RUNNING HEAD: ROADMAP TO LIBRARY RESOURCE & RESEARCH SKILLS

Susan Goldman, Lydia Hunter, and Nora M. Shelton

University of Denver
Introduction

Academic library instruction programs are usually developed for incoming undergraduate students. However, graduate students, especially those who have been out of school for several years, also need this introduction (or refresher) to basic library knowledge, information-seeking strategies, and using library technologies (Jankowska, Hertel, & Young, 2006). General purpose library education courses, which are open to graduate students across all fields of study, can effectively fill this need, though recent literature cites higher rates of information retention are achieved when formal library instruction targets a specific discipline (Cheney, 2004).

Additionally, while there is no single graduate student learning style, studies support a preference for a learner-centered approach that combines structured instruction (pedagogy) with independent learning methodologies (andragogy) (Barton et al., 2002; George et al., 2006).

The workshop series entitled ROADMAP TO LIBRARY RESOURCE & RESEARCH SKILLS: WORKSHOPS FOR THE NEW LIS STUDENT unites these concepts and learning preferences. Developed by Penrose librarians and Library and Information Science (LIS) faculty, the primary purpose of this collaboration is to help students build a foundation of library knowledge that supports successful completion of LIS coursework.

Audience Assessment

Graduate students are independent learners and heavy users of databases and Internet resources for their research. They also recognize the need for assistance in using the library, appreciate opportunities for personal library instruction, and will seek out resource guides and tutorials to manage their own learning experience (Barton et al., 2002). The average age of students in the Library and Information Science program at the University of Denver is 36, which means most are returning to higher education years after completing their undergraduate studies. Although they bring with them a wealth of life and work experience, and most are
comfortable learning and using technology, at the beginning they often lack the refined information literacy skills that academia demands. This disadvantage is resolved as students advance through their core courses and accumulate experiences by practicing what they have learned, yet students need basic information literacy skills sooner. LIS faculty and Penrose instruction librarians identified the top three challenges facing new LIS students to be a) conducting research, b) writing graduate level papers, and c) knowing what resources and tools are available through Penrose Library. From this assessment it is clear that early library instruction is needed to help new students acclimate to the demands of a master’s program, and that it be geared to the preferred learning styles of graduate students, incorporating examples and resources relevant to the LIS curriculum.

Instruction Scenario

This workshop series was developed to give students an opportunity to preview resources and skills taught throughout the LIS curriculum. It also expedites LIS social networking and sharing knowledge with peers, which are natural outcomes of the graduate school experience. Lesson plans incorporate various teaching methods: structured (lectures, demonstrations, and process documentation), active learning (hands-on, discussion, and group activities), and self-directed learning aids (tutorials, resource guides, and Internet pathfinders). Information-seeking examples are taken from the core curriculum, so students can apply their new skills to actual assignments.

Jiao and Onwuegbuzie (1998) identified five dimensions of library anxiety, of which three are relevant to the way LIS students may feel at the start of their graduate studies. The Roadmap workshops help students overcome these common issues of library anxiety, including barriers with staff (perceiving the librarians and staff as intimidating), knowledge of the library
(unfamiliarity with the organization, resources, rules, and services), and technical barriers (unfamiliar or uncomfortable with the computers, software, and other library technology).

The Roadmap workshops are offered in conjunction with LIS program orientation, and repeated quarterly or on an as needed basis. Penrose librarians and experienced library students conduct the 60-minute sessions. For continuity, students are advised to attend the first five in the order listed, although this is not required.

1. **Library Services, Collections and Resources**

   Learning objectives: understand how Penrose materials are organized, become familiar with library services and resources, and explore the Penrose Web portal.

2. **Searching Peak: The Library Catalog**

   Learning objectives: use Peak to locate books, reference materials, e-books, government documents, maps, and print periodicals; locate and request materials in Prospector; and request an interlibrary loan.

3. **Basic Research Strategies**

   Learning objectives: understand the concepts, techniques, and tools for creating an effective search strategy, and become familiar with typical LIS research assignments.

4. **Databases for Librarians**

   Learning objectives: become familiar with LIS-specific research databases, conduct keyword and subject searches, locate and assess results, and refine searches using basic database features.

5. **Advanced Database Skills**

   Learning objectives: use advanced search options, understand how to use the built-in database features (thesaurus, subject guide, index, journal list, and more).
6. Internet Resources for Librarians

Learning objectives: become familiar with free Internet reference resources, including tutorials, pathfinders, resource guides, open access databases, academic and government resources and virtual directories created for librarians and information specialists.

