to the survey was 82.35%. By including the additional completed surveys from librarians, the percentage of community college library representation increased from 73.6% to 94.4%.

There were no problems indicated by the experts in completing the survey. Three of the respondents suggested additional content and this was included in subgoal activities in the course. Several experts wrote comments on the survey. Those comments referred to the fact that students would be forced to think as they moved toward achieving the content goals. Positive comments were also directed toward the inclusion of critical thinking concepts. One respondent particularly liked the idea of including the idea of addressing the presentation method and format. Several requested the findings. Several offered encouragement to proceed with the concept. A few respondents included articles and reports on information literacy and one included information on their information literacy program.

**DATA ANALYSIS RESULTS**

The general purpose of the study was to develop a competency-based information literacy course for community college students. Course content was validated by a panel of experts. The results of the survey in which the panel of experts on information literacy
<table>
<thead>
<tr>
<th>Goal #</th>
<th>Content goal</th>
<th>Percent</th>
<th>Matrix position</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Develop research plan</td>
<td>92.59</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Formulate research questions</td>
<td>85.19</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Plan problem solution</td>
<td>81.48</td>
<td>2</td>
</tr>
<tr>
<td>52</td>
<td>Organize research results</td>
<td>77.78</td>
<td>2</td>
</tr>
<tr>
<td>72</td>
<td>Predict information literacy importance</td>
<td>70.37</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>Describe research problem</td>
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were asked to indicate the frequency and difficulty of potential content for a course in information literacy for community college students are presented in Table 3 and Table 4. The panelists evaluated each content goal on the basis of high or low difficulty for community college students and high or low frequency of use by the students in future academic and/or career activities. The panelists were also given the option to indicate that the goal should not be included or that they did not know how to evaluate the content goal.

For purposes of configuring the course content according to Vogler’s curriculum development system, the goals were ranked in order of difficulty on the basis of the percent of respondents who indicated the content goals were high in difficulty. The results of that ratings are presented in Table 3. In addition to the percentage ratings, the experts indicated high or low use (frequency) of the content goal in future activities. This is recorded in Table 4. These two attributes allow the content goals to be placed in a matrix that is used to determine course content. The position of the goals in the matrix (See Figure 1) is also indicated in the last column of Table 3. The rating is indicated by a four letter code. A content goal that has been ranked as being “high” in frequency and “low” in difficulty would be assigned a code of FHDL. This would place the content goal in the first cell of the matrix. Content goals falling in this cell are the most important content to be included in a course. Content inclusion can be determined by giving the content goals ratings as to frequency and difficulty and determining where they fall in the matrix.
The results of the analysis of the survey instrument on frequency and difficulty are summarized in Table 4. The first column indicates the number of the goal on the survey instrument. There were 72 goals on the survey. The content goal, worded according to Vogler's system requirements, is listed in the second column. Frequency and difficulty ratings are indicated in the next two columns.

Analysis for this study started with determining the percentage of respondents indicating high difficulty for each content goal. Goals were listed in order of the percentage of experts indicating difficulty from the highest to the lowest (see Table 3). Content goals were then assigned a rating on frequency based on the number of respondents indicating high or low frequency. This was determined by counting the high and low responses on frequency with the majority determining the assignment of high or low (see Table 4).

After being listed in percentage rank order of difficulty, the content goals were split in half to determine which goals fell into the top half of the matrix. These thirty-six goals would be high in difficulty and essential to course content. Those falling below the split would fall into the bottom half of the matrix. These goals would be low in difficulty. Following this determination, the goals were assigned their frequency rating as indicated by the experts. Each goal had received code of difficulty (high or low) and a code of frequency (high or low). It was then possible to place the goals in one of the four cells in the matrix. Finally, content goals were given a matrix cell location of 1, 2, 3, or 4 on the
basis of the frequency and difficulty results. Cell assignments are indicated in the last column of Table 3.

Course content was developed on the basis of the matrix placement. On the basis of the findings, 11 goals fell into cell 1 (FHDL). These are the most important content to include in the course. Twenty goals fell into cell 2 (FHDH) and were included in the course content. Fourteen goals fell into cell 3 (FLDH) and were included in the course content. These three groups of goals totaled 45 indicating that a three-credit course could be configured. The optimum number of content goals for a three credit course is 45.

The developer addressed tied ratings on a case by case basis. It was decided not to devise a system to break the ties since the course was easily configured on goals that received clear ratings. It was decided to include two goals with a tie in the frequency rating because one was ranked high in difficulty and it was an affective goal. The literature indicated that the affective aspect of library instruction was an issue that had been discerned in several studies. The other goal was also ranked high in difficulty and was essential to the logic of the course. The other goals that fell into tied categories were eliminated from consideration because they could be learned by the student on his own or would most likely be picked up through other course content. No goals receiving a rating of low frequency, low difficulty (FLDL) were included in the content because they can be learned by the student on his own or learning will result in conjunction with other course content.
Forty-seven content goals were identified for inclusion in the course on the basis of the ratings by the experts and the matrix (see Figure 1) analysis of Vogler's curriculum development system. The analysis allowed the developer to develop a three credit course in information literacy for community college students.

Summary Of Findings

The general purpose of the study was to develop a competency-based information literacy course for community college students. Three research questions were addressed in achieving the purpose of the study:

1. What are the content goals for information literacy skills for community college students?

2. How are the goals rated as to frequency of use and difficulty by a panel of experts?

3. Given the ratings by the panel of experts on the frequency of use and difficulty, what are the validated, prioritized list of content goals?

The findings addressed the three research questions. Thus, the results of the study formed the basis for the course content and allowed the developer to develop a three-credit, individualized, performance-based course on information literacy. The general purpose of the study to develop a competency-based information literacy course for community college students was achieved through the findings of the study.
Content Goals

The attributes of an information literate person (see Table 1) were used and expanded to 72 goals which were rated by the panel of experts as to difficulty and frequency. Content goals were identified through the literature and through the ACRL (1987) Model Statement of Objectives for Bibliographic Instruction. Content goals are listed in Table 3 and Table 4.

Frequency And Difficulty

The panel of experts rated the goals on frequency of use by community college students in future academic and career pursuits and on how difficult the goal would be for community college students to achieve. The combination of the frequency rating of high or low and the difficulty rating of high or low placed the content goals in the matrix (Figure 1) which allowed the developer to determine which goals should be included in the course. Using the ratings and the matrix, forty-seven goals were identified for inclusion in the course on information literacy. Thirty-six goals fell in the top half of the matrix indicating high difficulty and thirty six goals fell in the lower half of the matrix indicating low difficulty. The goals were placed in the appropriate cell within the matrix when the frequency rating was added. Matrix placement is indicated in the last column of Table 3.

Validated Content Goals

Eleven goals fell into cell 1 of the matrix which identifies the most important content for instruction with ratings of high frequency, low difficulty (FHL). Twenty goals fell
into the second cell which indicates the second most important content in a course with ratings of high frequency, high difficulty (FHDH). Fourteen content goals fell into the third cell which identifies the third most important content for a course with ratings of low frequency, high difficulty (FLDH). The developer included two other goals that were tied in the frequency ratings. Their inclusion was based on high difficulty, logic of the course content and the affective domain level. Goals rated low in frequency and low in difficulty were not included in the course content. A total of forty-seven goals was identified. Goals in Table 3 with a rating of one, two or three in the Matrix position column were included in the course. A listing of the course content goals is included in the syllabus for the course in Appendix B.
CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

The general purpose of the study was to develop a competency-based information literacy course for community college students. To achieve this, potential content goals for the course were identified or developed based on the definition of an information literate person (Doyle, 1992a), a panel of experts on information literacy and community college learning resource programs was identified, an expert system on curriculum development was selected, and a survey to solicit the input of the experts on the content was designed.

Based on the results of the ratings by the information literacy experts, a course on information literacy was developed using Vogler's IPSI performance instruction expert system. A three credit, semester length course was developed. The course was designed as an individualized, performance-based program. Procedures in Chapter 3 were followed and the manifestations of these is a performance-based course. The course which includes a syllabus, fourteen modules and an evaluation scheme is in Appendix B.

Response to the survey was good (82%), ratings by the experts were consistent and the developer was able to develop a course consistent with the attributes of an information literate person previously identified (Doyle, 1992a). Course content as rated by the experts supported the premise that information skills are broader than library instruction but encompass skills in using library resources. This is consistent with the literature
review on the relationship between information literacy and general education skills such as critical thinking and decision making.

While a few experts did not complete the survey because of time or lack of knowledge of the community college student, there was no indication that such a course should not be developed for community college students. Interest in the results was high. Suggestions from the experts for additional goals were included in the course in subgoal activities. There were no negative reactions to the survey or the idea of developing the course. The experts represent community colleges nationwide as well as individuals from various education levels and business and industry.

RECOMMENDATIONS AND IMPLICATIONS

This study validated content for a three credit, self-paced, individualized course in information literacy for community college students. This course represents a movement to formalize the learning that takes place in learning resource centers. It is a movement toward student-centered learning that is resource based, active, and directly related to the higher order skills students and workers will need throughout their careers.

While the study resulted in a validated course on information literacy for community college students, several issues emerged as a result of the study:

1. This study used validated content to develop a course on information literacy. The developer was able to develop a three-credit course in information literacy based on validated content. The course was designed to be an individualized,
self-paced course. This type of instruction should be investigated as a viable alternative for community college students. It is recommended that future research investigate the impact of self-paced, individualized instruction on the community college student. It needs to be determined if this method of instruction could be used more broadly in the community college curriculum and if this method of instruction could be used in combination with traditional instruction.

2. The study established the close relationship between general education skills and information literacy skills. It is recommended that research be conducted that establishes the role of information literacy instruction in the acquisition and development of general education skills. It could be established that some of the skills that program developers find difficult to build into technical and vocational programs could be acquired through information literacy instruction. The community college curriculum should include general education skills. The curriculums should be analyzed for duplicate skills. Then, general education skills should be placed in the learning experience where they are most effective. Information literacy instruction addresses many general education skills and attributes.

3. The study revealed that research has determined that little adaptation of existing library instruction has been made for remedial and vocational community college students. It also emerged through the survey that information literacy
skills would be difficult for students with English as a second language. It is recommended that research be conducted to determine the place of information literacy instruction in vocational and remedial programs and for students in ESL programs. While this course was designed for community college students in associate degree programs, the course may be applicable to other students in all community college programs at the post-secondary level. No attempt was made to address specialized programs such as remedial instruction and ESL programs. As they are valid functions of the community college, research should be conducted on the information literacy needs of students in these special programs.

4. The study revealed that the affective domain is important in the research process. Several studies indicated that although library skills did not improve dramatically with instruction, the students’ attitude about libraries and librarians did improve following instruction. The content of the course that was developed includes several content goals that deal with the affective domain. It is recommended that further analysis of the affective domain in the research process be conducted. Research should be conducted to determine the relationship between attitude about libraries and information professionals and the research process. The interaction of the user and the information professional will be on a different level as information technology developments make information more accessible to all. This changing relationship between
information professionals and users points to the need to study the affective aspects of the research process and the interaction between information professionals and information users.

5. In the ratings of the content goals by the experts, several of those falling in the low frequency, low difficulty area were concerned with the packaging of the information by the student. With the advent of user-friendly presentation software, media services to students and students’ awareness of new technologies, there should a way to allow students options for packaging and presenting research projects in a variety of formats. It is recommended that inclusion of instruction in presentation methods for students be investigated. Students in many fields will be called upon to present findings to a variety of audiences. They should be given the opportunity of mastering and applying a variety of techniques to package project results. Students should be given the opportunity to use non-traditional formats in the presentation of their projects.

6. The response of the panel of experts to the study indicated that there was support for proceeding with the development of a course in information literacy. The literature review revealed that information is a commodity that will be accessible to many and will require evaluative and interpretative skills to access and apply. It was also indicated throughout the literature that educational reform measures include the migration from the teacher/instructor content
provider to facilitator in the learning process. **It is recommended that** information literacy skills be incorporated into teacher education programs so that educators are information literate and capable of utilizing information in the instructional process and teaching information skills to students.

7. The technological advances made in computers and telecommunications mean that community college libraries can now provide many of the resources that were previously available only at senior research institutions. This puts additional requirements on staff at community colleges which are smaller than those at senior level institutions and serve a diverse population with varying needs and varying abilities. **It is recommended that community colleges establish guidelines for information literacy as part of the curriculum for all associate degree students.** Information will impact the fields community college graduates enter constantly. Students should know how to utilize information in their career areas and they should know how to use information to help them adapt to an ever-changing workforce. The ability to locate and evaluate information will benefit the students in their professional careers and will help them make decisions as citizens of their community.

8. The study revealed that users exhibit apprehension and anxiety when faced with research projects. The proliferation of information will cause the student/user to interact frequently with information professionals. It is important that
information professionals know how the user approaches information and how the student/user views the informational professional in the search process. **It is recommended that research be instituted to analyze how the user looks for information and how he determines he needs assistance.** This information will become more important as resources such as the Internet and other online services make information available to everyone. The user will need assistance in using the resources effectively and efficiently. The information professional will have to redefine his role in the search for information. Research on the user and his approach to locating and using information will be needed as both users and professionals interact with information.

9. Librarians are faced with more options and challenges in coping with information than ever before. The advances in technology make more information available to everyone. Librarians are and will be called on to assume new roles in the world of information. **It is recommended that librarians adopt and support the concept of information literacy in the broadest sense and move to assure that information literacy is part of every student’s educational experiences.** Librarians should be leaders in seeing that information skills are incorporated in the curriculum and they should be active in defining their role in the information age.
COMMENTARY

The call for educational reform, the request for workers who are competent and know how to learn, the impact of technology on information proliferation and availability and the indications that occupations will change constantly are factors that every student and every educator must contend with every day. Some solid groundwork has been laid through research and analysis of the educational system and the learning process. While there is much to be done to understand how learning takes place and how learners learn how to learn, there is agreement among those who participate in the educational process to any degree that there is a need to move toward new methods and approaches to instruction.

Educators acknowledge that teachers at any level of the educational curriculum must become facilitators of learning. Content expands too rapidly for any one individual to keep pace. Several things could happen to address this phenomenon. A team approach to educating students could be implemented. A team of content expert, resource expert, instructional designer, and delivery specialist could develop educational experiences that promote student-centered learning. A migration toward learner responsibility for learning should be pursued.

Libraries and librarians have a vital role to play in educational reform that moves toward student-centered learning in which the learner becomes responsible for the learning that takes place. Librarians have practiced this method for years. Librarians have acted as facilitators and coaches in the learning process. They have done this because they have
not had a formal role in the development and delivery of educational experiences. This study points out that the role of information and the acquisition of information literacy skills directly address the suggestions found in the literature on educational reform.

Information literacy skills are general education skills. They cause students to think, evaluate, interpret and apply information to problems. These are the skills that students need to expand their knowledge base, accumulate new information, and learn continually. Librarians must be active participants in educational reform because they have developed the skills of a facilitator of learning and they practice the methods called for in all areas of education: active learning, student involvement, student responsibility for learning, resource based learning and individualized learning.

Library professionals are building a base of good research on the information skills and the learning process. While more research is needed on library instruction, librarians need to be embracing and advocating the role of information literacy in the learning process. Librarians need to broaden their concept of the role they have played and should play in the learning process. They need to engage in research that will demonstrate the impact that information skills have on the whole learning experience and how information skills can be integrated throughout the learning process.

Library professionals should not narrow the concept of their role in the learning process, but rather broaden their role to encompass the whole concept of information literacy. Research should concentrate on the impact of information skills on learning and on the inclusion of information skills in the learning process. Librarians are positioned
where it is recommended the rest of the education profession go. Library professionals should continue to move forward and formalize their position in the learning process and enhance the contribution they make to learning by seeing that the contribution they make to the learning process is effective and efficient. Formalizing should not equate with traditional teaching and learning practices. Librarians should establish and expand the methods that have positioned them where they are now.

While the study was designed to address students in associate degree programs at community colleges, the concept of information literacy and the goals validated in the study should not be limited to that population in practice. Half of the panel of experts was composed of non-library professionals. They represented a wide spectrum of education and business professionals. The content of this course is broad in nature and challenging in content. The findings in this study should serve as a base for further study of the role of information literacy skills across the educational continuum.
REFERENCES


100


University of Idaho Library. (1993, May) Poster session on teaching library skills to freshmen in English Composition classes.


APPENDIX A

Survey Instrument

Information Literacy Content Goals
INFORMATION LITERACY COURSE CONTENT

I am working on a research project for a doctoral dissertation at Virginia Polytechnic Institute and State University. The project is to develop a course in information literacy for community college students.

A list of content goals that might be included in a course on information literacy for community college students is attached. These goals are based on the attributes of an information literate person as defined by a panel of experts on information literacy. (Doyle, 1992, Development of a model of outcome measures for information literacy within the National Education Goals of 1990. Unpublished doctoral dissertation, Northern Arizona University, Flagstaff, Arizona)

Information literacy is defined as: the ability to access, evaluate, and use information from a variety of sources.

The attributes of an information literate person include:

- Recognizing the need for information
- Recognizing that accurate and complete information is the basis for intelligent decision making
- Formulating questions based on information needs
- Identifying potential sources of information
- Developing successful search strategies
- Accessing information sources including computer-based and other technologies
- Evaluating information
- Organizing information for practical application
- Integrating new information into an existing body of knowledge
- Using information in critical thinking and problem solving

I am asking a group information literacy experts and directors of community college learning resource programs to validate the elements that should be included in a course on information literacy for community college students. Your assistance in this project would be appreciated.

This course will be individualized, self-paced, and competency based. Students will be involved in independent learning experiences. The course will emphasize active learning and will allow the student to use a variety of library and community resources.
Performance objectives will be developed for each content goal and learning experiences will be developed that will engage the student in a variety of learning activities.

**DIRECTIONS FOR COMPLETING THE SURVEY:**

For each goal:

1. If the goal is appropriate for inclusion in a course on information literacy, proceed to steps 2 and 3.

2. Under **DIFFICULTY**, check high or low to indicate how difficult the goal will be for community college students to achieve.

3. Under **FREQUENCY**, check high or low to indicate how often the student will use the skill in future studies or career activities.

4. If the goal should not be included in the course, or you don't know, check the appropriate box -- DON'T INCLUDE OR DON'T KNOW.

5. Please suggest additional or alternative goals at the end of the survey.

Goals should be student-centered and should include the skills and knowledge needed to become information literate.

**Please return the survey in the enclosed envelope by December 1, 1994.**

Thank you for your assistance in this endeavor.

Carole Schultz  
7617 Timber Ridge Drive  
Charlotte, NC 28227

704-342-6883  704-342-6887 (Fax)
## CONTENT GOALS

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<td>69. Discuss ethical information use</td>
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<td>70. Relate information and lifelong learning</td>
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<td>71. Display information literacy appreciation</td>
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<td>72. Predict information literacy importance</td>
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APPENDIX B

Course Syllabus
IFL100

Information Literacy

COURSE DESCRIPTION

This course covers information literacy skills including the identification of an information need, the location of resources to address the need and the presentation of the research results.

Prerequisites:

The student should have basic knowledge of a word processing software package. The student will be required to use a word processor in preparing all work for this class.

The student should have ideas for a research project to be used in this class. The student should consult with faculty in the student’s program for assistance in identifying potential projects. The student will be required to secure the signature of a faculty member in the program area who will advise and/or assist the student during this course.

The student should have a valid college ID.

(3 Credit Course)

COURSE FOCUS

This course will focus on practical approaches to the location, evaluation and application of information resources in a variety of formats. The course will be an individualized, self-paced course which emphasizes active learning experiences.
TEXT AND REFERENCES

There is no text for this course. The student will be given a packet of materials and will be directed to other resources needed for the course.

