



Engaging undergraduates in discipline-based research

Heidi Gauder and Fred Jenkins

Roesch Library, University of Dayton, Dayton, Ohio, USA

Engaging
undergraduates
in research

277

Abstract

Purpose – This article aims to describe the standards-based approach used to build the International Studies Research Methods (INS250) course, a discipline-specific, credit-based class taught by librarians. This writing-intensive course emphasizes information literacy and critical thinking skills, which were developed using written assignments, class presentations, multiple assessment methods, and web-based applications.

Design/methodology/approach – This paper will review the literature about discipline-specific, credit-based information literacy (IL) courses and outcomes. It will also analyze the INS250 course structure and map ACRL Information Literacy Competency Standards for Higher Education to learning outcomes for the course.

Findings – The paper finds that, in the absence of discipline-specific information literacy standards, the ACRL Information Literacy Competency Standards for Higher Education can serve as a starting point for International Studies course outcomes and assessment. Other assessment approaches, specifically student workshops and concept maps, promote student engagement and provide ample evidence of student learning.

Originality/value – This article will identify research skills needed by International Studies majors and students in similar multidisciplinary programs. It will serve as a model of how to build a credit-based course with application to other fields such as political science, sustainability, human rights and international business. The course is student-focused and responsive to new disciplines and areas, with an emphasis on disciplinary databases, search skills, and citation skills.

Keywords Information literacy, Teaching methods, International studies, Credit-based courses, ACRL standards

Paper type Case study

Received 8 February 2012

Accepted 9 February 2012

Introduction

Several years ago the authors were asked to teach a research methods course for International Studies majors (INS 250). It is distinct from usual library instruction in several ways. INS 250 is a for-credit course in the discipline rather than an offering of the library. It is required of all majors. The course is entirely designed, taught, and graded by library faculty. This article will discuss the origins of the course, its objectives, design, content, and what was learned. Since the design of the course is based on current information literacy standards as well as the curriculum of the international studies program, it provides a potential model for similar courses in other disciplines as well as other research methods courses in international studies.

Literature review

While much has been written on library instruction and information literacy, relatively little of it addresses libraries and discipline-specific research methods classes with the notable exception of literary studies, for which see the “User Education” section of “Studies of interest to literature in English librarians” (Literatures in English Section ACRL, 2010). Unfortunately, literary research is very different from that of most other



Reference Services Review

Vol. 40 No. 2, 2012

pp. 277-294

© Emerald Group Publishing Limited

0090-7324

DOI 10.1108/00907321211228327

fields and offers little here. An obvious starting point for international studies is the Information Literacy in Global/International Studies page on the ACRL wiki (2010). Although the content is relatively sparse, it includes links to accrediting agencies, along with a few articles and conference presentations. The site indicates that there are no established information literacy standards specific to international or global studies. The Law & Political Science section of ACRL (2008) developed a set of political science research competency guidelines, which are “intended to illustrate the application of information literacy standards to research in political science and related disciplines, including public administration, law, criminal justice and civic education”. These competencies map the ACRL information literacy competency standards for higher education to a disciplinary framework, but they do not cover the multidisciplinary needs of an International Studies program in any real sense.

Relevant studies in the library literature fall into three broad categories: discipline-based information literacy courses, librarians teaching courses for academic departments, and the assessment of discipline-specific information literacy skills. The more salient of these are discussed here.

Discipline-based information literacy classes

The most recent and comprehensive contribution in this category is Hollister (2010). The book deals with multiple aspects related to for-credit information literacy courses. Three papers within this volume are of particular interest. Johnson and Gonzalez (2010) discuss a for-credit information literacy course for honors science students at the University of Florida. Their course has a strong focus on the structure of the literature and the nature of scholarly communication in the sciences. It also emphasizes writing in the discipline with a research proposal as the final project. Wheeler *et al.* (2010) describe a credit-bearing information literacy course for the engineering school at the University of Wisconsin-Madison. It is a hybrid online and face-to-face course, which covers search strategies, different types of publications and their purposes, and relevant databases. Assignments include several searching exercises, with an annotated bibliography as the final project. Ellis and Wiegand (2010) write about creating required information literacy courses for criminal justice and speech-language pathology at the University of Northern Colorado. The courses are discipline-specific sections of a general information literacy course, LIB 150 Introduction to Undergraduate Research, which tailors content and approach to the discipline. While the authors view this as a successful model for library instruction as a whole, they note the difficulty of achieving faculty buy-in and the lack of resources as major obstacles to offering courses in other disciplines. All three papers outline learning outcomes or skills, but none explicitly put these in the context of general or discipline-specific information literacy standards.

Nelson (1990) focuses on his course Geographical Research Methods. Although writing from the perspective of a geography professor, he places heavy emphasis on library research skills such as using the online catalog, book reviews, general reference resources, journal indexes, government documents, and bibliographies. The article is especially useful in providing a teaching faculty perspective. Polkinghorne and Wilton (2010) discuss a course, Political Studies, at the Augustana Campus of the University of Alberta. It is taught by a faculty member in political science, with an embedded librarian participating in five of 12 content modules. The course has a threefold emphasis: information literacy, research skills, and political science research methods.