7. Evaluating Internet Resources

Learning objectives: understand some basic techniques for evaluating and validating Internet resources.

8. Academic Writing Skills in the APA Style

Learning objectives: to become familiar with the basics of the writing style of the American Psychological Association (APA), and most particularly how to use the APA Publication Manual to appropriately write papers and cite sources.

Teaching Methods and Theories

The theory and practice of andragogy, defined in Cyr (1999) as “the art and science of helping adults learn” was extensively utilized in the development of this workshop series (p. 2). The tools and techniques that are presented are intended to go beyond helping students with a particular assignment, or even a particular class. The aim is to develop and encourage skills necessary for academic success in a competitive master’s program and life-long learning beyond that. Information literacy skills, like those presented in this series, are constantly transferable and updateable. The belief is that students will take what they learn in these workshops and be able to immediately transfer these skills to their educational, professional, and personal pursuits for information.

In order to gear these workshops to the adult learner, numerous characteristics of this population were examined and applied. For example, Cyr (1999) notes one of the characteristics of the adult learner is to “have more and different kinds of life experiences, organized
differently, which may block, modify, or otherwise affect perception, problem solving, and decision making” (p. 3). In order to address this characteristic, we call on the audience throughout presentations and encourage them to share past experiences and explain the applicability to the current information need. Cyr (1999) also notes that adults “usually find no ‘correct’ answer for most problems studied/lived” (p. 3). This is another point stressed in these presentations. Instructors encourage a variety of strategies and ideas and emphasize that often times there is no one right answer, but multiple perspectives for approaching a problem. Instructors do not present themselves as having all the answers; rather they are there to facilitate discussion and exploration of the many possibilities.

In addition to gearing these workshops to adult learners, different learning styles were taken into consideration. Kolb’s theory as presented in Bodi (1990) was referenced in designing workshops that incorporate experiential learning for different learning styles. Bodi (1990) explains the theory of experiential learning focuses on ideas that “are not fixed but are formed and reformed through experience. The emphasis is on process rather than on outcomes” (p. 115). This is a key concept in the design and purpose behind these workshops. Throughout the series, students are taught the processes of utilizing many valuable tools for information access. Although specific assignment types may be used for examples, the focus remains the transferability of this skill set.

As an example, in the Basic Research Strategies session a scenario is given to students in the form of an article critique assignment and research to be conducted in a specific EBSCO database. Before demonstrating search strategies, students are asked to share their own techniques for orienting themselves in any database. Although the hands-on example may only include an EBSCO database, students come away with key, transferable strategies for approaching any database.
In order to engage multiple learning styles, we selected those presented in Bodi (1990): divergers, assimilators, convergers, and accommodators (p. 116). Although there are many theories on learning styles that define learners in different ways, Kolb’s theory in Bodi (1990) provided a manageable range of learning preferences that we felt we could accurately address within the scope of these workshops.

According to Bodi (1990), divergers “learn best through a combination of concrete experience and reflective observation” (p.116). This learning style is addressed by allowing students time to share their own experiences and past strategies in addition to the instructor-led demonstration. Assimilators are learners who “combine abstract conceptualization and reflective observation” (p. 116). While it is difficult to incorporate theory into a practical lesson such as these workshops are designed to be, background information on learning behaviors of adults is presented in conjunction with the teacher-led demonstration. Convergers “learn best through active experimentation and abstract conceptualization” (p.116). These learners are addressed through the background information mentioned for assimilators as well as hands-on activities that allow students time to experiment outside of instruction. Finally, accommodators “learn through active experimentation and concrete experience” (p.117). These learners are engaged by both the experimentation mentioned for convergers, and the chance to share past experiences mentioned for divergers.

Active learning techniques are incorporated into each lesson; these are based on suggestions found in both Roy and Novotny (2000) and Andrews (2006). Students will always be given time to experiment and experience for themselves whatever tools are being presented. In the example lesson of the Basic Research Strategies workshop, students are given time to explore the database on their own and encouraged to reflect on past experiences using databases. A similar component is incorporated into each lesson.
Learning Objectives

In order to measure student learning, objectives have been developed for the workshop series. Acquisition of these objectives can be tracked informally in each workshop by simply asking students by show of hands if they are, for example, able to phrase their information need. A short electronic survey will also be distributed used at the end of each workshop session to further assess learning. The workshop series objectives and assessment goals are:

- Students will be able to identify their information need: Ninety percent of students will be able to express their information need in a short phrase after attending the first workshop.