COURSE GOALS

The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives (Addendum A).

1. plan problem solution
2. formulate research questions
3. describe research problem (Module 1, 2nd week; 30 points)
4. design research log
5. illustrate notetaking system
6. outline decision making process
7. develop research plan (Module 2, 3rd week; 40 points)
8. classify information types
9. categorize information providers
10. name government information providers
11. list resource credibility elements (Module 3, 4th week; 40 points)
12. label periodical citation elements
13. explain classification schemes
14. define library terms (Module 4, 5th week; 30 points)
15. perform online catalog search
16. view non-print formats
17. perform print index search
18. perform demographic database search
19. identify library resources (Module 5, 6th week; 50 points)
20. illustrate database structure
21. explain controlled vocabulary
22. contrast free text and controlled vocabulary searching (Module 6, 7th week; 30 points)
23. analyze electronic resource index
24. perform electronic index search
25. analyze full-text electronic resource
26. search electronic resources (Module 7, 8th week; 40 points)
27. list community resources
28. indicate specialized resources (Module 8, 9th week; 20 points)
29. explain Internet network
30. explain gopher servers
31. list Internet resources
32. access Internet resources (Module 9, 10th week; 40 points)
33. verify research results
34. organize research results
35. use word processing software
36. **present research results** (Module 10, 11th week; 40 points)
37. relate information and problem solving
38. relate information and lifelong learning
39. predict information literacy importance
40. **display information literacy appreciation** (Module 11, 12th week; 40 points)
41. write new inquiries
42. assess new learning
43. **critique research process** (Module 12, 13th week; 30 points)
44. **assess career information needs** (Module 13, 14th week; 20 points)
45. summarize information laws
46. associate information and citizenship
47. **discuss ethical use of information** (Module 14, 15th week; 30 points)

**STUDENT CONTRIBUTIONS**

The student is required to attend one of the course orientation sessions scheduled during the first week of the semester. Students should obtain the course syllabus from the circulation desk (ID required) and read the syllabus before attending the orientation session.

The student should bring questions about the course to the orientation session. This method of learning may be new to students. The student is engaging in a learning experience in which the student is actively involved in the learning process. The student also assumes the responsibility for progressing through the course and completing the exercises associated with each module. The student may seek assistance from the instructor on any matter pertaining to the course any time during the course.

The student will spend at least 9 hours per week completing requirements for this class. As this is an individualized course, the student assumes much of the responsibility for progressing through the course. The student should consult with the instructor any time the student needs assistance or has a question. The instructor is available during office hours, by phone and through Internet e-mail. The student should also utilize members of the reference staff for assistance during this course.
COURSE EVALUATION

Each module will be evaluated. The student should complete all of the exercises in each module. The student is to hand in the items indicated in the performance objective as the document of record. All other exercises such as "note", "list", "write a paragraph", "discuss", etc. are to be entered in the student's journal. These entries should be dated and the student should state the module and subgoal being addressed. The journal should be turned in with the documents of record for each performance objective.

This class is writing intensive. Students should record items in the student’s journal as if they were to be evaluated as part of the work for this course. The student should attend to grammar, spelling and neatness. The student should stay within the parameters indicated such as "one paragraph", "one page", "summarize", etc. The student should prepare what is requested such as "handout", "test", etc. The student should keep the journal up to date and review it frequently and make sure entries are documented to identify the exercise the entry refers to. If the student does not want to turn in the journal with each module, the student may copy the pages from the journal pertaining to the module that is due. The journal entries are the documentation that the student has addressed a content goal. Journal entries should include the date, subgoal topic, and activity number.

Journal entries and other items produced as a result of a subgoal activity will be worth a total of 5 - 10 points toward the total points for the performance objective.

If the subgoal topic requires preparation of an item such as a transparency or handout, the student is expected to hand that item in at the completion of the module. The subgoal topic and activity number should be on the item.

The student is working independently on the exercises. The student should seek assistance from the instructor and/or reference staff members as often as needed. The student may use any resources to assist the student in completion of the course requirements except another student’s work from this course.

The student's performance objectives and exams will be translated to points and the points to grades. There are 480 possible points and grades will be earned as follows: A=480 to 432, B=431 to 384, C= 383 to 360, D=359 to 336.

Point value of each module is listed with the content goals.
COURSE SCHEDULE

The class consists of 14 modules. This will allow the student to complete the course by completing one module per week. The student should assume a pace that allows the student to attain the goal of completing one module per week for 14 weeks of the semester. The course is designed to be completed in one semester.

Students will receive feedback on completed content goals within 48 hours of being turned in. Completed modules may be turned in at the instructors office or placed in the course IN BOX at the circulation desk. Graded modules may be picked up at the circulation desk. Students must show college ID to pickup graded modules.
ADDENDUM A

PERFORMANCE OBJECTIVES

3. The student will be allowed references. The student will describe research problem. Performance will be satisfactory if the student addresses content goals 1 and 2 and writes a concise, focused statement of the research problem which describes the problem and lists the component parts in the sequence they will be addressed. The description of the problem should indicate that the problem will allow the student to complete the requirements of the course. The document of record is the written statement of the research problem with the appropriate signatures. This performance objective is worth 30 points.

7. The student will be allowed references. The student will develop research plan. Performance will be satisfactory if the student addresses goals 4 - 6 and produces a research plan in outline form which indicates how the student will address the questions formulated in Content Goal 2. The plan should include a list of what information the student needs to answer the research questions. The documents of record are the student’s outline of the decision making process and samples of recording and notetaking systems. This performance objective is worth 40 points.

11. The student will be allowed references. The student will list resource credibility elements. Performance will be satisfactory if the student addresses goals 8 - 10, produces a list of resource credibility elements, and analyzes the credibility of 2 periodical articles and 1 book. The student should explain how the student used the credibility elements in evaluating the three resources. The documents of record are the list of resource credibility elements and the results of the analysis of three resources using the credibility elements. This performance is worth 30 points.

14. The student will be allowed resources. The student will define library terms. Performance will be satisfactory if the student addresses goals 12 and 13 and produces a list of 25 terms related to the library. The definitions are to be developed by the student and written in the student’s own words so that the student and any other student who reads the definitions knows what the term means. The document of record is the list of terms with definitions. This performance objective is worth 30 points.

19. The student will be allowed references. The student will identify library resources. Performance will be satisfactory if the student completes goals 15 - 18 and prepares a bibliography of library resources that relate to the topic
the student is researching. The student should list the resources according to MLA specifications. The student should examine the resources and indicate if they are relevant to the topic the student is researching. The student should substantiate relevancy by indicating which research question(s) the information will address. The documents of record are the bibliography and the printouts the student produces and the student’s statement of which research questions the resources address. **This module is worth 50 points.**

22. The student will be allowed references. The student will contrast free text and controlled vocabulary searching. Performance will be satisfactory if the student addresses content goals 20 & 21 and produces 2 searches from a database. The first search should be searched as a free-text term in the database and then as a controlled vocabulary term. The printouts should include the number of resources found using the two techniques and the first five resources produced from each search. The documents of record are the printouts. **This performance objective is worth 30 points.**

26. The student will be allowed references. The student will search electronic resources. Performance will be satisfactory if the student addresses content goals 23 - 25 and produces printouts from 2 electronic resources, one bibliographic and one full-text. The bibliographic search must relate to the research topic. The full-text search should relate to the research topic unless no information is available on the topic from a full-text database. The documents of record are the printouts from the electronic resources. **This performance objective is worth 40 points.**

28. The student will be allowed references. The student will indicate specialized resources. Performance will be satisfactory if the student addresses content goal 27 and identifies and produces a handout on special collections or information resources at 3 of the following locations: public library, college or university, museum, research center, civic organization, and/or identifies experts who are sources of specialized information. The handout should provide information on the location of the resource, a brief description of the resource, contact person if applicable, access to and availability of the resource and any two items the student found interesting about the collection or resource. The document of record is the handout produced by the student. **This performance objective is worth 20 points.**

32. The student will be allowed references. The student will access Internet resources. Performance will be satisfactory if the student addresses goals 29 - 31 and produces a list of addresses of ten resources the student accessed through the Internet and a brief description of the resources. The student should indicate if any of the resources were relevant to the student’s research
The document of record is the list of resources accessed, the addresses and a brief description of the resource. **This performance objective is worth 50 points.**

36. The student will be allowed references. The student will present research results. Performance will be satisfactory if the student addresses goals 33 - 35 and produces a written report on the research topic. The report should include the problem statement and a paragraph on each research question summarizing the information the student found that addressed the research questions. The summary on each research question should contain substantive information on the topic. The student should write a final paragraph summarizing the research findings on the topic. A list of the resources used in answering the research questions should be attached to the research results. Resources should be listed according to MLA specifications. The document of record is the written report on the research topic. **This performance objective is worth 40 points.**

40. The student will be allowed references. The student will display information literacy appreciation. Performance will be satisfactory if the student addresses goals 37 - 39 and lists three reasons why information literacy is a basic skill everyone should acquire. The student should direct the reasons to fellow students telling them why they should enroll in this course. The document of record is the student’s listing of three reasons why information literacy is a skill everyone should acquire. **This performance objective is worth 40 points.**

43. The student will be allowed references. The student will critique research process. Performance will be satisfactory if the student completes goals 41 and 42 and completes the questionnaire on the research process. The document of record is the completed questionnaire. **This performance objective is worth 30 points.**

44. The student will be allowed references. The student will assess career information needs. Performance will be satisfactory if the student interviews three professionals in the student’s field to determine their information needs and develops a plan for the student that indicates how the student will deal with new and changing information in the student’s field. The document of record will be the student’s plan to keep up to date on information in the student’s career area. **This performance objective is worth 20 points.**

47. The student will be allowed resources. Performance will be satisfactory if the student addresses content goals 45 & 46 and develops an information code of ethics. The code should indicate that the student comprehends the
appropriate use of information in the student’s career area. **This performance objective is worth 30 points.**

Developed/Revised: 04/9/95
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LR 203  
704-342-6883  
Carole_Schultz@cpcc.cc.nc.us

IFL100  
Information Literacy  

MODULE FOR CONTENT GOAL:  
describe research problem

INSTRUCTIONAL TOPIC  
describing research problem

PREREQUISITE(S)  
plan problem solution  
formulate research questions

DIRECTIONS FOR MODULE 1  
Assignments for this module are due by Saturday of the 2nd week of the semester.  
Completed assignments may be left at the instructor’s office or at the Library  
Circulation Desk. Graded assignments will be available at the Circulation Desk  
within 48 hours of being turned in.

INTEREST APPROACH  (time: 5 minutes)

How would the student like to start on a trip without knowing where the student is  
going? Doing research without first carefully defining the problem and the  
information needed will end the same as the trip -- the student won’t know where  
the student is going, how to get there or when the student is there, and the student  
will probably run out of gas! The student wants to use the student’s time  
productively and efficiently. In order to do that, the student will have to do some  
planning. That way the student will know where the student is going, how the  
student will get there and when the student has arrived. In this project, the student  
will know what the problem is, what the student needs to know to address the  
problem and how to determine if the student found what was needed.
PERFORMANCE OBJECTIVE

The student will be allowed references. The student will describe research problem. Performance will be satisfactory if the student addresses content goals 1 and 2 and writes a concise, focused statement of the research problem which describes the problem and lists the component parts in the sequence they will be addressed. The description of the problem should indicate that the problem will allow the student to complete the requirements of the course. The document of record is the written statement of the research problem with the appropriate signatures.

STARTING POINT PRE-TEST  (time: 0 minutes)
No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST
No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: plan problem solution.  (time: 180 minutes)

1. The student will locate and record 5 definitions of the word “problem”. The student may use dictionaries, articles or books to find the definitions. The student should write a definition of “problem” in the student’s own words. (Record definition in journal) (Reference Collection)

2. The student will study the handout on problem/topic breakdown. (Attached)

3. The student will list the topics/problems being considered for this course. The student will select 2 of the topics and break them into smaller parts or subtopics. The topic should be capable of being broken down into 4 or 5 subtopics. The purpose of the subtopics is to narrow and focus the main topic.

4. The student should arrange the subtopics in the order the student plans to address them. The student should ask the questions: What do I need to know first? What do I need to know next? and so on until the student has placed the subtopics in an order that will allow the student to reach a conclusion about the topic. The student should be sure the subtopics are appropriate and will move the student in the direction of a conclusion about the topic. The student should make any adjustments in the topic or subtopics at this time.

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5. The student should practice breaking topics into smaller parts. The student should select three topics of the student's choice and break them into smaller parts. (Record in journal)

6. The student should outline the steps the student took to break the topic(s) into smaller parts. The outline should be directed to other students who will have to go through this procedure.

**SUBGOAL TOPIC:** formulate research questions. (time: 180 minutes)

1. The student should ask 5 people what the word “research” means. The student should record the words the people use in connection with the term “research”. The student should also consult 3 dictionaries for definitions of research. (Record in journal) (Reference Collection)

2. The student should find 5 definitions of “information”. The student may use the same techniques used in exercise 1. (Reference Collection)

3. The student will ask 3 people what they would want to know about the topic the student has selected. The student should record the responses in the form of questions. The student should use these responses to check the subtopics the student developed. The student should note if any subtopics have been left out that might be important to the topic. (Record questions in journal)

4. The student will study the sample research questions in the course packet. (Attached)

5. The student will list the main topic and the subtopics. The student should develop questions that must be answered about each of the subtopics. There should be at least 2 questions for each subtopic and up to 5. If there are fewer than 2 or more than 5 for any subtopic, the student should narrow or broaden the subtopic. (Record in journal)

The student should keep in mind the question: What do I need to know about the subtopic so I can get the information to reach a conclusion about the main topic.

6. The student should begin a list of terms that are associated with the topic the student selected. These terms should be based on what the student now knows about the topic to be researched. This list will start out very small and should be expanded as the student progresses through the exercises. The student is developing the vocabulary associated with the topic. (Record in journal)

**SUBGOAL TOPIC:** describe research problem (time: 150 minutes)
1. The student will complete goals 1 and 2. The student will list the main topic, the subtopics, and the research questions the student developed. The student will write a statement of the problem which includes the main topic and the subtopics in the order in which they will be addressed.

2. The student will show the problem statement and the research questions to a librarian and obtain the librarian's signature indicating that the project is appropriate for this course and that resources are available in the library and the community.

3. The student will also obtain the signature of the faculty member who has agreed to assist/advise him on the project.

4. The student should review the directions for the course to this point and do a self-check on the topic selected, the subtopics identified, the research questions and the problem statement.

   The student should not proceed to the next module until the student has the signatures indicated above. Proceeding with an ill-defined problem or inappropriate problem will cause the student problems (and grief) throughout the course. The student should see the instructor for assistance on the assignments in this module.

**POST TEST** (time: 30 minutes)

The student will meet with the instructor to obtain approval of the topic and the research questions before proceeding in the course.

**REFERENCES AND RESOURCES**

Handout on problem breakdown (Attached to this module)
Sample research questions (Attached to this module)
Consult with reference librarians
Consult with instructor

**Developed/Revised: 04/9/95**
Problem Breakdown

Module 1

A problem indicates some discomfort. Something is not right, not working or something is not being accomplished, or something can not be completed. In the broadest sense, a problem points out the need to take some action. The action to be taken should be based on an analysis of the problem. The elements causing the problem are identified. Then it should be determined what role each element plays in the problem and how the elements should be addressed.

A problem is made up of smaller parts or subproblems. The first step in solving the problem is to break the problem into smaller parts and then analyze each part. This process is applicable to the research project that will be used as the basis for this course. The discomfort is the need to know more about a topic (problem). The first step is to determine what needs to be known. This is done by breaking the topic (problem) into smaller parts (subtopics). This allows the student to determine what needs to be known about the topic to address the lack of knowledge (discomfort) about the topic.

The diagram below shows the relationship between problem solving and the research process:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Discomfort</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Break into smaller parts</td>
<td>Need to take action</td>
<td>Break into subtopics</td>
</tr>
<tr>
<td>Analyze What part is contributing to the problem</td>
<td></td>
<td>Ask questions What needs to be known about each subtopic</td>
</tr>
<tr>
<td>Locate appropriate information</td>
<td></td>
<td>Interpret and apply information</td>
</tr>
</tbody>
</table>

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Look at alternatives based on information

Decide on best alternative --
What direction is information indicating

Solve problem Reaching a conclusion

The student should approach the research process as a problem. The problem (topic) is causing discomfort because the student does not have knowledge about the topic. The topic has to be addressed from some aspect. The topic is composed of smaller topics. If the smaller topics are addressed, the student will have knowledge about the topic (problem) and the discomfort will go away. The discomfort should go away temporarily because new information should lead to new challenges (problems) and further need for information (more discomfort). This is part of the learning process or continuum.

Now that it is clear that a problem exists and that the problem can be solved with information, the student should take action to move toward a solution of the problem or conclusion about the topic.

Below are some problems/topics that need to be addressed. The first step will be to break the problem/topic down into smaller parts.

Problem/topic 1: Buying a car

Subtopics
Cost
Fuel economy
Financing
Features
Repair record
Safety features
Resale value

These are some of the items to be addressed before purchasing a car.

Problem/topic 2: Selecting a career
Subtopics:
Interests
Abilities
Requirements
Salary
Advancement possibilities
Jobs available

Problem/topic 3: Analyzing a poem

Subtopics:
Author
Format
Background
Vocabulary
Symbolism

These three problems should provide some ideas on how to breakdown a problem/topic into smaller parts.

The student should practice breaking topics into smaller parts. The student should base the breakdown on what needs to be known to solve the problem or reach a conclusion about the main topic/problem.

The student may use the following topics for practice or choose the student’s own topics.

Buying a camera
Starting a business
Choosing daycare provider
Investing in a company
Planting a new lawn

The student should keep in mind the question: What do I need to know (what information is important) about the topic to reach a conclusion or solve the problem.
EXAM ITEM FOR CONTENT GOAL:
describe research problem (Content goal 3)

SKILL TEST ITEM -- Statement of research problem and signatures

1. The student is to be evaluated on the content goal: describe research problem. The rating will be based on performance on each of the items below.

The student:

A. describes the research topic
B. lists 3 - 5 components of problem
C. selects components that further define the problem
D. lists components in sequence that is logical and will lead to a conclusion
E. expresses statement in no more than 3 sentences.
F. selects problem that will allow student to complete exercises in the course
G. selects a topic for which resources are available
H. uses correct grammar and spelling
I. selects a problem relevant to career area
J. completes exercise is on time
K. uses correct grammar and spelling
L. obtains required signatures

No Yes
No Yes
No Yes
No Yes
No Yes
No Yes
No Yes
No Yes
No Yes
No Yes
No Yes
IFL100

Information Literacy
Module 1

EXAM ITEMS FOR CONTENT GOAL:
describe research problem (Content goal 3)

TRUE/FALSE

1. A problem points out the need to take some action.
   T   F
   Answer: True

2. The first step in problem solving is to take action.
   T   F
   Answer: False

3. Problems are made up of smaller parts.
   T   F
   Answer: True

4. Researching a topic and problem solving involve similar activities.
   T   F
   Answer: True

5. The purpose of breaking down a problem into smaller parts is to narrow the focus.
   T   F
   Answer: True

6. Research can be started before a plan is developed.
   T   F
   Answer: False

7. Research questions should lead to an answer or conclusion.
   T   F
   Answer: True
8. It is important to know the terminology associated with a topic to do an effective search.

T F

Answer: True

MULTIPLE CHOICE

1. Research is

_____ A process (Answer)
_____ Something only scientists do
_____ is best done without planning

2. A symptom of a problem is

_____ indigestion
_____ discomfort (Answer)
_____ easily recognized

3. The first step in problem solving is

_____ deciding the best solution
_____ breaking the problem into smaller parts (Answer)
_____ writing research questions

SHORT ANSWER

1. A problem is ____________________________.

ANSWER(S):

A. an indication of a need to move from where one is now to where one needs to go; need to move toward a direction or conclusion; uneasiness, discomfort; indication of a need for change.

2. Solution to a problem requires:

_________________________

_________________________
ANSWER(S):
A. information
B. decision making
C. planning

3. The most important thing in solving a problem is

---------------------

ANSWER(S):
A. information

4. The purpose of breaking a problem into smaller parts is

---------------------

ANSWER(S):
A. focus direction; make it manageable; refine it

5. The purpose of writing research questions is

---------------------

ANSWER(S):
A. determine what needs to be known about the problem to reach a decision or conclusion.

COMPLETION

1. Discomfort is caused by _________________.
   Answer: a problem

2. A problem should be broken into _________________.
   Answer: smaller parts

3. The breakdown of a problem into smaller parts should lead to _________________.

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Answer: a conclusion; a solution

4. A problem indicates a need to take _______________.
   Answer: action

5. A topic is broken into smaller parts called _______________.
   Answer: subtopics.
   _______________ determine what needs to be known about a topic.
   Answer: research questions

6. The student should develop a ________________ associated with the topic being researched.
   Answer: vocabulary; list of terms

7. Research is a _________________.
   Answer: process

8. Breaking a problem or topic into smaller parts makes it _________________.
   Answer: manageable; focused

ESSAY

Discuss the following elements as they relate to the process of analyzing a problem.

- breaking down problem or topic into smaller parts
- writing research questions

Answer: Student indicates that problem breakdown narrows and focuses the problem or topic so that it is manageable. Student indicates that research questions determine what must be learned to reach a conclusion or solution.
INSTRUCTIONAL TOPIC
developing research plan

PREREQUISITE(S)

design research log
illustrate notetaking system
outline decision making process

DIRECTIONS FOR MODULE 2
Assignments for this module are due by Saturday of the 3rd week of the semester. Completed assignments may be left at the instructor’s office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 3 minutes)

Now that the student has decided on the topic, subtopics, and research questions, the student must do some planning that will help the student get where the student needs to go. Before taking a trip, the student checks tires and oil, checks the weather so the student takes the right clothes, and takes care of other things that have to be done before the student can go on the trip and that will help the student enjoy the trip more.
PERFORMANCE OBJECTIVE

The student will be allowed references. The student will develop research plan. Performance will be satisfactory if the student completes goals 4-6 and produces a research plan in outline form which indicates how the student will address the questions formulated in Content Goal 2. The plan should include a list of what information the student needs to answer the research questions. The documents of record are the student's outline of the decision making process, and samples of recording and notetaking systems.

STARTING POINT PRE-TEST (time: 0 minutes)
No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST
No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: design research log (time: 150 minutes)

1. The student should develop a log for the topics given below. The log should contain the elements necessary for the student to recall what happened during the project, when it happened and special features surrounding the event. (Record in journal)

Nature Hike:

The student is to develop a log that the student would take with him on a nature hike. The student is to answer the question -- what would I record so that I can remember what happened on the hike and what I saw on the hike?

Buying a car

The student is to design a log that allows him to record the information the student gets from several car agencies. The log should allow him to record enough information so that the student can identify the best deal. The student should keep in mind --What information do I need to determine where I will purchase the car.

2. The student will design a research log. The object of a log is to allow the student to record in a consistent manner the events of this project. The log should allow the student to monitor progress and to backtrack if the student
needs to. The log should include a place for comments; i.e., the student’s
thoughts and feelings about the research project.

3. The student should test the log the student designed for the nature hike. The
student may use the log on campus or at another site suitable for a nature hike.
The log should be tested with at least 10 items to see if the information being
recorded is what the student needs. The information should allow the student
to recall and/or recreate the items observed on the hike. (Record in journal)

4. The student should design a log that the student will use to record information
about the research process. The log should contain dates and times, locations,
activities and any other items that will allow the student to track the student’s
activities and recreate the activity if necessary. The log is to serve as the
student's diary during this course. (Record in journal)

5. The student should prepare the log for use throughout the course. A notebook
is suitable.

The log will also be used for the notetaking system the student develops in the
next exercise.

**SUBGOAL TOPIC:** illustrate notetaking system (time: 150 minutes)

1. The student will develop a systematic method for taking notes on the resources
the student has found and on the information the student finds in the resources.
The system should be part of the student's log. The student should look at the
MLA Manual located in the reference area to develop the system the student
will use to record information about the resource the student has found. The
MLA Manual will give the student the elements the student should record
about the resources the student will find in this course. The student should list
the elements for books, periodicals, videos and interviews. If the student finds
other types of resources during this project, the student should consult the
MLA Manual to be sure the student records what the student needs about the
resource. (Reference Collection)

2. The student should prepare a guide that contains the elements the student
should record about the resources found in this course. The guide should be
placed in the student’s log so the student can refer to it in recording
information about resources. By using this method, the student can return to
any resource if needed.

3. The student should develop a system for recording the information the student
finds in the resources. The student will be recording information from the
resources that will help the student answer the research questions. The student should decide if the student will summarize the information the student finds, list the main points, or use an outline format. The system the student uses should allow him to record the information the student needs to answer the research questions the student formulated.

4. The student should practice the recording method for resources. The student should record information about one book, one periodical article and one video according to the MLA specifications. (Record in journal)

5. The student should practice the notetaking method the student developed. The student should read an article and take notes using the scheme the student developed. The student should review the notes from the article and evaluate the notetaking scheme. The student should evaluate the notetaking scheme on the basis of this exercise. The student should have notes from the article that can be referred to later and understood without returning to the resource. The student should make any adjustments in the notetaking scheme at this time. (Record in journal)

**SUBGOAL TOPIC:** outline the decision making process. (time: 180 minutes)

1. The student will go to the media center and view a video on decision making. The staff at the media desk will assist the student in finding the video. The student should practice the recording and notetaking scheme with this video.

2. The student will read 2 articles on decision making. The reference staff will assist the student in locating the articles.

3. The student will ask 5 people how they make decisions. The student may want to prepare questions about decision making to prompt those interviewed. The student should summarize what the people say. (Record in journal)

4. The student should read about the scientific method in a science encyclopedia. (Reference collection)

5. The student will produce an outline of a decision making process. The student will keep this outline in the student’s log and refer to it when the student has to make decisions related to the research project. The student should record in the student’s log, when and how the student applied the decision making process in this course. (Place outline in log)
6. The student should practice using the outline developed. The student should use the outline to illustrate how the student would make a decision. The student may use a situation that has already occurred or one the student anticipates in the future. (Record in journal)
SUBGOAL TOPIC: develop research plan (time: 180 minutes)

1. The student will obtain a Library Directory from the Reference Desk or the Circulation Desk and locate each item on the directory. The student will note what kinds of materials are found in each area.

2. The student will ask a person at each service desk what services are provided at that desk. (Reference, Circulation, Media)

3. The student will prepare a handout for fellow students advertising the services and materials found in the library. The handout should be no more than 2 pages. The student should be as creative as possible. (Place handout in journal)

4. The student should develop a plan for other students on how to self-tour the library. The plan should advise students on the most logical way to tour the library. (Record in journal)

5. The student should read the section on the library in the Student Handbook. (Available at the Circulation Desk)

6. The student should develop a brief definition of the word “plan”. The definition should indicate what a plan is. Use dictionaries in the reference collection. (Record in journal)

POST-TEST(time: 45 minutes)

The student should address goals 4 - 6.

The student should prepare the student’s log and notetaking system, make copies and place the pages in a notebook that the student will use throughout the course to record the student’s progress, resources consulted and information found. The decisions making outline should be placed in the log so the student can refer to it during the project. The student should make enough copies to carry him through several modules and then make copies as needed.

The student will turn in sample pages of the system the student has devised and the student will receive feedback on the system before the student uses the log/notetaking system.

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REFERENCES AND RESOURCES

Consult with reference staff
Consult with Media Staff
Consult with instructor
Dictionaries in Reference Collection

Developed/revised: 4/9/95
**EXAM ITEM FOR CONTENT GOAL:**
develop research plan (Content goal 7)

**SKILL TEST ITEM -- Decision making outline, recording and notetaking systems**

1. The student is to be evaluated on the content goal: develop research plan. The rating will be based on performance on each of the items below.

The student:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>completes assignment on time</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>B.</td>
<td>uses correct grammar and spelling</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>C.</td>
<td>organizes plan logically</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>E.</td>
<td>follows directions</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>F.</td>
<td>prepares what was requested</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>G.</td>
<td>indicates plan will lead to a conclusion</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>H.</td>
<td>includes elements in log to record student's progress</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>I.</td>
<td>creates a notetaking system that allows student to record information about resources used</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>J.</td>
<td>creates a system which will allow student to backtrack if needed</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
IFL100

Information Literacy
Module 2

EXAM ITEMS FOR CONTENT GOAL:
develop research plan (Content goal 7)

TRUE/FALSE

1. A log is used to record progress in the research process.
   T   F
   Answer: True

2. A well-designed log allows the student to record information about resources used.
   T   F
   Answer: True

3. Backtracking is not part of the research process.
   T   F
   Answer: False

4. Research can be done without planning.
   T   F
   Answer: False

5. Information recorded about resources used should allow the student to return to the resources if needed.
   T   F
   Answer: True

6. The decision making process includes the consideration of possible solutions.
   T   F
   Answer: True

7. Every service desk in the library provides the same services.
   T   F
   Answer: False
SHORT ANSWER ITEMS

1. List the steps in the decision making process:

**Answer:**
gathering information
identifying alternatives
evaluating alternatives
selecting alternative
monitoring results
revising

2. List three reasons for designing and using a log and notetaking system:

**Answer:**
awareness of progress
organize project
consistency
retrace activities
record appropriate information

3. List three services provided in the LRC.

**Answer:** Student should list services the student has identified through the directory and self-tour of the LRC.
- Research assistance
- Circulation of materials
- Reserve materials
- Video viewing
- Interlibrary loan
- Assistance in locating and using materials
- Copying services
- Access to Internet

4. List three types of materials found in the LRC.

**Answer:**
- Books
- Periodicals
- Newspapers
- Video tapes
Maps
Books on tape
Pamphlets
Electronic resources
Also acceptable: specific types of materials such as encyclopedias, dictionaries, legal materials

**MATCHING**

<table>
<thead>
<tr>
<th>A. Librarians</th>
<th>F. Systematic way to record information</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Books</td>
<td>C. Magazines, journals, newspapers</td>
</tr>
<tr>
<td>C. Periodicals</td>
<td>E. Restricted use</td>
</tr>
<tr>
<td>D. Media</td>
<td>G. Process to determine action to be taken</td>
</tr>
<tr>
<td>E. Reserve materials</td>
<td>H. Tells how to record information about a resource</td>
</tr>
<tr>
<td>F. Log</td>
<td>A. Assist in research process</td>
</tr>
<tr>
<td>G. Decision making</td>
<td>D. Videotapes, cassettes, microfilm</td>
</tr>
<tr>
<td>H. MLA</td>
<td>B. Contain information</td>
</tr>
</tbody>
</table>

**COMPLETION**

1. A log will allow the student to record information in a ___________ way.
   Answer: systematic; consistent

2. A well-designed log allows the student to ___________ when necessary.
   Answer: backtrack; return to resources

3. A consistent ___________ system allows the student to record the information from resources needed to answer the research questions.
   Answer: Notetaking

4. The elements to be recorded about a resource are found in the ___________.
   Answer: MLA Style Manual

5. Scientists use the ___________ to guide them through the research process.
   Answer: scientific method
6. By using the steps in the _________________ process, the student can evaluate alternative solutions to a problem.
   Answer: decision making

7. Staff members who work at the Reference Desk are called _________________.
   Answer: Librarians

8. Libraries contain the following formats (types of materials): _________________.
   Answers: books, periodicals (or similar term), video tapes, newspapers, cd roms, films, maps, pamphlets or (any type of material found in the library)

ESSAY

Discuss a situation where a log (systematic way of recording information) might be used by a student (career related).
IFL100

Information Literacy

MODULE FOR CONTENT GOAL:
list resource credibility elements

INSTRUCTIONAL TOPIC
listing resource credibility elements

PREREQUISITE(S)
classify information types
categorize information providers
name government information providers

DIRECTIONS FOR MODULE 3
Assignments for this module are due by Saturday of the 4th week of the semester. Completed assignments may be left at the instructor's office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 5 minutes)

When the student purchases something, the student wants to be sure it was made by a reliable producer and that the store where the student purchases the item will back the product and/or service. The student determines the credibility of the producer or seller by asking appropriate questions, checking with the Better Business Bureau, or asking others who have used the product or the store. By checking certain things about the product and or the store, the student can determine if it is reliable. The student becomes a wise consumer. The student needs to become a wise consumer of information. The student has to evaluate the information and the provider of the information the same way the student does any other product.
PERFORMANCE OBJECTIVE

The student will be allowed references. The student will list resource credibility elements. Performance will be satisfactory if the student addresses goals 8 - 10 and produces a list of the resource credibility elements, and analyzes the credibility of 2 periodical articles and 1 book. The student should explain how the student has used the credibility elements in evaluating the three resources. The documents of record are the list of resource credibility elements and the results of the analysis of three resources using the credibility elements.

STARTING POINT PRE-TEST (time: 0 minutes)

No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST

No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: classify information types. (time: 150 minutes)

1. The student will study the handout on information types. (Attached)

2. The student will classify information types. Performance will be satisfactory if the student lists 3 examples of each major type of information: bibliographic, statistical, fact, directory, opinion, graphic. The student will locate these examples by browsing through the Reference Collection and examining materials. The student will record information about the resource according to MLA format. (MLA Manual in reference collection) (Record in journal)

3. The student will examine the resources listed in the handout. The resources will be found in the Reference Collection. The student should locate the resources by matching the call number given to a label on the book. The student should seek help from a library staff member if the student has difficulty locating any of the resources. (Handout attached)

4. The student should describe the type of information in the resources listed on the handout. (Record on handout)

5. The student should also examine the resources the student finds for information relevant to the student’s research topic. The student should record the information on the resource and the information relevant to the student’s
topic according to the student's log and notetaking scheme using the MLA guidelines. (Record in journal)
SUBGOAL TOPIC: categorize information providers. (time: 120 minutes)

1. The student will study the handout on information providers. (Attached)

2. The student should locate an article, book or report issued by the following providers:
   researcher
   association
   special task force

3. The student should browse through the Encyclopedia of Associations (Reference Collection) and list 5 associations that indicate they provide information for their members. These may be any associations the student chooses. The student should indicate what type of information the associations provide. (Record in journal)

4. The student should browse the reference materials on business (Reference Collection -- HG's). The student should look at five items and note who provided the information and what kind of information is in the resource.

SUBGOAL TOPIC: name government information providers. (time: 120 minutes)

1. The student will use the phone directory to identify a federal, state and county agency that collects and makes information available. The student will contact the agencies and determine what kind of information the agency collects or makes available, how the agency makes the information available, what format the information is in, who may obtain or use the information, the location and phone number of the agency. The student may contact the agencies by phone. (Reference Collection)

2. The student should visit one of the agencies and write a summary of the visit. (Record in journal)

3. The student should examine the Statistical Abstract in the reference collection. The student should describe the kind of information found in the publication. The student should note 5 pieces of information the student found in the publication. (Record in journal)

4. The student should visit a county agency and describe what information may be found there. (Record in journal)
SUBGOAL TOPIC: read handout on the credibility of resources. (time: 150 minutes)

1. The student should ask three people why they believe or don’t believe what they hear or read.

2. The student will read the handout on credibility of resources. (Attached to this module)

3. The student will list the resource credibility elements and a one sentence description for each element. (Record in journal)

4. The student will define:
   - credibility
   - bias
   - special interest
   - objectivity
   - opinion
   - judgment
   - viewpoint
   (Dictionaries in Reference Collection)

5. The student should read three speeches in Vital Speeches (Periodical Collection). Summarize one speech. (Record in journal)

POST-TEST (time: 90 minutes)
The student will apply the resource credibility elements to three resources --1 book and 2 periodical articles. The student will analyze the resources as to credibility by indicating how the resource stands in regards to each element.

Find articles by browsing the Periodicals Collection.
Select any book from the circulating collection.

REFERENCES AND RESOURCES

- Telephone directories (Reference Collection)
- Handout on Information Types (Attached)
- Handout on Information Providers (Attached)
- Handout on Resource Credibility Elements (Attached)
- Consult with Reference Staff
- Reference Collection
- Consult with Instructor
Information types

Module 3

Information is presented or made available in many ways. The nature or content of the information usually drives the way information is formatted and presented. The way information is presented is also important in communicating the message the producer of the information intends to convey. The way the information is stored (print, electronic, non-print) is secondary to the way the information is presented. For this exercise, the information itself is the important factor, not how the information is stored.

Types of information:

Bibliographic

Information in this format is represented by lists of resources -- a list of books, a list of articles, a list of videos, or any combination thereof. The listing gives information about the resource -- who wrote/compiled the information, when it was made available (date), who published it, and other descriptive information about the resource. Sometimes the bibliographic listing contains a summary or abstract of the contents of the item. This information is a summary and for the full content of the resource, the student would have to go to the resource itself.

Resources containing bibliographic information are usually found in the reference collection of the LRC. The purpose of these publications is to present a listing of resources on some subject. The subject may be very specific or very general -- math, Hemingway, American poetry, materials for college libraries, etc. The bibliographic listing provides the student with materials that have been written or produced about a subject or topic. Bibliographic listings are convenient ways to determine what resources exist on a topic, subject or person.

Although libraries often contain many bibliographic listings in the collection, the libraries do not always have all of the resources listed. The student using a bibliographic listing would have to determine if the materials in the listing were available in the library or elsewhere in the community.
A good example of a bibliographic listing of materials is the library’s online catalog. This contains a listing of all the materials owned by the library. Information included about the resource includes, title, author/producer, date of publication, number of pages, call number and location in the library, and in some cases, a summary of the contents of the resource. The bibliographic information is stored in electronic format. The information could also be stored in print form or in a microformat. The storage medium does not change the type of information given about the resources. The storage medium is important in how the information may be accessed.

Statistical:

Statistical information represents information presented through numbers -- how many, how much, how big, etc. Usually this information is presented in charts or tables. Statistical information is used by everyone at some point. Statistical information is usually related to a particular topic. The topic may be very specific or very general and broad. The 1990 Census of the United States provides statistical information about the number of the citizens in the U.S. as well as many aspects of their lives -- income, educational level, age, type of residence, place of residence, etc. An example of very specific information is the listing of stock prices in the newspaper or the number of books published last year.

Statistical information is a concise, clear way to present information. Sometimes the user has to interpret the information in order to apply it to a problem or topic. The user must understand the data that is presented and the factors upon which the data is based. Statistical information is very useful, but does require understanding by the user of what the data represents. Statistical information is usually found in the reference collection of the library although statistical information may be found in many places. When statistical data is used by any author, the author should indicate where the data was found originally. A source for the data should always be given.

Fact:

Factual information may be thought of as what is or what is real. Facts state what really is about a topic, event, or person. This kind of information may found in the reference collection in many resources ranging from multi-volume encyclopedias to one report on a very specific topic. Many monographs (books) are factual in that they report what is about something. This information may be thought of as information that has been observed, measured, confirmed.

Opinion:

Information that falls in the category of opinion represents an interpretation and analysis of some other information. An author has looked at some existing information
and has applied his values or beliefs to it. The author has formed an opinion about information and proceeds to support his interpretation of some information. This kind of information goes beyond the presentation of factual information to the interpretation of the information. This kind of information usually includes some presentation of what is and then moves into what the author thinks should be.