- Students will be able to identify possible resources that are applicable to their information need (from within Penrose Library’s holdings): Seventy percent of students will be able to name three resources held by Penrose where they may seek information to address their need after attending at least two workshops.

- Students will be able to conduct a search: Seventy percent of students will be able to utilize the search interface of Peak Online Catalog, EBSCO or other database, or an online tool such as Google Scholar to conduct a keyword or controlled vocabulary search after attending at least two workshops.

- Students will be able to evaluate search results including selecting and eliminating resources: Seventy percent of students will be able to select several resources returned from a search and utilize them in an assignment or other class task after attending at least two workshops.
Lesson Plan Outline

Now we turn our attention to one specific workshop in the series. Following is the Lesson Plan Outline for Session 3: Basic Research Strategies.

Handouts:

- Printout of Power Point presentation in Notes format (for students to follow along, take notes, use later as a reference) (See Appendix A)
- Information Seeking Process Roadmap (See Appendix B)
- Pathfinder of Resources for LIS students (See Appendix C)

Overview of the need for these workshops

State objectives and Review Roadmap

Article critiques

Effective searching and searching objectives

Discussion/definition of databases

Active Learning: Assignment - define peer reviewed/scholarly journals

Searching for an appropriate scholarly article using the Penrose website

Step-by-step instructions for getting into a database in the Penrose website, and explanation of the screens

Using LISTA database with Basic Search and Advanced Search

Evaluating and locating an article

Closure: Review objectives, discuss Pathfinder, answer questions, and request completion of evaluation
ACRL Standards Met

In January 2000 a division of the American Library Association, the Association of College and Research Libraries (ACRL), approved and published the “Information Literacy Competency Standards for Higher Education”. The document defines information literacy, relates it to higher education, and lists five major standards that should guide colleges and universities in student learning in regard to information literacy. According to the College & Research Libraries News (June 2007), the standards are widely used in U.S. academic libraries. The five standards are:

1. The information literate student determines the nature and extent of the information needed.
2. The information literate student accesses needed information effectively and efficiently.
3. The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
4. The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
5. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally. (Information Literacy Competency Standards for Higher Education, 2000)

At the University of Denver, the LIS curriculum as a whole addresses all five of these standards. Our workshop series, as introductory sessions, meet various aspects of these Standards. Session 3, Basic Research Strategies, as described in the Lesson Plan section, primarily addresses the first two.
The first objective of our workshop series is that students will be able to identify their information need. ACRL Standard One, Performance Indicator 1, is addressed by this session in that participants are shown how to determine the information need, specifically the need for a peer-reviewed journal article discussing adolescents and public libraries. We show students some general library and information science databases that are helpful for resources for the topic. We demonstrate how to narrow the results of a search in order to focus the topic and the results. The session identifies the concepts of article critique, databases, and scholarly journal. It also provides the basis for locating an appropriate journal article that the student can read, evaluate, critique, and use to produce new information for her/himself and the instructor.

The second objective of our workshops is that students will be able to identify possible resources that are applicable to their information need (from within Penrose Library’s holdings). Standard One, Performance Indicator 2, is met in Session 3 in the following ways:

The session focuses primarily on electronic databases, and how they are organized and accessed through the Penrose Library website. We show how databases are organized by discipline, and particularly which databases could be the most helpful to LIS students. This session specifically addresses the resources available on the Penrose Library website and databases available through Penrose, and has students search exclusively for peer-reviewed journals.

Objective 3 of our workshops is that students will be able to conduct a search. Session 3 addresses all five performance indicators of ACRL Standard 2 in the following ways.

It demonstrates the scope, content, and organization specifically of one of Penrose’s online databases; and it guides the participant to focus a search, shows basic researching skills needed in order to develop a research plan. Instructors discuss key word searches and using subject terms in citations as other related search terms. In this session we also mention Boolean
operators, promote advanced search techniques in an electronic database, and demonstrate
options in terms of search terms and types of search.

From a review of the workshop objectives and the outcomes listed in the ACRL
standards, it is evident that the standards pertaining to information literacy in higher education
are addressed in our workshops in many ways, even in Session 3 alone.

Assessment Techniques

Assessment of learning is crucial to developing, maintaining, and improving
bibliographic instruction. Many techniques are available to achieve this goal such as quizzes, the
minute paper, online tutorials, questionnaires, surveys, and focus groups.