**Directory:**

Information may be presented in directory form. This kind of information is used to present information about companies, agencies, people, associations. The most familiar directory is the telephone directory. Directory information usually contains relevant information about the location of a company, agency or association and may contain brief statistical/factual information about the agencies contained in the directory.

**Graphic:**

Graphical information may be thought of as a visual representation of information. Information of this type may be a picture, a map or globe, a model, a chart or graph or any other medium that represents a visual presentation of the information. Pictures, symbols, colors, textures and other techniques are used to present information.

The student will locate examples of different types of information in the LRC. The student should begin in the reference area and seek assistance if the student cannot locate the types of information specified.

The student should identify the types information found in the resources listed in the exercise for this module (Attached):
Information Providers

Module 3

How is information generated? How is it made available? In other words -- where does information come from? Information is generated in a variety of ways. Some information is new, some information is old information that is confirmed to be still useful or is updated or revised to reflect changes or discoveries. Some information is based on existing information and represents an interpretation of existing information. Some information is collected and made available. Some information is required to be collected and made available by law such as the U. S. Census. Some information is collected for a particular purpose. Businesses use all sorts of information to develop and market products and services. They may use existing information or they may generate new information.

How then is information generated, developed, and made available?

Research:

Some information is generated through carefully controlled conditions. An assumption is proposed and data is gathered to substantiate the assumption or refute the assumption. This kind of research is conducted by experts on a particular subject and controls are established to assure the accuracy of the information generated. Medical research is often conducted under such conditions. The results may be new treatments for diseases or new drugs for treatment or prevention of disease. Many other subject areas or disciplines conduct experiments under controlled conditions and thus generate new information. Others in the field use this information to expand existing knowledge or they may generate more new information. The key to this type of information is that it is conducted by experts in the field and controls are in place to assure correct interpretations of findings. This information is usually published (made available) through journals associated with the discipline.

Government:

Governments at all levels -- local, state and federal collect information. Some information such as the U. S. Census is required by law. The government must count its citizens every 10 years. The census provides more than a count of citizens. It provides
information about the citizens as to income, education, lifestyle, age, location, type of residence. Thousands of pieces of information are available for a variety of geographic settings. The information gathered during the census is the basis for many decisions by legislators and businesses. Many people in private and public activities rely on the information generated by the census.

The activities of government generate other kinds of information on many areas -- income tax returns show who earns what and spends how much and for what. The government collects data on the occurrence of diseases, causes of death, hospital operations, educational activity. The government also sponsors researchers to investigate and produce new information. The government is usually involved in research that impacts the citizens it serves.

**Associations/Special Interest Groups:**

Associations are organized groups that support a specific discipline or interest area. Most occupations have an organized group that supports the communication and information needs of the occupation. Such groups often conduct or support research to expand the knowledge of the field. This information may be made available through journals, conferences, or special reports. Sometimes the associations limit the information to the membership, but often the information is available to anyone. Associations often are seeking to support the needs of the group they represent. When these groups conduct research and generate information, it is usually to serve the special needs of the membership. The information may be to seek support or funding for the occupation or may be to substantiate a belief or value the membership holds. It is not that the information is not accurate but rather that the group is looking for information that supports a particular view or need. Professional associations usually maintain high standards for membership and police the activities of the organization.

Special interest groups generate information that supports views or values the members hold. The National Rifle Association may be thought of as a special interest group. They generate and publish information that supports their viewpoint. Groups interested in abortion, capital punishment, the environment and many other areas generate and publish information that supports their beliefs and needs. There is nothing wrong with the information produced and published by these groups. The user of such information should be aware of who generated the information and the purpose behind the generation of the information. Special interest groups represent the heart of a democratic society in that people may hold and support differing viewpoints on a variety of topics. It is the responsibility of the user of information to understand the basis for the generation of information.
Task Forces

Information is sometimes generated by special groups who are appointed or who are in the business of doing research and providing information for those who need information. Groups are appointed or hired to study problems or issues and report on their findings. Such groups may study transportation needs, education reform, health care, and many other topics. Such groups are usually composed of experts in the topic being studied and may or may not be paid to conduct the study and produce the findings. Often these groups produce a report with recommendations on how to address the problem. They have looked at existing information and have generated new information. Findings of such groups are usually published as reports. The group usually does not exist after the study has been completed. Some groups are sponsored by government funding, foundation funding or private funding. Users of such information should be aware of who, how and by whom the information was produced.

Private publishers:

Information may be generated by businesses who specialize in collecting and publishing information. Usually, such publishers specialize in specific areas and gear the information toward the needs of business and industry. The information provided by the private sector is usually highly focused on particular areas, is not readily available through other sources, and interprets existing information that is complex and requires time and expertise to interpret. The information generated by these groups may be thought of as a service. Such specialized information is usually costly, but serves a need for the user.

The student should complete the exercises associated with Module 3. The student should become familiar with the different providers of information.
EXERCISE

Module 3

Examine the items listed below and indicate the type(s) of information found in the resource. The student may indicate more than one type of information if there are several types covered.

Items to be examined and classified as to type of information presented:

1. Information please almanac Ready Reference AY64 I55 1995

Type(s) of information contained in the document

____ statistical
____ bibliographic
____ fact
____ directory
____ graphic
____ opinion
____ special features observed by student

Brief description of information contained in resource:

2. Peterson’s guide to four year colleges Reference REF L901 P447 1995

Type(s) of information contained in the document

______ statistical
______ bibliographic
______ fact
______ directory
______ graphic
______ opinion
______ special features observed by student

Brief description of information contained in resource:

3. A map (maps are located in the reference collection)
Type(s) of information contained in the document

______ statistical
______ bibliographic
______ fact
______ directory
______ graphic
______ opinion
______ special features observed by student

Brief description of information contained in resource:


Reference collection Ready Ref JK6 G58 1995

Type(s) of information contained in the document

______ statistical
______ bibliographic
______ fact
______ directory
______ graphic
______ opinion
______ special features observed by student

Brief description of information contained in resource:

5. Moody’s handbook of NASDAQ stocks Reference Ref HG4501 M592 Spring 1994

Type(s) of information contained in the document

______ statistical
______ bibliographic
______ fact
______ directory
______ graphic

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6. CRC handbook of chemistry and physics Reference Ref QD 65 H3 1993/94

Type(s) of information contained in the document

- statistical
- bibliographic
- fact
- directory
- graphic
- opinion
- special features observed by student

Brief description of information contained in resource:


Type(s) of information contained in the document

- statistical
- bibliographic
- fact
- directory
- graphic
- opinion
- special features observed by student

Brief description of information contained in resource:


Type(s) of information contained in the document

- statistical
- bibliographic

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Type(s) of information contained in the document

- statistical
- bibliographic
- fact
- directory
- graphic
- opinion
- special features observed by student

Brief description of information contained in resource:

10. Organization charts: structures of more than 200 businesses and non-profit organizations.    Reference    Ref HD 58.65 O74 1992

Type(s) of information contained in the document

- statistical
- bibliographic
- fact
- directory
- graphic
- opinion
- special features observed by student

Brief description of information contained in resource:

    Ref Z5049 A45 K4
12. The map catalog: every kind of map and chart on earth and even some above it.
Reference: Ref Z6028 M23 1986
EXAM ITEMS FOR CONTENT GOAL:
List resource credibility elements (Content goal 11)

TRUE/FALSE

1. A resource that is credible contains reliable information.
   T       F
   Answer: True

2. A resource that lists information about other resources is a bibliography.
   T       F
   Answer: True

3. One is likely to find statistical information in a directory.
   T       F
   Answer: False

4. Maps, charts & graphs are graphical representations of information.
   T       F
   True

5. Information about the population of North Carolina will be found in a statistical resource.
   T       F
   Answer: True

6. The author or compiler of information is not an important consideration when evaluating the credibility of a resource.
   T       F
   Answer: False

7. Governmental agencies are good sources of information.
   T       F
Answer: True

8. Researchers create new information.
   T    F
   Answer: True

9. It is not necessary to check the credibility of a resource before using the information found in it.
   T    F
   Answer: False

SHORT ANSWER

1. Federal, state and local government agencies collect and provide a great deal of ________
   Answer: information

2. A credible resource contains ________________ information.
   Answer: reliable
   Answer:

3. Associations are groups of people with similar ________
   Answer: interests; careers

4. Information can be presented in a variety of ________________.
   Answer: types; formats

5. A researcher creates ________________ information.
   Answer: New

ESSAY

Discuss how one determines the credibility of a resource and why the credibility of a resource is important.
Resource Credibility Elements

Module 3

The "information explosion" and advances in technology have resulted in vast amounts of information being available and accessible. It is difficult to verify who and how some of the information is generated especially in the world of Internet and Information Highways. The user of information has to become a wise consumer of information. The user needs to know how to evaluate the source of the information. There are some items a user should look for when using information. The user should not assume information is accurate, timely or correct just because it exists. The user wants "quality" information, information that is reliable and thus useful to the user. Using "bad" or "low quality" information leads to the generation of more "low quality" information.

How does the student evaluate the credibility of a resource? How does the student become an educated consumer of information?

Elements to use to evaluate a resource:

Author:

Who is the author?
Is the author affiliated with a university, association, organization?
What are the author's credentials -- education, experience in the field?
Has the author published other works in the field?
Is the issue adequately covered?
Does the author cover one viewpoint on the issue or several?

Publisher/Provider:

Who is the publisher?
What expertise does the publisher have in this field -- reputation, other publications, years in business?
Does the publisher ask for feedback on the resource?

Date:
Is the information current?
How is the information updated -- annually, frequent supplements?

Contents:

What information is provided?
What is the source of the information -- existing or new information?
Are references to the sources of information provided?
Who contributes to the resource?

Organization of the resource:

Is the resource easy to use?
Are there explanations of what is in the resource?
Are symbols, definitions, etc. easy to locate?
Is there an index?

The student should keep in mind the terms defined relating to resource credibility.

The student should examine any resource using the guidelines listed above. The student should also refer to the exercises on information types and information providers when evaluating a resource.
IFL100
Information Literacy
Module 3

EXAM ITEM FOR CONTENT GOAL:
list resource credibility elements (Content goal 11)

SKILL TEST ITEM -- Analysis of three items as to credibility

1. The student is to be evaluated on the content goal: list resource credibility elements.
   The rating will be based on performance on each of the items below.

The student:

A. completes assignment on time                      No  Yes
B. uses correct grammar and spelling                No  Yes
C. prepares assignment according to directions      No  Yes
D. includes elements requested                      No  Yes
E. applies resource credibility elements correctly  No  Yes
F. explains how resource credibility elements were applied
G. presents assignment in an organized, logical manner No  Yes
IFL100

Information Literacy

MODULE FOR CONTENT GOAL:
define library terms

INSTRUCTIONAL TOPIC
defining library terms

PREREQUISITE(S)

label periodical citation elements
explain classification schemes

DIRECTIONS FOR MODULE 4

Assignments for this module are due by Saturday of the 5th week of the semester. Completed assignments may be left at the instructor's office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 5 minutes)

Every occupational area develops a vocabulary that is specific to it. While these terms are very familiar to those who work in the occupation, they are not familiar or friendly to others who interface with the service the occupation provides. The library and information are no exception to this fact. The student will continue to encounter words that are not familiar to the student and that the student does not understand. The student is about to break through the maze.

PERFORMANCE OBJECTIVE

The student will be allowed resources. The student will define library terms. Performance will be satisfactory if the student addresses goals 12 and 13 and produces a list of 25 terms related to the library. The definitions are to be
developed by the student and written in the student’s own words so that the
student and any other student who reads the definitions knows what the term
means.

STARTING POINT PRE-TEST (time: 0 minutes)
No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST
No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: label periodical citation elements. (time: 180 minutes)

1. The student will label the elements in a periodical article citation. The student
will go to the Reference Desk and look at the section in the MLA Manual that
shows how to list the information about a periodical article so that the student
and others can consult the resource now or in the future. The information the
student lists about where the student found the article allows the student or
anyone else to find the article in the campus library or in many other libraries.
The student is following a standard way of recording information that is
meaningful to lots of other people who may want to use the same article the
student did. The student should take notes or copy examples from the MLA
Manual for citing periodical articles. (Record in journal)

2. The student will go to the periodical collection in the library and browse
through the collection. The student will identify five articles from five
different journals and record the information about the articles as indicated by
the MLA Manual. (Record in journal)

3. The student will prepare these citations as a short bibliography using MLA
specifications. (Record in journal)

4. The student will examine several periodicals and note what information is
given about the journal issue. The student should list the information given on
several periodicals. (Record in journal)

5. The student should find a daily periodical, a weekly periodical, a monthly
periodical, a quarterly periodical. (Record names of items in journal)
6. The student should browse through 10 periodicals that the student is not familiar with. The student should note the names of the 10 journals. (Record in journal)

SUBGOAL TOPIC: explain classification schemes. (time: 150 minutes)

1. The student will suggest classification schemes for given categories of information. The student is to choose two of the categories listed here and develop a classification scheme (physical arrangement) for the categories. The student should choose 2 categories from the following categories and develop a classification scheme for each of the two categories: baseball cards (or any sport card collection), a recipe collection, shoes in a shoe store, canned vegetables in a grocery store, a collection of photographs, plants in a garden shop, a collection of cd's, or category approved by instructor. The scheme should allow another user to locate what is needed from the collection. The student should preparing a scheme that is logical and will allow others to find the items. (Record in journal)

2. The student will study the Library Classification of knowledge. (Outline attached to this module)

3. The student will indicate where in the Library of Congress Classification Scheme the following topics would be found:

   Spanish dictionary
   quotations
   information on fish
   history of the United States
   American literature
   biology
   psychology
   photography
   cook books
   business management

   The student should indicate the letters and category where the above items would be found. (Record in journal)

4. The student should go to the section on history and determine the pattern of the classification scheme. (Circulating collection) Outline the scheme in journal. Note the changes in the content of the books. Consult LC classification outline for assistance.
SUBGOAL TOPIC: define library terms (time: 120 minutes)

1. The student will list 25 terms that pertain to the library and/or resources in the library. Use Library Directory, signs, staff members, other assignments. The student should define these terms by using a dictionary and/or asking library staff. (Reference collection, Reference Staff)

2. The student should prepare a short test on library terminology. (Place in journal)

3. The student should ask 5 students to complete the test. The student should note which terms were missed most often. (Record in journal)

4. The student should prepare a handout for other students listing the 10 most important terms they should understand. The handout should include the definitions of the terms. (Place in journal)

POST-TEST (time: 30 minutes)

The student will address goals 12 and 13.

The student will produce a list of 25 terms with definitions.

REFERENCES AND RESOURCES

Library of Congress classification outline (Attached)
Consult with library staff members
Consult with instructor

Developed/Revised: 04/9/95
HANDOUT

LC Classification Scheme

Module 4

AC Collections
AE Encyclopedias (General)
AG Dictionaries and other general reference works
AI Indexes
AM Museums
AN Newspapers
AP Periodicals
AS Academies & Learned Societies
AY Yearbooks
AZ History of scholarship and learning
B Philosophy
BC Logic
BD Speculative philosophy
BF Psychology
BH Aesthetics
BJ Ethics
BL Religion
BM Judaism
BP Islam
BQ Buddhism
BR Christianity
BS The Bible
BT Doctrinal theology
BV Practical theology
BX Christian denominations
C Auxiliary sciences of history
CB History of civilization
CC Archeology
CD Diplomatics
CE Technical chronology
Numismatics
CN Inscriptions. Epigraphy
CR Heraldry

D History
DA Great Britain
DAW Central Europe
DB Specific countries
DC France
DD Germany
DE Mediterranean region
DF Greece
DG Italy
DH Netherlands
DJ Netherlands
DJK Eastern Europe
DK Soviet Union
DL Northern Europe
DP Spain
DQ Switzerland
DR Balkan Peninsula
DS Asia
DT Africa
DU Oceania
DX Gypsies
E America
F US local history
G Geography
GA Math. geog.
GB Physical geog
GC Oceanography
GF Human ecology
GN Anthropology
GR Folklore
GT Manners & cust CJ
GV Recreation/leisure
H Social sciences
Ha Statistics
<table>
<thead>
<tr>
<th>Category</th>
<th>Code</th>
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<td>Biography</td>
<td>CT</td>
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<td>Economic history</td>
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<td>Transportation &amp; Commun.</td>
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<td>LB</td>
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<td>Special aspects of ed.</td>
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<td>Individual institutions</td>
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<td>Textbooks</td>
<td>LT</td>
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<td>Music</td>
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<td>Literature of music</td>
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<td>Musical instruction &amp; study</td>
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<td>Visual arts</td>
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<td>Architecture</td>
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<td>Arts in general</td>
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<td>Classical languages</td>
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<td>Romance languages</td>
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<td>Germanic languages</td>
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<td>English</td>
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<td>West Germanic</td>
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<td>Slavic</td>
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<td>Finno-Ugrian</td>
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<td>Oriental lang. &amp; lit.</td>
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<td>Semitic</td>
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<td>Indo-Iranian</td>
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<td>Eastern Asia, Africa, JA</td>
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<td>Hyperborean</td>
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<td>Literature</td>
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<td>English literature</td>
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<td>Germanic literature</td>
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<td>Juvenile literature</td>
<td>PZ</td>
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<td>Science</td>
<td>Q</td>
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<td>Mathematics</td>
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<td>Astronomy</td>
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<td>Physics</td>
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<td>Pathology</td>
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<td>Gyn. &amp; obstetrics</td>
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</tr>
</tbody>
</table>
NC  Drawing
ND  Painting
NE  Print media
NK  Decorative arts
RJ  Pediatrics
RK  Dentistry
RL  Dermatology
RM  Therapeutics
RS  Pharmacy
RT  Nursing
RV  Botanic med.
RX  Homeopathy
RZ  Other systems
S   Agriculture
SB  Plant culture
SD  Forestry
SF  Animal culture
SH  Aquaculture/fisheries
SK  Hunting
T   Technology
TA  Engineering
TC  Hydraulic engineering
TD  Environmental engineering
TE  Highway engineering
TF  Railroad engineering
TG  Bridge engineering
TH  Building construction
TJ  Mechanical engineering
TK  Electrical engineering
TL  Motor vehicles
TN  Mining engineering
TP  Chemical technology
TR  Photography
TS  Manufactures
TT  Handicrafts
TX  Home economics
U   Military sciences
UA  Armies
UB  Military administration
UC  Maintenance & transportation
UD  Infantry
UE  Cavalry
UF  Artillery

VE  Marines
VF  Naval Ordinance
VG  Minor services of navies
VK  Navigation
VM  Naval architecture
Z   Books in general
UG Military engineering
UH Other services
V Naval science
VA Navies
VB Naval administration
VC Naval maintenance
VD Naval seamen
VE Marines
EXAM ITEM FOR CONTENT GOAL:
define library terms (Content goal 14)

SKILL TEST ITEM -- List of terms with definitions

1. The student is to be evaluated on the content goal: define library terms. The rating will be based on performance on each of the items below.

The student:

A. completes assignment on time
B. uses grammar and spelling
C. prepares assignment according to directions
D. includes elements requested
E. understands terms
F. covers a variety of areas and materials in the LRC
G. identifies terms that must be understood to complete the course
H. uses definitions that another student would understand

<table>
<thead>
<tr>
<th>Item</th>
<th>No</th>
<th>Yes</th>
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<td>H</td>
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</tbody>
</table>
EXAM ITEMS FOR CONTENT GOAL:
define library terms (Content goal 14)

TRUE/FALSE

1. The LC Classification scheme allows libraries to arrange knowledge logically.
   T  F
   Answer: True

2. There are other classification schemes that organize knowledge in a logical way.
   T  F
   Answer: True

3. Starting at the beginning of a letter of the LC classification scheme, knowledge is
   arranged from specific to general.
   T  F
   Answer: False

4. Librarians can help identify resources outside the campus library.
   T  F
   Answer: True

5. Magazines, newspapers and journals are types of periodicals.
   T  F
   Answer: True

6. A bibliography is a list of resources.
   T  F
   Answer: True

7. The LC Classification does not arrange information based on topic or information
   contained in resources.
   T  F
   Answer: False

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8. Reserve material is located at the circulation desk.
   T   F
   Answer: True

9. Everyone working in the library is a librarian.
   T   F
   Answer: False

10. Media refers to non-print materials such as videos, microfilm and cassettes.
    T   F
    Answer: True

11. Reference materials cannot be checked out.
    T   F
    Answer: True

MULTIPLE CHOICE

1. Classification schemes

    ________ restrict access to information
    ________ arrange items in a logical way (Answer)
    ________ are only found in libraries
    ________ are difficult to understand

2. Bibliographies

    ________ are stories about people
    ________ are lists of resources about some topic or subject (Answer)
    ________ are books
    ________ are graphs showing population growth

3. Elements that help identify a resource

    ________ are author’s name, date, title, page (Answer)
    ________ are color and size of the book
    ________ are not important to the research process
    ________ should never be written down
**MATCHING**

<table>
<thead>
<tr>
<th>A. LC Classification scheme</th>
<th>B. Publications that come out more than once a year</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Periodicals</td>
<td>C. Get assistance with videos, microfilms and other non-print items</td>
</tr>
<tr>
<td>C. Media Desk</td>
<td>E. Population figures</td>
</tr>
<tr>
<td>D. Bibliography</td>
<td>I. Get assistance with research projects</td>
</tr>
<tr>
<td>E. Statistical information</td>
<td>F. Book on trees</td>
</tr>
<tr>
<td>F. Factual information</td>
<td>H. Author, title, date, page</td>
</tr>
<tr>
<td>G. Graphic information</td>
<td>G. Map</td>
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<tr>
<td>H. Citation</td>
<td>D. List of resources</td>
</tr>
<tr>
<td>I. Reference Desk</td>
<td>A. Logical arrangement of knowledge</td>
</tr>
</tbody>
</table>

**COMPLETION**

1. Information recorded about a book should include (list at least 3 items)

   Answer: author, title, date, page, publisher, place of publication, name of journal

2. ________________ come out daily, weekly, monthly or quarterly.

   Answer: Periodicals

3. The letters in the LC Classification refer to the ________________ of a resource.

   Answer: content; subject; topic

4. Within a category (letter), the LC classification arranges information from ________________ to ________________.

   Answer: General to specific

5. A ________________ puts items that contain information on a topic together.

   Answer: classification scheme
6. Services at the Circulation Desk include:
   Answer: reserve materials, checking out materials, general information, renewal of materials, barcodes for campus ID’s

7. Information that is stored in a reduced size and requires a machine to read the contents of the material is _______.
   Answer: Microfilm, microfiche; cd

8. Services at the Reference desk include:
   (list at least 3)
   Answer: help with research projects, interlibrary loan, help using online catalog, library instruction, help with computer cd rom products, assistance locating resources

9. A bibliography is _______.
   Answer: a list of resources on a subject or topic

ESSAY

Design a classification scheme that arranges canned goods in a grocery store in a logical way (easy to find product needed)
IFL100

Information Literacy

MODULE FOR CONTENT GOAL:
identify library resources

INSTRUCTIONAL TOPIC
identifying library resources

PREREQUISITE(S)

perform online catalog search
view non-print formats
perform print index search
perform demographic database search

DIRECTIONS FOR MODULE 5

Assignments for this module are due by Saturday of the 6th week of the semester. Completed assignments may be left at the instructor’s office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 0 minutes)

The student has identified a need for information. The student formulated research questions related to the topic and now the student has to answer them. There is a possibility that the information the student needs is in the library. The student will probably find all that the student needs to complete the student’s research project in the library. If not, the library is the place the student should start because if the information is not in the campus library, the librarians can direct the student to other resources off campus that will have what the student needs.
PERFORMANCE OBJECTIVE

The student will be allowed references. The student will identify library resources. Performance will be satisfactory if the student addresses goals 15, 16, 17 and 18 and prepares a bibliography of library resources that relate to the topic the student is researching. The student should list the resources according to MLA specifications. The student should examine the resources and indicate if they are relevant to the topic the student is researching. The student should substantiate relevancy by indicating which research question the information will address. The documents of record are the bibliography and the printouts the student produces and the student’s statement of which research questions the resources address.

STARTING POINT PRE-TEST (time: 0 minutes)

No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST

No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: perform print index search. (time: 150 minutes)

1. The student will define “index” as it relates to the organization of information. The student should include the characteristics of an index and the types of materials that may be indexed. (Reference staff)

2. The student will search an index to locate information on the student’s research topic. The student should ask a reference librarian to help him identify an index (in print form, not electronic) that may contain information on the student’s research topic. If there are no print indexes that contain information on the research topic, use the Business Periodicals Index for this exercise. (Reference collection)

3. The student will search the latest two years of the index for information on the topic. The student will look for information that will answer the research questions formulated.

4. The student will list 2-4 resources the student finds relevant to the student’s topic and prepare the list to be handed in with other exercises in this module. If there was not an index that contained information on the student’s topic, list 5 resources the student found on the topic the student searched in Business
Periodicals Index. List the references according to MLA specifications. (Record in journal)

5. The student will browse the index section and list three other print indexes. The student will list what subject(s) is covered and what kind of material is indexed. (Record in journal)

**SUBGOAL TOPIC:** perform a demographic database search. (time: 180 minutes)

1. The student will define “demographic”. The student should include the characteristics associated with demographic information. (Dictionaries in Reference Collection)

2. The student will search the UPCLOSE database for information on the county. The student should print out the information the student finds. (Reference Collection)

3. The student will prepare a demographic profile of the county using the information printed out from UPCLOSE. (Place in journal)

4. The student should prepare a short test to be given to other students. The test should determine what other students know about their community. The student should give the test to three students. (Place in journal)

5. If this database has information related to the research topic, the student should perform the search at this time and print out the results. (Place printout in journal)

6. The student should perform two other searches on UPCLOSE. The student should look for information on another county in the state and a county in another state.

**SUBGOAL TOPIC:** perform online catalog search. (time: 180 minutes)

1. The student should look at each item on the menu of the library’s online catalog. The student should select each item on the menu and become familiar with the screens on the system. The student should note what information is given on the screens and what information the user will have to enter. (Online catalog -- Reference Area)

2. The student should practice searching subjects of the student’s choice in the Subject and Keyword indexes. The student should read the information on the screen and follow the directions on the screen.
3. The student should practice until the student is comfortable on following menus and screen directions to determine what the resource is, what the call number and/or location of the resource is, what format the resource is, what information is given about the resource, and whether the resource is available for check-out or in-house use.

4. The student will search the library's online catalog for information on the student’s research topic. The student should seek the advice of the reference staff before performing the search. The student will produce a printout of the materials the student found through the search. (Place in journal)

5. The student will examine the resources and select those most useful to him in answering the research questions.

6. The student should check out or copy the information the student will need to answer the research questions and record information about the resources according to MLA specifications. (Record in journal)

**SUBGOAL TOPIC:** view non-print formats. (time: 150 minutes)

1. The student should identify the non-print formats the library has. The student should look at information in one of the microfiche collections. The student should become familiar with the machine for reading and printing microfiche. (Reference Collection)

2. The student will look at an issue of the New York Times on microfilm. The student will print out the portion of the front page showing the date of the paper. (Media Collection)

3. The student will look at the videos the student identified through the online catalog search that are relevant to the student’s topic. The student should take notes relevant to the research questions the student formulated. (Record in journal)

4. The student should view the video "Changing Paradigms" and write a one-paragraph summary of the tape. (Record in journal)

5. The student should browse the microfilm collection and note what materials are in this format.
**SUBGOAL:** identify library resources (time: 150 minutes)

1. The student will prepare a list of the library resources the student found relevant to the research topic. The student should prepare them as a bibliography according to MLA specifications. (Record in journal)

2. The student should review the research questions to see what has been answered and what is still unanswered after identifying library resources.

3. The student should consult a librarian to determine if other resources in the library will answer the research questions.

4. The student should prepare a list of hints for other students on locating resources in the library. These hints should help students avoid the pitfalls and barriers the student encountered. (Record in journal)

5. The student should list five things that should be improved in the library — resources, equipment, services, staff assistance, etc. — that the student feels would help students use the library. (Record in journal)

**POST-TEST** (time: 60 minutes)

The student will complete goals 15 - 18. The student should finalize the list of library resources the student found relevant to the student’s topic and prepare them as a bibliography using the MLA Manual as a guide. The student should attach printouts from the online catalog.

The student should indicate which research questions have been answered and what questions have not been answered to this point.

**REFERENCES AND RESOURCES**

Reference collection
Media Collection
Microfilm collection
UPCLOSE database (Reference Area)
Online catalog (Reference Area)
Video collection (Media Desk)
MLA Manual (Reference Collection)
Consult with Reference staff
Consult with Media Staff
Consult with Instructor
Information Literacy
Module 5

EXAM ITEM FOR CONTENT GOAL:
identify library resources (Content goal 19)

SKILL TEST ITEM – Bibliography, printouts, statement on research questions addressed

1. The student is to be evaluated on the content goal: identify library resources. The rating will be based on performance on each of the items below.

The student:

A. completes assignment on time
B. uses correct grammar and spelling
C. prepares assignment according to directions
D. includes elements requested
E. lists resources according to MLA specifications
F. attaches printouts
G. indicates which research questions were addressed by the resources
H. locates a variety of types and formats of resources
I. uses relevant resources

No  Yes  No  Yes  No  Yes  No  Yes  No  Yes
EXAM ITEMS FOR MODULE 5
identifying library resources  (Content goal 19)

TRUE/FALSE

1. The student should go to the library first when starting a research project.
   T    F
   Answer: True

2. An index helps a student find information in resources such as periodicals.
   T    F
   Answer: True

3. The library’s online catalog is an index.
   T    F
   Answer: True

4. Demographic information is information about the US Congress.
   T    F
   Answer: False

5. Students can search for books by subject, title or author in the online catalog.
   T    F
   Answer: True

6. The online catalog lists materials found in the public library.
   T    F
   Answer: False
7. A student does not have to know the exact title of a book to locate it through the online catalog.
   T   F
   Answer: True

8. Information in the online catalog about videotapes includes a summary of what is on the tape.
   T   F
   Answer: True

9. The online catalog tells where an item is located in the library.
   T   F
   Answer: True

10. A student cannot see an issue of the New York Times from 1865.
    T   F
    Answer: False

11. Back issues of every periodical in the library are on microfilm.
    T   F
    Answer: False

**MULTIPLE CHOICE**

1. An index

   ______ lists articles found in periodicals
   ______ is a resource only librarians use
   ______ gives information on the population of North Carolina
   ______ can be checked out
   Answer: lists articles found in periodicals

2. The online catalog

   ______ lists materials in the Library of Congress
   ______ lists materials found in the library
   ______ is no good unless the student knows who wrote a book
   ______ lists only books
   Answer: lists materials found in the library

3. Microfilm
is difficult to find
must be read on a machine
cannot be printed
contains seldom used information.
Answer: must be read on machine

COMPLETION

1. The ______________ allows students to locate resources found in the library.
   Answer: online catalog; CAL

2. Periodical articles on a topic can be located by using an ______________.
   Answer: index

3. Information about people living in North Carolina is found on a ______________ database.
   Answer: demographic

4. In order to find a book in the library, the student must know ______________.
   Answer: the cali number.

5. Items listed in the online catalog may be found by searching by author, title or ______________.
   Answer: subject

6. Three items needed to find an article in a periodical are:
   ______________
   Answer: Title of periodical, date of issue, page article is on

7. Three non-print formats found in the library are:
   ______________
   Answer: videos, microfilm, cassettes, laser discs, cd roms, films

MATCHING

A. Keyword searching       B. Needed to locate book in the library
B. Call number             C. Author                  D. Lists periodical articles
C. Author                  D. Lists periodical articles
G. Lists library’s holdings
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<tr>
<td>D. Index</td>
<td>E. Stores information in a reduced format</td>
</tr>
<tr>
<td>E. Microfilm</td>
<td>C. Write/produces books</td>
</tr>
<tr>
<td>F. Demographic information</td>
<td>A. Way to find material through the online catalog</td>
</tr>
<tr>
<td>G. Online catalog</td>
<td>F. Population, age, educational attainment</td>
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</table>

**ESSAY**

Many resources must be used to locate information in the library. Discuss the following resources and how they are used to locate information in the library: online catalog, indexes.

   Answer: Student should indicate what material can be found by using the online catalog and indexes, how it is found and what information about the resource is given.
IFL100

Information Literacy

MODULE FOR CONTENT GOAL:
contrast free text and controlled vocabulary searching

INSTRUCTIONAL TOPIC
contrast free text and controlled vocabulary searching

PREREQUISITE(S)
illustrate database structure
explain controlled vocabulary

DIRECTIONS FOR MODULE 6

Assignments for this module are due by Saturday of the 7th week of the semester. Completed assignments may be left at the instructor’s office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 5 minutes)

Vast amounts of information are published each day. One way information is made available is through electronic resources. These resources are accessed through a computer. They contain a great deal of information. Some of these resources contain information on many topics and others are dedicated to one subject area. Sound confusing? It is! In order to locate the information the student needs for this course and for other research projects the student will have in other courses, the student has to understand how to get the information needed out of these resources. They are complex, contain vast amounts of information and are not always user friendly.
PERFORMANCE OBJECTIVE

The student will be allowed references. The student will contrast free text and controlled vocabulary searching. Performance will be satisfactory if the student addresses goals 20 & 21 and produces 2 searches from a database. The first search should be searched as a free-text term in the database and then as a controlled vocabulary term. The printouts should include the number of resources found using the two techniques and the first five resources produced from each search.

STARTING POINT PRE-TEST (time: 0 minutes)
No starting point test. The instructional approach begins at ground level.

EXEMPTION TEST
No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: illustrate database structure. (time: 180 minutes)

1. The student will locate 3 definitions of a database by using computer dictionaries or handbooks located in the reference collection. The student will write a definition of the term "database" in the student's own words. (Record in journal)

2. The student will read about databases in a computer encyclopedia. (Reference collection)

3. The student will practice developing a database structure for given topics. The student will design the database structure for two of the following categories: sport card collection, recipe collection, shoes in a shoe store, canned vegetables in a grocery store, a collection of photographs, plants in a garden shop, a collection of cd's, or a category approved by the instructor. The database should conform to the definition of a database the student developed. The database should provide any user access to the main points of information in the category selected. (Record in journal)

4. The student will look at the information given about a book or a video in the online catalog (Reference area). The student will list the database elements that are given in the online catalog. (Hint: one element is TITLE) (Record in journal)
5. The student should self-test on databases. The test should include what a database is and does and how a database is structured. (Place in journal)

6. The student should summarize the purpose of a database and list some advantages of arranging information in a database format. (Record in journal)

**SUBGOAL TOPIC**: explain controlled vocabulary. (time: 180 minutes)

1. The student will examine the online thesaurus for the ERIC database. The student should study the thesaurus. The student should browse through the thesaurus and study some of the entries noting which terms should be used when searching and which are not appropriate. The student should note referrals from inappropriate entries to appropriate entries.

2. The student should search the term "community colleges" in the ERIC database. The student should print the screen with the number of "hits" found and print the first item found in full format. The student should study the item printed. The student should underline the elements in the database structure for entries in this database. (Hint: one is AUTHOR).

3. The student should study the sample searches (attached to this module) The student will perform 2 searches using a term from the ERIC thesaurus in the ERIC database. In the first search, the student will search the term in free-text mode by selecting FIND from the menu and entering the term. The student should print the search results screen.

4. The student should use the same term for the second search. This time the student should select FIND from the menu and enter the term in the following way: The student should search the term only in the descriptor field.

   The student should print the search results screen from this search.

5. The student should compare the two search results the student printed.

   The student should observe that the results of the two searches differ in the number of items found. The second search should have produced fewer items for the search. The reason for this is that the second search was directed at a specific area of the database structure. The first search searched all fields of the database and picked up the term wherever it appeared in the database.

   The second search produced fewer items but items that are on target. The first search was just a search on words anywhere in the database. The second search was "controlled".
6. The student should explain why the controlled search (the second search) is more efficient.

**SUBGOAL:** contrast free text and controlled vocabulary searching (time: 180 minutes)

1. The student will search for information on the research topic in Proquest (Reference area) The student will search a term as free text.

2. The student will search the same term in a controlled search. The student will produce a printout of the second search. The student will write on the printout what term the student used and how the student developed the search statement. (Place in journal)

3. The student will look at a full-text item on Proquest. The student will explain how this resource is different than other full text databases in the library. The student should note what format the full text articles are stored on. (Record in journal)

4. The student should select 2 terms to search in Proquest. The student should combine the search with “and” -- term1 and term 2.

5. The student should run another search combining the same two terms with “or” term1 or term2.

6. The student should explain the difference in the results of the two searches. The student will ask a librarian when a free text search might be the better kind of search. (Place search in journal)

**THE STUDENT IS ENCOURAGED TO SEEK THE ASSISTANCE OF THE REFERENCE STAFF IN COMPLETING THIS ASSIGNMENT.**

**POST-TEST** (time: 30 minutes)

The student will submit the results of the two ERIC searches.

The student will list two advantages of performing searches using controlled techniques.

The student will state when a free text search may be helpful.
REFERENCES AND RESOURCES

Consult with Reference staff
Consult with Instructor
Eric Database (Reference area)
Manuals on electronic resources (Reference area)
Proquest (Reference area)

Developed/Revised: 04/9/95
SAMPLE SEARCHES

ERIC DATABASE

Module 6

Below are sample search results from ERIC. Note the differences in the search results using terms in free text searching and in controlled searching. The free text search finds the term anywhere it appears in any of the indexed fields or text. The controlled search technique finds the term only in the Descriptor field (or other specified field) assuring the searcher that the information on the topic is the subject of the publications found. The free text method will find the terms anywhere they appear and could turn up documents that are not relevant to the research topic. Controlled searching assures that at least you are narrowing the items found to those that are most likely to contain the kind of information you need.

Searching is an acquired skill and librarians are able to design and assist users in formulating searches that will be efficient and useful. If the student wants help on more sophisticated search techniques, the student should consult with a member of the reference staff.

Searches:

#1 12937 community
#2 6850 colleges
#3 3239 community colleges

This search turned up 3239 documents that contain the words “community colleges”

#4 12937 community
#5 6850 colleges
#6 3051 (community colleges) in DE

This search turned up 3051 documents in which “community colleges” appeared in the descriptor field (DE). The main topics covered in the documents are noted in the descriptor field.

There were fewer documents in the second search, but they would be more relevant to the information needed.

Additional searches:
College students in descriptor field (DESCRIPTOR field contains the topics covered in a document)

Boyer (person's name) Searching for documents Boyer has written

The second search was more efficient and assured the searcher that only documents that Boyer authored were found, not all the documents in which Boyer was mentioned.

The student should run the same searches as above to try to duplicate the searches then proceed with the exercises for this module. The student is encouraged to practice the technique of narrowing and refining searches so that items found are relevant to the topic the student is researching. Most electronic databases provide the features which allow the searcher to target the exact information needed.