For the Roadmap workshop series, we chose to develop one basic questionnaire to be
used in all sessions, consisting of six questions addressing student satisfaction and teaching
technique, and optional space for comments (Appendix D). This is a Web survey created using
SurveyMonkey.com (http://surveymonkey.com/Default.aspx) which may be administered to
students by providing the survey URL to the class, so each student can complete the evaluation
online during the last five minutes of class. Alternatively, the instructor may choose to send the
survey URL to each participant by email, an option that makes sense when class runs late or
multiple students shared access to a single computer during the session.

Carini, Hayek, Kuh, Kennedy, and Ouimet (2003) found evidence of a greater response
rate to Web surveys over paper surveys when the evaluation pertained to technology instruction.
This is one reason for choosing this delivery format, and another is that electronic data is a more
efficient means for instructors to collect and analyze student feedback, and then use this
information to improve course content and their teaching methods.
Conclusion

Information literacy skills are vital to the graduate student, and embedded into the profession of the student in the Library and Information Science program. Academic library instruction geared toward adult learners early in the LIS program helps students to develop a foundation of library knowledge and skills to support successful completion of their coursework and readiness to enter the workforce as information professionals. Using the ACRL Standards for Information Literacy, a framework for teaching to adult learners and addressing various learning styles, the series of workshops we have developed provide an introduction to many of the basic concepts and skills refined in the LIS curriculum. We believe these workshops will decrease the “library anxiety” of budding librarians, as well as improve chances for success throughout the program.
References


Appendix A: Power Point Presentation Handout
Appendix B: Information Seeking Process Roadmap
Appendix C: Pathfinder: Selected Online Resources for LIS Students
Selected Online Resources for LIS Students

Penrose Research Guides

Article linker research guide from Penrose on how to link to full text of journal articles:
http://www.penlib.du.edu/FindIt/ResearchGuides/rg_main.cfm?rg_id=233

E-Journal finder from Penrose to locate specific online journals:
http://www.penlib.du.edu/FindIt/ResearchGuides/rg_main.cfm?rg_id=207

Evaluating web and journal articles/sources from Penrose:
http://www.penlib.du.edu/FindIt/ResearchGuides/rg_main.cfm?rg_id=265

Links to different style manuals:
http://www.penlib.du.edu/FindIt/ResearchGuides/rg_main.cfm?rg_id=170

Other Research Resources

Rutgers University "What Makes a Journal Scholarly?" retrieved through PRIMO:
http://www.rci.rutgers.edu/~estec/tutorials/scholarly.htm

Vaughan Memorial Library from Arcadia University tutorial on evaluating websites:
http://library.acadiau.ca/tutorials/webevaluation/

Boolean logic online tutorial from NYU:
http://library.nyu.edu:8000/research/tutorials/boolean/tutorial.html#

Writing Resources

Texas A&M University Writing Center: http://writingcenter.tamu.edu/content/view/34/76/

Diana Hacker Rules for Writers (for help with APA): http://www.dianahacker.com/resdoc/

General Resources

Librarians' Internet Index: http://lii.org/


Internet Public Library: http://www.ipl.org/

INFOMINE Scholarly Internet Resource Collections: http://infomine.ucr.edu/

Databases and E-Resources at the Library of Congress:
http://www.loc.gov/rr/ElectronicResources/dbs.php

LOEX Clearinghouse for Library Instruction, tutorials: http://www.emich.edu/public/loex/tutorials.html

Compiled November 2007 by Susan Goldman, Lydia Hunter, and Nora Shelton
Susan.Goldman@du.edu; Lydia.Hunter@du.edu; nshelton@du.edu
Appendix D: Basic Research Strategies Evaluation
At the conclusion of each workshop, the instructor invites students to complete a short Web survey, by providing the URL to them at the end of the session or in a follow-up e-mail.

Thank you for attending the Basic Research Strategies workshop on 11/17/2007.

Please take a few minutes to tell us about your experience by answering this short survey (3 minutes).

http://www.surveymonkey.com/s.aspx?sm=h0PlUu3p4TbAiz5Jh9zsQ3d_3d

Thank you.

Penrose Instruction Librarians
Susan Goldman, Nora Shelton, and Lydia Hunter

To protect your privacy, your email address will not be associated with your submitted survey. If you desire a response to any question, please enter your email address in the Question #6 response field.

Survey results are instantaneously collected and easily processed into reports, such as the example for Basic Research Strategies workshop presented here.