The first search on "community colleges" also illustrates the need to narrow the search even further. The number of documents turned up in this search is too high. The search could be narrowed further by adding terms that to the search, thus putting additional restrictions on the search. Each term added will bring down the number of documents found. The student should consult with a librarian and try narrowing the search on "community colleges" by adding other terms. The librarian will give the student ideas on how to narrow searches to assure that the student finds the needed information.

Other terms to practice with are: College athletics, college graduates, college libraries or other terms selected from the online thesaurus. Try different combinations of terms.

Practicing narrowing searches on this database will allow the student to practice the same techniques on other electronic resources. Searches will be more effective and efficient.
EXAM ITEM FOR CONTENT GOAL:
contrast free text and controlled vocabulary searching (Content goal 22)

SKILL TEST ITEM -- Printouts from controlled & free text searches

1. The student is to be evaluated on the content goal: contrast free text and controlled vocabulary searching. The rating will be based on performance on each of the items below.

A. completes assignment on time
B. uses correct grammar and spelling
C. prepares assignment according to directions
D. includes elements requested
E. executes both searches successfully
F. explains results of the two searches

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EXAM ITEMS FOR CONTENT GOAL:
contrast free text and controlled vocabulary searching (Content goal 22)

TRUE/FALSE

1. Searching an electronic resource allows more access points than a print resource.
   T   F
   Answer: True

2. All information on electronic resources is in the form of a database.
   T   F
   Answer: False

3. It is not important to plan a search when using an electronic index.
   T   F
   Answer: False

4. A database arranges information in such a way that it is easy to retrieve information from the database.
   T   F
   Answer: True

5. The building blocks of a database are Fields (author, title, publisher, topics covered, etc.)
   T   F
   Answer: True

6. All databases contain the same fields.
   T   F
   Answer: False

7. Free text searches result in fewer items being found.
8. Controlled searching means one is directing the search toward specific fields containing the terms.  
   T   F  
   Answer: True

9. Combining two terms with "and" -- term1 "and" term 2 will result in fewer terms than combing two terms with "or" -- term1 "or" term2.  
   T   F  
   Answer: True

SHORT ANSWER ITEMS

1. Develop a structure for a database that will be used to hold information on business clients.  
   ANSWER: Elements such as those below should be included in the database design.  
   Name  
   Address  
   Type of business  
   Products used/service  
   How long a customer  
   Birthday  
   Phone number  
   Fax number  
   Amount of account  
   Any items that indicate the student understands a database structure  

2. Explain how a database is used to organize information.  
   ANSWER: Student states characteristics or uses of a database  
   Database identifies similar elements of information  
   Database puts information in a structure allowing retrieval of information  
   Database uses uniform terminology  
   Pulls together information on the same subject  
   Allows quick and efficient searching  

3. What must be known about a database in order to locate information in it?
**Answer:** Student indicates an understanding of how information is accessed in a database
- Structure of database
- Terminology/vocabulary
- Indexing scheme
- Date of coverage
- Format of information
- Subject(s) covered

**Essay**

Explain how information is retrieved from a database. Discuss how the structure, search technique and vocabulary can affect search results. This can be illustrated graphically using diagrams.
IFL100

Information Literacy

MODULE FOR CONTENT GOAL:
search electronic resources

INSTRUCTIONAL TOPIC
searching electronic resources

PREREQUISITE(S)

analyze electronic resource index
perform electronic index search
analyze full-text electronic resource

DIRECTIONS FOR MODULE 7
Assignments for this module are due by Saturday of the 8th week of the semester. Completed assignments may be left at the instructor’s office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 3 minutes)

Advances in technology have allowed publishers to put vast amounts of information in electronic format. The most common format used in the library is cd-rom. While it is great that so much information can be put on the cd's, it not so great when the student has to find the information the student needs on one of these technological wonders. The student is about to learn how to master the electronic library and find the information the needed rather painlessly.
PERFORMANCE OBJECTIVE

The student will be allowed references. The student will search electronic resources. Performance will be satisfactory if the student addresses goals 23 - 25 and produces printouts from the electronic resources, one bibliographic and one full-text. The bibliographic search must relate to the research topic. The full-text search should relate to the research topic unless no information is available on the topic from a full-text database. The documents of record are the printouts from the electronic resources.

STARTING POINT PRE-TEST (time: 0 minutes)
No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST
No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: analyze electronic resource index. (time: 180 minutes)

1. The student will browse an issue of a publication on electronic resources. The student should find this publication by browsing the periodical collection.

2. The student will study the handout on electronic resources (Attached to this module). The student will select one of the resources that is likely to contain information on the research topic. The student should consult with a reference librarian on the resource the student has selected to see if it is appropriate for the student’s topic.

3. The student will locate an article that reviews the resource. The student will answer the following questions on the resource: The student may also interview a member of the Reference staff to determine the following information.

What information is on the resource?
What time period is covered?
What format is the information in?
Is the resource user friendly?
Does the resource have an online help component?
Does the resource direct the user to other related topics?
Does the resource have any special features?

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4. The student will ask 5 students who have used electronic resources what skills they needed to perform the search. The student will develop a checklist on computer skills needed in researching an electronic resource. (Record in journal)

5. The student will assess the student’s own computer skills using the checklist the student developed. (Record in journal)

6. The student will ask 5 people who have used electronic resources what features make electronic resources user friendly. The student will list the features that make electronic resources user friendly. (Record student comments in journal)

**SUBGOAL TOPIC:** perform an electronic index search. (time: 90 minutes)

1. The student will practice skill. The student will search the index the student analyzed for material on the student’s research topic. The student will produce a printout of the items the student found.

2. The student will evaluate the resource on the basis of the features of a user friendly electronic resource. The student should indicate where the student had difficulty in using the resource.

3. The student will locate the resources the student identifies as being relevant to the student’s research project and record the information that helps him answer the research questions.

   The student should practice searching electronic resources.

**SUBGOAL TOPIC:** analyze full-text electronic resource. (time: 150 minutes)

1. The student will identify full-text resources available in the library (Reference area). The student will determine which one is likely to have information on the research topic.

2. The student will interview a reference librarian to determine what is on the resource. The student should answer the following questions:

   What information is on the resource?
   What time period is covered?
   What format is the information in?
Is the resource user friendly?
Does the resource have an online help component?
Does the resource direct the user to other related topics?
Does the resource have any special features?

3. The student will search the resource for information on the research topic. The student will produce a printout of the results.

4. The student will search a topic on an electronic encyclopedia (Reference area) and print out the results.

5. The student will search the same topic in a multi-volume print encyclopedia (Reference area). The student will compare the information on the print out with the information in the print encyclopedia. The student should note similarities and differences in the two resources. (Record in journal)

POST-TEST (time: 10 minutes)

The student will complete goals 23 - 25. The student will turn in printouts from 2 electronic resources. The student should highlight information that will be useful in answering the research questions.

REFERENCES AND RESOURCES

Handout on electronic resources (Attached)
Electronic resources in the library (Reference area)
Manuals on electronic resources (Reference area)
Consult with Reference librarians
Consult and interview other students
Consult with instructor

Developed/Revised: 04/9/95
HANDOUT

ELECTRONIC RESOURCES

Module 7

*Applied Science & Technology Index* - indexes periodical articles in the fields of chemistry, computer technology, construction, energy, engineering, fire protection, food industry, geology, machinery, math, metallurgy, mineralogy, physics, plastics, textiles, transportation. Covers 1986 - present.

*Baker & Taylor* - list of material published. Useful for locating materials on a particular subject. Includes bibliographic information about the publications.

*CollegeSource College Catalogs* - contains the complete text of college catalogs for selected 2 year, 4 year and graduate schools. Can search for specific conditions, view a profile or complete catalog. Results can be printed.

*Discovering jobs and careers* - a database for job seekers which includes profiles of more than 250 career areas. Includes full-text, abstracts, and excerpts from hundreds of trade and professional journals. Also includes information on more than 30,000 companies.

*Environmental Library* - resource containing information on laws and regulations pertaining to the environment. Subjects covered include case law, state and federal regulations, transportation of hazardous materials.

*ERIC* - indexes literature in the field of education. Abstracts of the articles and reports are provided. 1991 - present.

*Ethnic Newswatch* - a full-text index to newspapers and other periodicals published by ethnic and minority presses. Has English/Spanish language search options. Covers 1991 - present.

*E-Z Dot* - computerized version of the Dictionary of Occupational Titles. Can be searched by occupational title, DOT number, or industry.

*First Search* - online access to many databases: Art Index, Biodigest, Book Review Digest, Medline, MLA Bibliography, Sociological Abstracts, etc. Seek assistance from the reference staff.
**InfoTrac** - indexes and provides abstracts for periodical articles from over 1100 general interest and scholarly publications. Covers 1989 - present.

**Matter of Fact Database** - indexes and provides abstracts for statistical data derived from congressional hearings, the Congressional Record, periodicals and newspapers. Covers 1984 - present.

**Microhouse** - a resource containing information on computer hardware. Useful for troubleshooting, verifying compatibility, and checking specifications on computers and accessories.

**National Trade Databank** - full-text database which includes economic, travel, business, and other statistical information for the countries with which the US engages in trade. Updated monthly.

**Newsbank** - index to newspaper articles on current events, the arts, literature, and biography. Articles are taken from over 500 newspapers from across the US. Full text of the articles is available on microfiche.

**North Carolina Law on Disk** - Full text database which includes the General Statutes of North Carolina, North Carolina Case Law, North Carolina Administrative Code.

**Nursing and Allied Health (CINAHL)** - indexes articles in nursing journals and publications in 13 allied health disciplines. Abstracts are provided. Covers 1983 - present.

**Proquest** - index with abstracts for articles in over 1000 general periodicals. Full text of many articles is available on CD rom. Covers 1986 - present.

**Upclose** - full-text database with statistics from the 1990 Decennial Census. Information on North Carolina is available on population, age, race, housing, income, educational attainment, marital status, employment.

**Upclose USA** full-text database of statistical information on the US., states, MSA's, counties, cities, census tracts, and zip codes.


**World Atlas** - Atlas and database of international statistical information which can be displayed and printed as text, maps or graphs. 1991 -92.
EXAM ITEMS FOR MODULE 7
search electronic resources (Content goal 26)

TRUE/FALSE

1. Electronic resources store huge amounts of information.
   T       F
   Answer: True

2. Electronic resources are easy to use.
   T       F
   Answer: False

3. All electronic resources are full-text.
   T       F
   Answer: False

4. It is not important to know how information is arranged in the resource.
   T       F
   Answer: False

5. It is important to know the coverage -- information and time period- before searching.
   T       F
   Answer: True

6. Basic computer skills are needed to successfully use an electronic index.
   T       F
   Answer: True
7. An electronic resource is always better than a print resource.
   T   F
   Answer: False

8. Using the correct terminology and designing a search strategy are important when using an electronic resource.
   T   F
   Answer: True

9. Knowing what subject area an electronic resource covers is not important.
   T   F
   Answer: False

MULTIPLE CHOICE

1. Electronic resources

   ________ are only for librarians
   ________ allow multiple access points (Answer)
   ________ can all be searched using the same technique
   ________ are more useful than books and other print resources

2. A search strategy

   ________ requires extensive computer knowledge
   ________ should be based on the content and access points of the database (Answer)
   ________ once developed will work for any topic
   ________ doesn’t matter; the computer knows what information is needed

3. Select the element not important in building a search strategy

   ________ terminology
   ________ content and coverage of the database
   ________ the structure of the database
   ________ how many items are in the database (Answer)

4. Computer skills that are necessary to successfully search a database: (check all that apply)
knowledge of keyboard
ability to read directions on the screen and execute the commands
ability to utilize help features
ability to execute search, display findings and print needed information
Answer: all

SHORT ANSWER

1. Three things to know about an electronic resource before searching an electronic resource are:

   Answer: content of resource, period of coverage, structure, format of information, searchable elements (fields), terminology, what information is needed

2. Three elements (fields) that might be included about students in a database on class members are:

   Answer: name, major or program, id number, reason for taking class, number of credits completed. Student should indicate understanding of a database structure.

3. List three characteristics of a user-friendly resource:

   Answer: clear directions on screen, online help module, illustrations of how to enter search, online thesaurus, referral to other related topics, options to proceed or quit, easy download or printing capabilities, good prompts; student should indicate features that make a computer based resource easy to use.

4. What features does an electronic encyclopedia have that a print encyclopedia does not have. (list 3)

   Answer: sound, animation, search turns up multiple entries, printing capabilities, search entire publication

5. List three types of information found on electronic resources.

   Answer: bibliographic, statistical, full-text, graphic, abstracts or summaries of publications, demographic, directory, fact. Student’s answer indicates the student has accessed several electronic resources.
ESSAY

Explain how an electronic resource allows multiple access points to get to needed information.

Answer: database structure, multiple fields can be searched, specific words can be searched, terms can be combined to focus search, search may lead to related information, ability of software to search throughout the database. The student should indicate an understanding of the interaction of computer search capability with structure of information.
IFL100

Information Literacy
Module 7

EXAM ITEM FOR CONTENT GOAL:
search electronic resources (Content goal 26)

SKILL TEST ITEM -- Printouts from electronic resources

1. The student is to be evaluated on the content goal: search electronic resource. The rating will be based on performance on each of the items below.

   The student:

   A. completes assignment on time                       No       Yes
   B. uses correct grammar and spelling                  No       Yes
   C. prepares assignment according to directions       No       Yes
   D. includes elements requested                        No       Yes
   E. produces a printout of resources related to research topic No       Yes
   F. uses appropriate terminology for research topic    No       Yes
   G. searches a full text database on research topic or another topic as shown by the printout No       Yes
IFL100

Information Literacy

MODULE FOR CONTENT GOAL:
indicate specialized resources

INSTRUCTIONAL TOPIC
indicating specialized resources

PREREQUISITE(S)
list community resources

DIRECTIONS FOR MODULE 8
Assignments for this module are due by Saturday of the 9th week of the semester. Completed assignments may be left at the instructor’s office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 3 minutes)
While much of the information the student needs to answer the research questions is in the campus library, there are many other information resources beyond the library walls. Some of them are on the Internet. Others are located in the student’s community. The student is about to explore some other resources for information in the community.

PERFORMANCE OBJECTIVE
The student will be allowed references. The student will indicate specialized resources. Performance will be satisfactory if the student addresses goal 27 and identifies and produces a handout on special collections or information resources at 3 of the following locations: public library, college or university, museum, research center, civic organization, and/or identifies experts who are sources of specialized information. The handout should provide information on the location of the
resource, a brief description of the resource, contact person if applicable, access to and availability of the resource and any two items the student found interesting about the collection or resource. The document of record is the handout produced by the student.

STARTING POINT PRE-TEST (time: 0 minutes)
No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST
No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: list community resources. (time: 180 minutes)

1. The student will identify information resources in the community. The student will select 3 of the following agencies and determine what special collections or information resources they have: public library, university or college library, museum, civic organizations, research agencies, hospitals, or experts in the community who are resources for specialized information. The student should use the telephone directory, newspapers, speakers bureaus, reference staff and other directories in the reference collection to identify specific agencies or people from the above list.

2. The student should contact three agencies to determine the kinds of information offered and arrange for a visit to the agencies.

3. (4 & 5) The student should visit the three agencies contacted.

6. The student should prepare a handout suitable for other students. The handout should include the agency name, location, hours of operation, type of information available, any restrictions or special requirements, and a brief description of the collection or information resource the student observed on the student’s visit. The student should note any special features of the resource or collection. (Place handout in journal)

SUBGOAL TOPIC: indicate specialized resources (time: 180 minutes)

1. The student will identify at least one university that offers graduate degrees in the student’s career area. (College and university directories in Reference area)
2. The student will identify 1 - 3 institutions or agencies that do research in the student’s career area. (College and university directories in Reference area)

3. The student should look at the catalog of one of the universities and read through the information about the career area. (College catalogs in Reference area)

4. The student should look at a journal related to the student’s career area and read the information about the authors of the articles. (Periodicals collection) (Record information about 2 authors in journal)

5. The student should determine what kinds of special recognitions for excellence in the career area are given. (Seek assistance from Reference staff)

6. Browse the section in the library that has books in the student’s career area. Pull off several of the books and read about the author. (Seek assistance from Reference staff in locating correct area for student’s career program)

**POST-TEST** (time: 45 minutes)

The student should complete goal 27 and 28.

The student should finalize the handout on the three resources the student identified and visited in the community. If the student identified an expert, the student can use a summary of an interview with this person or attend a lecture or presentation given by this person and summarize the lecture or presentation. The handout should be suitable to give to other students at the college.

The student should list 3 books that have been published recently about the student’s career area. (Online catalog, Books in Print or Baker & Taylor in Reference area)

**REFERENCES AND RESOURCES**

- Telephone directories (Reverence collection)
- Newspapers -- listings of lectures, special events (Periodicals collection)
- Consult with Reference staff
- Directories of community organizations and associations (Reference collection)
- College Catalog Collection (Reference area)
- College Directories (Reference area)
- Books in Print (Reference collection)
- Baker & Taylor (Reference collection)
EXAM ITEM FOR CONTENT GOAL:
indicate specialized resources (Content goal #28)

SKILL TEST ITEM -- Handout on special collections or information resources

1. The student is to be evaluated on the content goal: indicate specialized resources. The rating will be based on performance on each of the items below.

The student:

A. completes assignment on time                      No  Yes
B. uses correct grammar and spelling                 No  Yes
C. prepares assignment according to directions      No  Yes
D. includes requested elements                       No  Yes
E. produces a handout suitable for distribution to other students                  No  Yes
F. identifies special collections/resources
   or experts available in the community            No  Yes
G. describes the resources                           No  Yes
H. indicates two items of interest
   that show the student understands the
   the content and scope of the resource            No  Yes
EXAM ITEM FOR CONTENT GOAL:
indicate specialized resources (Content goal #28)

TRUE/FALSE

1. The library should be the first stop when information is needed.
   T         F
   Answer: True

2. Libraries are the only place to find information for a research project.
   T         F
   Answer: False

3. Librarians can help locate information resources in the community.
   T         F
   Answer: True

4. Government agencies collect and compile a great deal of information about citizens and their activities.
   T         F
   Answer: True

5. A good source for information in specific field is a university where advanced study in the field is offered.
   T         F
   Answer: True

6. Books are good places to find the most current information in a field.
   T         F
   Answer: False

7. Professional conferences are good places to learn about the latest advances in a field.
   T         F
   Answer: True
COMPLETION

1. Three good places to find information in the community are:
   
   Answer: public library, universities, colleges, museums, experts, associations, organizations, conferences

2. The place to start to identify information resources is: ________________.
   Answer: campus library

3. ______________________ support the needs of members of a profession including keeping members up to date on advances in a field.
   Answer: Associations

4. ______________________ collect and compile information on citizens and their activities.
   Answer: Government agencies

5. People who are willing to speak on a particular topic can be located through
   ______________________.
   Answer: speaker’s bureaus

6. University researchers are often responsible for the generation of ____________________ information in a field.
   Answer: new

7. New information in a field is usually published in ____________________.
   Answer: journals, periodicals

8. One can keep up on new and changing activities in a field by joining an
   ______________________.
   Answer: association

SHORT ANSWER

1. Describe 2 resources or services available at the public library.
   Answer: special collection; internet access; business materials; business seminars, career classes, other student has discovered.
2. List the kind of information government agencies might collect and distribute about its citizens.
   Answer: demographic data -- education, age, occupation, marital status, income, place of residence, housing conditions (any data that indicates the student understands what demographic data is).

3. Suggest why a student might have to go to an agency other than the campus library to obtain information;
   Answer: topic is highly specialized or advanced

ESSAY

Choose a topic that you need information on and indicate where information might be found other than the campus library.

Answer: Student should indicate an understanding of providers of information in the community.
IFL100

Information Literacy

MODULE FOR CONTENT GOAL:
access Internet resources

INSTRUCTIONAL TOPIC
accessing Internet resources

PREREQUISITE(S)

explain Internet network
explain gopher servers
list Internet resources

DIRECTIONS FOR MODULE 9

Assignments for this module are due by Saturday of the 10th week of the semester. Completed assignments may be left at the instructor's office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 5 minutes)

The INTERNET, Cyberspace, Information Highways, The INFOBAHN -- what does it all mean? Is it important to me? Is it the latest buzz word that will disappear? The student is about to find out about this complex resource that has been around for years. The advances in communications and computer technology have made the Internet accessible to many and useful to many. A resource like the Internet is especially important to community college students since it gives them access to additional resources and to resources that were previously available only to faculty and students at large research universities. The Internet represents a vast amount of information. The student will be learning about a very small portion of the resources available on the Internet now and the hundreds of new resources that come online daily. The Internet presents another challenge to the student in that the
student will have to use the skills of evaluating information resources and
determining the credibility of the resource and its usefulness to the student.

PERFORMANCE OBJECTIVE

The student will be allowed references. The student will access Internet resources.
Performance will be satisfactory if the student addresses goals 29 - 31 and
produces a list of addresses of ten resources the student accessed through the
Internet and a brief description of the resources. The student should indicate if any
of the resources were relevant to the research topic.

STARTING POINT PRE-TEST (time: 0 minutes)
No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST
No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: explain Internet network. (time: 150 minutes)

1. The student will read 2 articles on the Information Highway.
Use a periodical index to find the articles.

2. The student will read the materials on reserve about the Internet. (Circulation
Desk)

3. The student will prepare a handout suitable for other students explaining what
the Internet is. The handout may be textual information, outline format or
graphic in nature. The object of the handout is to help the student’s fellow
students understand what the Internet is. (Place in journal)

4. The student will browse the Internet Yellow Pages (Internet Lab).

5. The student will find out how the Internet can be accessed by an individual.
The student should list two agencies that provide Internet access. The student
should indicate what equipment is required and what the cost of accessing the
Internet is. Include this information at the end of the handout on the Internet.
(Consult materials in the Internet lab or locate periodical articles on accessing
the Internet)
SUBGOAL TOPIC: explain Gopher servers. (time: 180 minutes)

1. The student will attend one of the scheduled workshops on the Internet in the library. During the workshop the student will hear about Gopher servers and the student will have hands-on practice using a Gopher server. The student should take notes during the workshop and read materials given to him at the workshop. (Sign up for session in the Internet lab)

2. The student should access three Gopher servers and print out the main menus of these Gophers. The student should print several other levels of menus for each Gopher. The student will then note similarities of the three Gophers and any special features of the Gophers. (Internet lab)

3. The student will record the addresses of the Gophers the student accessed, attach the menu printouts, and indicate three information resources the student accessed through the Gophers. The student should note any special features the student found as the student used the Gophers. (Record in journal)

4. The student will perform a search using Netscape. The student should search for information on the research topic. The student should record the addresses of the resources accessed. The student should printout information from the resources. (Place in journal)

5. The student should access 4 Home Pages. The student should describe what is on the Home Pages and give the addresses of the Home Pages. The student should determine if there is a Home Page for the college. If there is a Home Page, the student should access it and describe the information found on it. (Internet lab)

6. The student should use the AWESOME List and access 5 resources from it. The student should describe the resources accessed and record the addresses of the resources. (Internet lab) (Record in journal)

SUBGOAL TOPIC: list Internet Resources. (time: 180 minutes)

1. The student should find resources on the Internet in the following categories:

   Weather
   Earthquakes
   Climatology Map
2. Sporting events and/or news

3. Resources on jobs

5. Resources on science

6. Libraries

The student should produce printouts of one item from each category and list the address of the resource. (Internet lab)

**POST-TEST** (time: 60 minutes)

The student will produce a list of 10 resources the student accessed on the Internet. The student should indicate any that were relevant to the research topic. The student should include the addresses of the resources that were accessed. The student should give a brief description of the information on the resources and note any special features.

**REFERENCES AND RESOURCES**

Internet Yellow Pages  (Internet lab)
Consult with Reference staff
Consult with Instructor
Internet Lab
Reserve materials for this module (Circulation desk)
IFL100
Information Literacy
Module 9

EXAM ITEMS FOR CONTENT GOAL:
access Internet resources (Content goal 32)

COMPLETION

1. The Internet is a world-wide _________________________________.
   Answer: computer network

2. List two ways to access information on the Internet:
   _________________________________.
   Answer: gophers, netscape, archie, veronica, home pages, printed guides

3. Information resources have an ________________________________ on the Internet that allows one to access them.
   Answer: address

4. List 5 kinds of information (specific subjects or topics) that can be found on the Internet:
   _________________________________.
   Answer: weather, earthquakes, online shopping, job listings, government information, others indicated by the student that show the student understands the scope of the Internet.

5. Explain what a Gopher is and how one uses a Gopher to access Internet resources:

   Answer: A menu driven resource that provides access to resources on the Internet.
6. Explain how Netscape differs from Gopher servers. Indicate how Internet resources are accessed using Netscape.

   Answer: Gophers are menu driven; Netscape is searched through topic/word approach.

7. Briefly indicate how the Internet could impact you in your career.

ESSAY

Describe a Home Page you will might create about yourself. Include the kinds of information you would include and trace how one would move around your Home Page.

   Answer: Student should indicate an understanding of how Home Pages are constructed and that Home Pages are multi-leveled, can contain graphics, and are written in a hypertext mode.
EXAM ITEM FOR CONTENT GOAL:
access Internet resources (Content goal #32)

SKILL TEST ITEM -- Produce list of Internet resources with addresses

1. The student is to be evaluated on the content goal: access Internet resources. The rating will be based on performance on each of the items below.

<table>
<thead>
<tr>
<th>The student:</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. completes assignment on time</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>B. uses correct grammar and spelling</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>C. prepares assignment according to directions</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>D. includes elements requested</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>E. chooses resources related to research topic</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>F. accesses a variety of resources</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>G. lists addresses of resources so that resource can be accessed again</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>H. indicates what information is found on resources</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>I. makes appropriate entries in journal</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
INSTRUCTIONAL TOPIC
presenting research results

PREREQUISITE(S)

verify research results
organize research results
use word processing software

DIRECTIONS FOR MODULE 10
Assignments for this module are due by Saturday of the 11th week of the semester. Completed assignments may be left at the instructor’s office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 5 minutes)

Presenting the results of the research is the most important part of any research project. The results of the student’s research represent the work the student put into the project. The results and the way the student presents the results should indicate what the student found and should be presented in a way that is meaningful to the student’s audience. The student should answer the questions -- What did I find and how will I tell people what I found?

PERFORMANCE OBJECTIVE

The student will be allowed references. The student will present research results. Performance will be satisfactory if the student addresses goals 33 - 35 and produces a written report on the research topic. The report should include the
problem statement and a paragraph on each research question summarizing the information the student found that addressed the research questions. The summary on each research question should contain substantive information on the topic. The student should write a final paragraph summarizing the research findings on the topic. A list of the resources used in answering the research questions should be attached to the research results. Resources should be listed according to the MLA Manual. The document of record will be the written report on the research topic.

**STARTING POINT PRE-TEST**  (time: 0 minutes)
No starting point test: The instructional approach begins at ground level.

**EXEMPTION TEST**
No exemption test is offered.

**LEARNING EXPERIENCES**

**SUBGOAL TOPIC**: verify research results.  (time: 150 minutes)

1. The student will evaluate the results of the research project. The student will list the research questions and indicate if the student answered them in the research process. The student should list the questions and under each question brief statements of the answers to those questions.  (Record in journal)

2. The student should indicate if questions were not answered or partially answered, why they were not answered. The student should offer reasons why this occurred and how the student would adjust the questions if the student were starting the project again. The student should also indicate if the student made any adjustments to the problem statement or research questions during the research process. The student should indicate why the student made those adjustments and how the student used the decision making process in making the adjustments.  (Record in journal)

3. The student will indicate where the student found the most helpful information for the project -- in the library, other places in the community or on the Internet.  (Record in journal)

4. The student will analyze the topic selection and research questions and indicate if the topic and the questions were appropriate. The student should note if the student had to make any adjustments as the project progressed and why the student had to make the adjustments.  (Record in journal)
5 The student will list 5 mistakes the student made during the research process and tell other students how to avoid them. (Record in journal)
SUBGOAL TOPIC: organize the research results. (time: 60 minutes)

1. The student will organize the results of the student's project and prepare an outline which indicates how the student plans to present the student's findings. The outline should cover the main elements of introduction, results, conclusion(s). (Record in journal)

2. The student will prepare 2 graphics (charts, tables, illustrations, drawings, maps, etc.) that illustrate some aspect of the information found on the topic.

3. The student will prepare at least 1 overhead transparency. The overhead should be something the student would use in a presentation of the information found on the topic. (Transparencies can be made in the Media area)

4. The student will write a one page summary of what the student learned about the topic the student researched. This is for the student's use. (Record in journal)

5. The student will read an article on preparing a presentation. The article may be on a written or oral presentation. The student should list the main points covered in the article. (Locate articles through InfoTrac or Proquest -- (Reference area)

The student should prepare a 3-5 minute speech in which the student will present the results of the research project. The student should produce an outline for the speech. The student may give the presentation, tape it and turn it in for this project. The outline is the required item for this activity. (Record in journal)

SUBGOAL TOPIC: use word processing software. (time: 180 minutes)

1. The student will list the features and capabilities of word processing software (Computer lab).

2. The student should use a word processing package to prepare a table. The student should use the data found on the county when the demographic database was searched.

3. The student should prepare a letter to a college official stating what the student likes about the college and what the student would like to see improved. (Place in journal)
4. The student should design a heading for a library newsletter. The student should experiment with the fonts and graphics in the word processing package. (Place in journal)

5. The student should indicate what features of the package were most useful and what the student had the most difficulty with. (Record in journal)

6. The student should enter a paragraph (any paragraph) and do the following with it

   run spell check
   center the paragraph
   left justify the paragraph
   full justify the paragraph
   add a graphic
   single and double space the paragraph
   use three different fonts
   bold one sentence
   move the last sentence to the beginning of the paragraph
   underline the sentence that was moved.

   The student should produce a printout of the results of each step. (Place in journal)

POST-TEST (time: 120 minutes)

The student will prepare a paper containing the results of the student’s research project. The paper will be prepared using a word processor. The paper should consist of the introduction to the research topic, the results following the outline the student prepared, a conclusion on the findings, and a listing of the resources the student used in the project. The listing of resources should conform to MLA Manual specifications. The student should write no more than one paragraph on the student’s findings for each research question. The introduction should consist of one paragraph and the conclusion should consist of one paragraph.

REFERENCES AND RESOURCES

Consult with Computer lab staff
Consult with Reference staff
Student log and notes
Consult with Instructor
EXAM ITEM FOR CONTENT GOAL
present research results (Content goal 36)

TRUE/FALSE

1. When a student evaluates and verifies research findings, the student is checking to see that the research questions were answered.
   T   F
   Answer: True

2. The audience is not a consideration in preparing research results.
   T   F
   Answer: False

3. An outline serves as a guide for the presentation of research results.
   T   F
   Answer: True

4. The best format for presenting information is textual.
   T   F
   Answer: False

5. Graphs, charts and tables help explain research results.
   T   F
   Answer: True

6. Use of a word processor is an essential tool in preparing project results.
T       F
Answer: True

COMPLETION

1. The most important consideration in preparing project results for presentation is the:

Answer: audience

2. Three features of a wordprocessing package are:

Answer: spell check, moving data around, graphics, tables, font types and sizes (any features of wordprocessing packages)

3. Determining if the ________________________________ have been answered assists the student in analyzing and verifying findings.
   Answer: research questions

4. Three things to consider when preparing research results are:

Answer: audience; method of presentation -- written, speech, summary; purpose; implications of findings; what results were; resources available

ESSAY

Select a method of presentation -- written, speech, graphic -- and discuss the advantages and disadvantages of the method.
IFL100
Information Literacy
Module 10

EXAM ITEM FOR CONTENT GOAL:
present research results (Content goal # 36)

SKILL TEST ITEM -- Report on research topic

1. The student is to be evaluated on the content goal: present research results. The rating will be based on performance on each of the items below.

The student:

A. completes assignment on time  Yes  No
B. uses correct grammar and spelling  Yes  No
C. prepares assignment according to directions  Yes  No
D. answers research questions; explains if not answered  Yes  No
E. identifies resources relevant to topic  Yes  No
F. uses a variety of resources  Yes  No
G. lists resources according to MLA specifications  Yes  No
H. presents research results in organized, logical manner  Yes  No
INSTRUCTIONAL TOPIC
displaying information literacy appreciation

PREREQUISITE(S)
relate information and problem solving
relate information and lifelong learning
predict information literacy importance

DIRECTIONS FOR MODULE 11

Assignments for this module are due by Saturday of the 12th week of the semester. Completed assignments may be left at the instructor's office or at the Library Circulation desk. Graded assignments may be picked up at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 5 minutes)

If the student were asked about "information" and its importance to the student in the student's personal and professional life, what would the student say? How important is it that citizens and workers have credible, relevant information? How important is that they are comfortable locating, evaluating and using information? How important is it that we are all "information literate"?

PERFORMANCE OBJECTIVE

The student will be allowed references. The student will display information literacy appreciation. Performance will be satisfactory if the student addresses goals 37 - 39 and lists three reasons why information literacy is a basic skill everyone should acquire. The student should direct the reasons to fellow students telling them why
they should enroll in this course. The document of record will be the student’s listing of three reasons why information literacy should be a skill everyone should acquire.

**PREREQUISITE PRE-TEST**
None

**STARTING POINT PRE-TEST**
No starting point test: The instructional approach begins at ground level.

**EXEMPTION TEST**
No exemption test is offered.

**LEARNING EXPERIENCES**

**SUBGOAL TOPIC**: relate information and problem solving. (time: 150 minutes)

1. The student will discuss three examples where the student has used information to make a decision. One of these should be career related. The others may relate to either career or personal issues. The student will discuss the situation and what information the student used in making the decision, how the student got the information and the results of the decision the student made. The student should also indicate what information was most important in making the decision. (Record in journal)

2. The student should list five examples of future events that will require information before the student makes a decision or reaches a conclusion. The student should indicate what information the student thinks the student will need to make the decision. (Record in journal)

3. The student should develop a slogan for INFORMATION. The slogan should be no more than 10 words long and it should be presented graphically for use on such items as -- bumper sticker, business card, overhead, banner, etc. The student may draw the graphic or may use computer software to generate it. (Place in journal)

4. The student should write 5 reasons why information is essential to solving a problem. (Record in journal)

**SUBGOAL TOPIC**: relate information and lifelong learning. (time: 180 minutes)

1. The student should define “lifelong learning”. (Dictionaries or articles)
2. The student will read three articles on the changing workforce. The student will list ten qualities that a person should possess to enter and advance in the workforce that the student read about. The student will indicate if the student possesses these qualities. (Locate articles through InfoTrac or Proquest -- Reference area) (Record in journal)

3. The student will interview 5 other students and ask them if they possess the qualities. The student will record this information on a chart. The student is to use numbers (not names) when referring to himself and other students -- Student #1, Student #2, etc. (Record in journal)

4. The student should list five events everyone faces during a lifetime when information is important. (Record in journal)

5. The student should compose an advertisement for the job the student hopes to be employed in. The ad should include the qualities and skills required for the job. (Record in journal)

6. The student is to write one sentence about the importance of information to those now entering the workforce. (Record in journal)

SUBGOAL TOPIC: predict information literacy importance. (time: 180 minutes)

1. The student will read the report from the American Library Association President's Committee on Information Literacy. (On reserve at Circulation Desk)

2. The student will review the attributes an information literate person. (On reserve at Circulation Desk)

3. The student will write a three sentence statement as to why information literacy should be taught to all students at all levels of education. This statement should be based on what the student has read about information, education and the workforce of the future. (Record in journal)

4. The student will read 2 articles on the "virtual library". (Locate articles through InfoTrac or Proquest in the Reference area) (Record articles in journal)

5. The student should explain the term "information explosion". The student should find material to support this phenomenon. (Reference collection) (Record in journal)
6. The student should identify three recent books on information. (Online catalog in Reference area, Books in print or Baker & Taylor) (Record in journal)

POST-TEST (time: 30 minutes)

The student will complete the assignments associated with this module

The student will write 3 reasons why information literacy is a basic skill everyone should acquire.
REFERENCES AND RESOURCES

American Library Association Report on Information Literacy (On reserve at Circulation desk)
Consult with Reference staff
Articles on information literacy (InfoTrac or Proquest in Reference area)
Consult or interview other students

Developed/Revised: 04/9/95
Information Literacy
Module 11

EXAM ITEM FOR CONTENT GOAL:
display information literacy appreciation (Content goal #40)

TRUE/FALSE

1. Information literacy refers to the ability to locate, evaluate and use information.
   T       F
   Answer: True

2. Some decisions do not require information.
   T       F
   Answer: False

3. Lifelong learning means you have to go to school for the rest of your life.
   T       F
   Answer: False

4. The ability to find, use and evaluate information enhances the learning process.
   T       F
   Answer: True

5. Information is not important in some careers.
   T       F
   Answer: False

6. Information helps one adapt to change.
   T       F
   Answer: True

7. Problems can be solved without the use of information.
   T       F
   Answer: False

8. Acquiring and using information increases one’s knowledge base.
   T       F
9. One can expect to enter the workforce and never face the need to change or learn.
   T    F
   Answer: False

SHORT ANSWER

1. List three skills everyone entering the workforce should have:
   Answer: information literacy, computer skills, ability to continue to learn, ability to communicate, ability to work in team atmosphere, others identified by the student.

2. Define “lifelong learning”.
   Answer: Continual upgrade of skills and abilities and expansion of knowledge base.

3. List five events in one’s life that require information before action is taken.
   Answer: choosing a career, job search, choosing day care or care for elderly, purchasing something, relocating, moving, personal life choices, other events listed by the student that would require information before action is taken.

4. List three attributes of an information literate person.
   Answer: ability to find, use, apply, evaluate, interpret, communicate or present information.

6. Explain what a “virtual library” is.
   Answer: Student should include some of the following items: electronic, network, access, information on demand, full-text, library without walls, availability, variety of formats, seamless approach to information.

7. Explain the “information explosion” and how it impacts users of information.
   Answer: Proliferation of information means more information is available in a variety of formats but that the volume and complexity of the information require the user to be information literate.

ESSAY

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Discuss why “information literacy” is a skill/ability everyone should acquire and develop.  
Answer: Student should indicate the relationship of information to learning, career, decisions, problem solving, change, lifelong learning.

Carole Schultz  
LR 203  
704-342-6883

IFL100

Information Literacy
Module 11

EXAM ITEM FOR CONTENT GOAL:  
display information literacy appreciation (Content goal #40)

SKILL TEST ITEM -- Reasons why information literacy is a basic skill

1. The student is to be evaluated on the content goal: display information literacy appreciation. The rating will be based on performance on each of the items below.

The student:

A. completes assignment on time  
B. uses correct grammar and spelling  
C. includes requested elements  
D. prepares assignment according to directions  
E. realizes value and importance of information  
F. expresses reasons that are the result of using and understanding information resources  
G. indicates the role of information in the learning process  
H. recognizes that learning also occurs outside the classroom  
I. sees need to be a wise "consumer" of information

No  Yes
No  Yes
No  Yes
No  Yes
No  Yes
No  Yes
No  Yes
No  Yes
IFL100

Information Literacy

MODULE FOR CONTENT GOAL:
critique research process

INSTRUCTIONAL TOPIC
critiquing research process

PREREQUISITE(S)

write new inquiries
assess new learning

DIRECTIONS FOR MODULE 12
Assignments for this module are due by Saturday of the 13th week of the semester. Completed assignments may be left at the instructor's office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH  (time: 5 minutes)

Every learning experience should increase the student's knowledge and open up new possibilities to explore and investigate. What did the student encounter along the way that caused the student to want to take a side trip? What caught the student's interest? What did the student realize the student needed to know more about? What would the student like to pursue more deeply than the student was able to do in this course?

PERFORMANCE OBJECTIVE

The student will be allowed references. The student will critique research process. Performance will be satisfactory if the student completes goals 41 and 42 and completes the questionnaire on the research process.
STARTING POINT PRE-TEST  (time: 0 minutes)
   No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST
   No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: write new inquiries. (time: 120 minutes)

1. The student will write five new questions that arose as a result of the research project. (Record in journal)

2. The student will list three areas or topics the student discovered during the research project that the student would like to know more about. The student should indicate why the student wants or needs to know more about these areas. (Record in journal)

3. The student should explain how information might impact or cause one to change an opinion. (Record in journal)

4. The student should explain how this project relates to lifelong learning. (Record in journal)

SUBGOAL TOPIC: assess new learning. (time: 180 minutes)

1. The student will indicate new learning that occurred during this course. The student will list five new things that the student learned during this course. These may be new skills, knowledge, concepts, ideas, feelings etc. that the student did not know before. These should be broad in nature not specific facts. The student should indicate how the new skills/knowledge will help him learn in the future. (Record in journal)

2. The student should list 5 new words learned during this project. The words should be related to the information found on the research topic, not library related. (Record in journal)

3. The student should indicate how this experience will help him in the future. (Record in journal)

4. The student should indicate what the student learned about the student’s career area. (Record in journal)
5. The student should explain how new information helps a student learn and continue to learn. The student should indicate what might be the best environment for the student to learn in. (Locate articles on information literacy and the learning process) (Record in journal)

6. The student should list 5 ways people can learn. The student should think about how, when and where the student learns or acquires new information, knowledge or skills. The student may consult with faculty on this activity. (Record in journal)

**SUBGOAL:** critique the research process (time: 180 minutes)

1. The student will complete the worksheet on the research process. (Attached to this module)

2. The student will comment on what caused him the most difficulty --lack of an understanding of the assignment, difficulty in using the resources, lack of time, lack of available assistance. (Write on worksheet)

3. The student will list methods the student used to overcome the problems the student encountered during the research process. (Write on worksheet)

4. The student will write 5 things the student would tell students who are planning to take this course. (Record in journal)

5. The student will indicate how course materials could be changed so that they are more helpful to students taking the course. (Record in journal)

6. The student will describe an “ideal information environment”. The student should be creative and imaginative. The student should indicate what would be the most useful way for the student to get the information needed now and in the future. The student may write, draw, diagram this or express the “ideal information environment “ in any format. (Record or attach to journal)

**POST-TEST** (time: 30 minutes)

The student will critique the research process by completing the worksheet on the research process. The student will indicate the student’s ability to complete the assignments. The student will indicate that the student had 1) no difficulty; 2) some difficulty; 3) great deal of difficulty.

**REFERENCES AND RESOURCES**

The student and the student’s analysis of what happened to him during this course.

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The results of the student's project.
The research process.
Student's log
EXAM ITEM FOR CONTENT GOAL:
critique research process  (Content goal #43)

TRUE/FALSE

1. Research is a process.
   T    F
   Answer: True

2. Every learning experience should increase one’s knowledge base and lead to new learning experience possibilities.
   T    F
   Answer: True

3. Information can change one’s viewpoint on an issue.
   T    F
   Answer: True

4. A learning experience is successful only if immediate change is apparent.
   T    F
   Answer: False

5. Learning takes place only in a classroom.
   T    F
   Answer: False

6. The research process never requires a change in topic or direction.
   T    F
   Answer: False

7. Students can enhance a learning experience by understanding how learning occurs.
   T    F
   Answer: True
8. The student assumes responsibility for the learning that takes place in any learning experience.
   T    F
   Answer: True

**COMPLETION**

1. ________________ is the continual acquisition and development of skills and abilities.
   Answer: Lifelong learning

2. Research is a ________________.
   Answer: process

3. Every ________________ experience increases one’s knowledge base and enhances one’s ability to learn.
   Answer: learning

4. ________________ is always part of a learning experience whether the student locates it or it is given to the student.
   Answer: Information

5. List three things that the student did in this course that enhanced the student’s ability to learn and continue to learn.

6. ________________
   Answer: Student should indicate increased abilities or skills that resulted from the research process.

7. Define “information literacy”.

   Answer: the ability to locate, use and apply information.

**MATCHING**

A. Information literacy   
   B. Lifelong learning

   E   Viewpoint on an issue
   H   Way one learns

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<td>C. Learning</td>
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<td><strong>G</strong></td>
<td>Conveying or presenting information</td>
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<td>D. Process</td>
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<td><strong>A</strong></td>
<td>Locate, use &amp; apply information</td>
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<td>E. Opinion</td>
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<td><strong>F</strong></td>
<td>All that one knows</td>
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<td>F. Knowledge base</td>
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<td><strong>B</strong></td>
<td>Continual learning &amp; development of skills</td>
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<td>G. Communication</td>
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<td><strong>D</strong></td>
<td>Way to accomplish something</td>
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<td>H. Learning styles</td>
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<td>Integrating new knowledge with existing knowledge</td>
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**ESSAY**

Explain how information literacy enhances one’s ability to learn.

**Answer:** Student should indicate how information increases knowledge base, enhances thinking and interpreting skills, enhances ability to communicate, others that indicate the student sees the relationship of information and the learning process.
EXAM ITEM FOR CONTENT GOAL:
critique research process  (Content goal #43)

SKILL TEST ITEM -- Complete questionnaire on research process

1. The student is to be evaluated on the content goal: critique research process. The rating will be based on performance on each of the items below.

The student:

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<tbody>
<tr>
<td>A. completes assignment on time</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>B. uses correct grammar and spelling</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>C. indicates understanding of research as a process</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>D. expresses why the student had difficulty completing the requirements of the course</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>E. is comfortable asking for assistance when needed</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>F. understands how information is organized and accessed</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>G. understands that resources are found in many place</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>H. indicates increased comfort in dealing with &quot;information&quot; and information professionals</td>
<td>No</td>
<td>Yes</td>
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WORKSHEET

Critique Research Process

Module 12

The student should complete the worksheet and submit as the document of record for Module 12. Evaluation of the worksheet includes completion on time, grammar, spelling, student responses to questions. If the student had “some” or “great deal of” difficulty, the student should indicate what the difficulty was. The student may attach additional sheets if necessary

The student:

1. Was able to complete the assignments as required

   No difficulty _____ Some difficulty_____ Great deal of difficulty_____

   Comments:

2. Was able to locate resources needed for topic

   No difficulty _____ Some difficulty_____ Great deal of difficulty____

   Comments:

3. Received assistance when requested

   No difficulty ____ Some difficulty_____ Great deal of difficulty____

   Comments:

4. Knew when and how to seek assistance

   No difficulty _____ Some difficulty_____ Great deal of difficulty____

   Comments:

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5. Was able to analyze information need

No difficulty _____  Some difficulty_____  Great deal of difficulty_____

Comments:

6. Was able to communicate information need

No difficulty _____  Some difficulty_____  Great deal of difficulty_____

Comments:

7. Is able to deal with information in a variety of formats

No difficulty _____  Some difficulty_____  Great deal of difficulty_____

Comments:

8. Feels comfortable applying skills learned in this course to other information needs

No difficulty _____  Some difficulty_____  Great deal of difficulty_____

Comments:

9. Understood how information was generated, stored and accessed

No difficulty _____  Some difficulty_____  Great deal of difficulty_____

Comments:

10. Understood how information resources were organized in the LRC

No difficulty _____  Some difficulty_____  Great deal of difficulty_____

Comments:
11. Understood how to locate and access information resources in the community

No difficulty _____ Some difficulty_____ Great deal of difficulty_____
Comments:

12. Understands how to identify a need for information

No difficulty _____ Some difficulty_____ Great deal of difficulty_____
Comments:

13. Understands how to break a problem into smaller parts and determine what information is needed

No difficulty _____ Some difficulty_____ Great deal of difficulty_____
Comments:

14. Was able to plan, monitor and maintain progress in an individualized learning environment

No difficulty _____ Some difficulty_____ Great deal of difficulty_____

15. Was able to assume responsibility for own learning

No difficulty _____ Some difficulty_____ Great deal of difficulty_____
Comments:

Course materials

1. Understood assignments

No difficulty _____ Some difficulty_____ Great deal of difficulty_____
Comments:
2. Could follow directions for each module

   No difficulty _____ Some difficulty_____ Great deal of difficulty_____

   Comments: 

3. Received assistance from the instructor as needed

   No difficulty _____ Some difficulty_____ Great deal of difficulty_____

   Comments: 

Comments:

1. What was the most difficult aspect of the research process for the student?

2. What changes/improvements in the course --organization, materials, level of assistance, etc.-- could be made to enhance the learning experience for the student?
3. Other comments:
IFL100
Information Literacy

MODULE FOR CONTENT GOAL:
assess career information needs

INSTRUCTIONAL TOPIC
assessing career information needs

PREREQUISITE(S)
There are no prerequisites.

DIRECTIONS FOR MODULE 13

Assignments for this module are due by Saturday of the 14th week of the semester. Completed assignments may be left at the instructor's office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH (time: 5 minutes)

What information will the student need in the student's career? Keeping up with new and changing information is part of everyone's job. Every field and individual job in that field is affected by new and changing information. Technological developments such as new communications technologies and computers are responsible for the rapid pace of change and the generation of vast amounts of information. So that the student doesn't suffer from "information overload", the student will have to be a wise consumer of information in the student's professional and personal life. The student is going to do this by learning from others.
PERFORMANCE OBJECTIVE

The student will be allowed references. The student will assess career information needs. Performance will be satisfactory if the student interviews three professionals in the student's field to determine their information needs and develops a plan for himself that indicates how the student will deal with new and changing information in the student's field. The document of record will be the student's plan to keep up to date on information is the student's career area.

STARTING POINT PRE-TEST (time: 0 minutes)
No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST
No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: interview three people working in the student’s field. (time: 210 minutes)

1. The student will interview workers in the student’s field. The interview should be designed so that the student learns what information is important to the worker and how the worker keeps up with new and changing developments in the student’s field. The student should develop questions before conducting the interview. The student should record the answers the student gets during the interview and the student should write a summary of the interview. The questions asked and the summaries of the interviews are to be turned in. Only one of the interviews should be with someone on campus. The other two should be with people working in the field. (Record in journal)

2. The student will develop a plan for himself on how the student will keep up with information in the student’s field. The plan should be based on what the student learned from what the student learned from interviewing others in the field. The student should be specific about the activities the student will do to stay current in the student’s field. (Record in journal)

3. The student will locate professional associations related to the student’s career area. The student will use the Encyclopedia of Associations (Reference collection) and find 1 - 3 associations that are relevant to the student’s career area.
4. The student will write a letter to one of the associations requesting career information and membership information. (Attach letter to journal)

5. The student should look at journals related to the student’s career area. The student should locate these journals in the periodical collection. The student should note the kind of information found in the journals. (Record in journal)

6. The student will determine if there is a local chapter of an association related to the student’s career area. The student should attend a meeting.

7. The student should determine if there are conferences related to the student’s career area. The student should note when and where the conference is held. The student should request information on the conference. (Record conference information in journal)

POST-TEST (time: 30 minutes)

The student should finalize the student’s plan to keep up to date with new information in the student’s field. The student should indicate how the student will keep up with new information in the field now and how it will be done when the student is working in the field.

REFERENCES AND RESOURCES

Encyclopedia of Associations (Reference collection)
Consult with Faculty
Consult with People working in career field

Developed/Revised: 04/9/95
EXAM ITEM FOR CONTENT GOAL:
assess career information needs (Content goal #44)

COMPLETION

1. Everyone should develop a plan to stay aware of new __________________.  
   Answer: information

2. Professional __________________ help meet the informational needs of those in a profession.  
   Answer: associations

3. The latest information on one’s field is usually published in _________________.  
   Answer: journals, periodicals

4. ____________________________ allow one to meet with others in the career area and learn about new developments in the field.  
   Answer: Conferences

5. List two ways to keep up with new information in one’s field:
   ____________________________________________________________________  
   Answer: read journals, attend conferences, network with colleagues, join an association, participate in learning experiences (classes or self-learning)

6. What kind of information might indicate the need for a career change or redirection?  
What should the student look for that indicate major movements in the student’s field?  
   Answer: Technological advances; decline in need for service; field merging or being replaced by another field, too many people trained for number of jobs available;
Student should indicate an awareness of the need to be prepared to make a career change or redirection.

ESSAY

Discuss the need to keep up-to-date on information and developments in one's field. Explain how this enhances one's ability to be productive in the field.

Answer: Student should indicate the need to learn and develop career-related skills to assure employability, advancement in the career area, and contributions to the field.
IFL100

Information Literacy
Module 13

EXAM ITEM FOR CONTENT GOAL:
assess career information needs (Content goal #44)

SKILL TEST ITEM -- Plan to keep abreast of information in student’s field

1. The student is to be evaluated on the content goal: assess career information needs. The rating will be based on performance on each of the items below.

The student:

A. completes assignment on time No Yes
B. uses correct grammar and spelling No Yes
C. prepares assignment according to directions No Yes
D. selects appropriate professionals to interview No Yes
E. develops questions that solicited needed information No Yes
F. indicates key resources were identified No Yes
G. indicates an understanding of the relevance of information to career field No Yes
IFL100

Information Literacy

MODULE FOR CONTENT GOAL:
discuss ethical use of information

INSTRUCTIONAL TOPIC
discussing ethical use of information

PREREQUISITE(S)

summarize information laws
associate information and citizenship

DIRECTIONS FOR MODULE 14
Assignments for this module are due by the 15th week of the semester. Completed assignments may be turned in at the instructor's office or at the Library Circulation Desk. Graded assignments will be available at the Circulation Desk within 48 hours of being turned in.

INTEREST APPROACH  (time: 5 minutes)

What does the student do with all the information the student can find and access? How does the student use it to enhance the student’s life and career? How does the student use information to reach the best decision? What does the student do with controversial or unpleasant information? How can the student be sure the student has the information the student needs? How does the student make the best use of the information the student has? These are tough questions and they are not ones the student can answer one time. The student will be dealing with these questions many times during the student’s professional and personal life.
PERFORMANCE OBJECTIVE

The student will be allowed resources. Performance will be satisfactory if the student develops an information code of ethics. The code should indicate that the student comprehends the appropriate use of information in the student’s career area.

STARTING POINT PRE-TEST  (time: 0 minutes)

No starting point test: The instructional approach begins at ground level.

EXEMPTION TEST

No exemption test is offered.

LEARNING EXPERIENCES

SUBGOAL TOPIC: summarize information laws. (time: 90 minutes)

1. The student will read the First Amendment of the U. S. Constitution. (Seek assistance from Reference staff in locating this)

2. The student will identify three laws related to information. The student may use any resource to identify these laws -- books, articles, librarians. The student will summarize the main points of the three laws dealing with information. The student will be dealing with access to information, restriction of access, copyright, censorship.

3. The student will describe how to get something copyrighted. (Reference collection)

4. The student will read one legal case having to do with the use of information.

SUBGOAL TOPIC: associate information and citizenship. (time: 180 minutes)

1. The student will think about the student’s role as a citizen. The student should list the roles of a citizen. (Record in journal)

2. The student will look at the roles of citizens -- voters, taxpayers, users of services and programs. The student will indicate how information would be important in these roles. (Record in journal)

3. The student will obtain a list of local, state and national governmental representatives. (Reference desk)
4. The student will examine the federal budget. (Reference collection)

5. The student will examine the state government manual. (Reference collection)

6. The student will attend a County Commission meeting (Schedule is in the newspaper or call Commission for meeting times) and summarize the meeting. The summary should include issues discussed and how information was used during the meeting. (Record in journal)

**SUBGOAL TOPIC:** discuss the ethical use of information (time: 120 minutes)

1. The student will define "ethical use" in the student's own words. The student should consult dictionaries or articles for help with this assignment. The student should ask three people their definition of "ethical use" of information and record their responses. (Record in journal)

2. The student will interview a faculty member concerning the ethical use of information in the student's career area. (Record summary of interview in journal)

3. The student will determine if there is a code of ethics for the student's field and read the code. (Consult a reference librarian)

4. The student should discuss the following topics in relation to the ethical use of information

   - coverage of issue
   - sufficient information
   - controversial issues
   - source of information
   - credibility of information
   - confidentiality
   - opinion
   - fact

   The student should relate the student's comments to the student's career area or a matter of public interest. (Record in journal)

**POST-TEST** (time: 30 minutes)

The student will write an information code of ethics indicating the appropriate use of information in the student's career area.
REFERENCES AND RESOURCES

Consult with Reference staff
Reference collection -- directories of government officials
Consult with public officials

Developed/Revised: 04/9/95
EXAM ITEM FOR CONTENT GOAL:
discuss ethical use of information (Content goal 47)

TRUE/FALSE

1. Information should be treated as a powerful resource that places responsibilities and obligations on the user.
   T F
   Answer: True

2. Many professions have codes of ethics that discuss the appropriate use of information.
   T F
   Answer: True

3. The ownership and use of information is not protected by either federal or state laws.
   T F
   Answer: False

4. All citizens are well informed on issues before they vote.
   T F
   Answer: False

COMPLETION

1. List three factors that should be considered about information before action is taken based on that information:

   _____________________________ _____________________________

   Answer: coverage of issue, source of information, credibility of resource, confidentiality, opinion or fact.
2. The importance of information to a democratic society is indicated in the _______ of the U.S. Constitution.
   Answer: 1st Amendment

3. Information is a commodity that can be owned, sold, traded. The ownership of information is protected by _____________________.
   Answer: copyright.

4. List three issues that would require information before reaching a conclusion or taking a stand.
   _____________________.
   Answer: Health care reform, abortion, capital punishment, gun control, welfare reform; any issue that evokes strong proponents or advocates.

5. Restricted access to information is referred to as _____________________.
   Answer: censorship.

ESSAY

Discuss one of the following issues in relation to information:

Information and a democratic society
Privacy and confidentiality
Freedom of speech
Censorship
EXAM ITEM FOR CONTENT GOAL:
discuss ethical use of information (Content goal 47)

SKILL TEST ITEM -- Code of ethics

1. The student is to be evaluated on the content goal: discuss ethical use of information. The rating will be based on performance on each of the items below.

   The student:

   A. completes assignment on time
   B. uses correct grammar and spelling
   C. prepares assignment according to directions
   D. indicates respect for confidentiality
   E. realizes information has to be evaluated
   F. realizes impact of information -- beneficial and detrimental
   G. understands legal implications related to information

   No Yes
   No Yes
   No Yes
   No Yes
   No Yes
   No Yes
   No Yes
VITA

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PROFESSIONAL HISTORY

Central Piedmont Community College
  Director, Library Services, 1990 to present
  Senior Librarian, 1987 to 1990
  Reference Librarian, 1983 to 1987
  Cataloger, 1978 to 1979; 1981

Pennsylvania State University
  Reference Librarian, 1966 to 1969

New Jersey State Library
  Reference Librarian, 1965 to 1966

EDUCATION

Doctor of Education, 1995
  Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
  Community College Administration

Masters of Arts in Higher Education, Adult Education, 1990
  Appalachian State University
Master of Science in Library Science, 1965

Drexel University

Bachelor of Arts, English, 1963

Pennsylvania State University

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