Student learning is assessed primarily through six hands-on assignments. The article covers course design and evaluation, but it does not offer much on the specific course content. Information literacy standards are mentioned in passing, but not systematically related to course content. Kitchens (2006) gives examples of source types that history students need to know such as indexes and databases, newspapers, government publications. These have a significant overlap with sources needed by students in International Studies and other social science disciplines. While useful for content ideas and approaches, the article is geared to the one-shot library instruction session rather than a systematic methods course. Also worth noting is Cook and Cooper (2006), a collection of papers on teaching information literacy skills in the social sciences. The authors focus on integrating library instruction into courses in the disciplines, either as one-shot or multiple sessions. They are useful for content and teaching approaches and usually relate these to the ACRL Information Literacy Standards (Association of College and Research Libraries, 2000).

Malone *et al.* (2006) describe how integrating ACRL information literacy standards in courses helps instructors promote research competencies. They outline a collaborative project between librarians and political science faculty at the US Naval Academy to show how the standards can be integrated into the curriculum. Stevens and Campbell (2008) provide a brief synopsis of the history of information literacy as a concept and of the development of standards. After reviewing the drawbacks of the generic one-shot library instruction session and noting improved outcomes from multiple, shorter sessions, they describe their experiences in integrating more subject-specific instruction into lower division political science courses. While their subject scope is far narrower than that required for an interdisciplinary International Studies curriculum, it provides useful concrete examples for course designers.

Librarian teaching courses for academic departments

These articles look at the role of librarians teaching in the various disciplines, but do not focus on the teaching of research skills. Blakeslee (1998) describes her experiences as a librarian who somewhat reluctantly agreed to teach a freshman orientation course. Her article describes the challenges and benefits of doing so. The course included a substantial general information literacy component. The major benefits she notes are improved relationships with faculty and a better understanding of students. Auer and Krupar (2005) describe their experiences teaching library skills at Virginia Tech. While they prepare and teach sessions as well as designing and grading assignments, they do this in the context of a regular course designed and taught by the teaching faculty. Kemp (2006) reviews earlier literature on librarians teaching courses (primarily in academic disciplines rather than library courses), noting the pros and cons especially with regard to faculty status and to personal and professional development. Jenkins (2009) addresses the benefits of teaching in one's subject specialty, such as stronger relations with students and teaching faculty, better knowledge of student needs, and greater credibility as a faculty member.

Assessing discipline-specific information literacy skills

There is scant literature on the assessment of discipline-specific information skills. Goebel *et al.* (2007) describe assessment techniques used for discipline-specific information literacy courses at the Augustana campus of the University of Alberta. These courses are for upper-level students and are paired with required co-requisite

research courses in the discipline. They focus on pre-and post-tests and student responses to surveys as measures of learning. Polkinghorne and Wilton (2010), already mentioned above, also discuss assessment of student learning but primarily in the context of hands-on assignments. Brown and Kingsley-Wilson (2010) discuss using assignments for assessment in the context of teaching information literacy skills to journalism students. They do this by mapping assignments to both disciplinary learning outcomes and to ACRL standards. There are no studies of the longer term impact of such courses, although this has been addressed more broadly in studies of general information literacy courses. For example, Wang (2006) found that students who have taken such courses include more and better citations in their papers and get better grades.

Background

The approach to teaching research methods varies across departments and disciplines at the University of Dayton. Some departments have no clearly identified research class, some offer capstone courses which include discipline-specific research expectations, and other departments have a clearly identified research methods course. The library's involvement with these courses is sporadic at best, and highly dependent on the teaching faculty – librarian working relationship. Most students are taught basic research skills in their first-year English Composition courses, but beyond these sessions, students do not consistently receive systematic exposure to advanced library and web research skills in their disciplines.

In Fall 2007, librarians were invited to provide feedback about a proposed research methods course for the International Studies (INS) program. According to the course proposal, exit interviews with seniors in the INS program and discussions within its advisory council indicated that both students and faculty were concerned with student research skills, specifically their abilities to locate resources related to international topics (Darrow, 2007). Two librarians had already been teaching a one-credit research methods course (PHL240) for the Philosophy Department, and the International Studies director deliberately modeled the proposed course content after this one. In the case of PHL240, the librarians were essentially teaching for the Philosophy Department through a special arrangement with the Libraries; course credit was assigned from the Philosophy Department, not the Libraries. Even though the PHL240 course was not a library offering and the librarians were teaching for Philosophy, it nonetheless fulfilled the basic duties of the Libraries' instruction program, and as such, was taught on library time. In addition to consultation with instruction librarians, the International Studies director also secured support from the University Libraries Dean, an important consideration since the INS250 course would likewise be taught on library time.

The INS250 course is co-taught by two librarians, the Associate Dean for Collections and Operations and by the Coordinator of Instruction and Reference. This association came as a result of close working relationships by both the Associate Dean and the Coordinator with the director of International Studies. The Associate Dean and the Coordinator had also worked together on PHL240, which the INS250 course closely resembles.

Learning outcomes

INS250 was created by the International Studies Program director in consultation with the library. Since International Studies is a program rather than an entire department,

the number of core International Studies courses is small. Thus, the director was able to add this required course, which was approved by the College. Once the course was approved, however, development of the syllabus and assignments was left entirely up to the librarians.

As with many other International Studies programs, the INS curriculum at the University of Dayton emphasizes a multidisciplinary approach. Reilly (2006) notes that INS programs “do not purport to train experts on a particular subject or in a particular discipline but rather to introduce students to many different approaches to understanding.” This observation is corroborated by past and present INS directors at the University of Dayton. This program serves students with a variety of disciplinary interests. The directors indicate the INS majors must conduct research in a variety of fields and as such, they require a firm grounding in basic research tools as well as an ability to quickly and correctly utilize a growing number of databases.

The stated course intent is to introduce students to the basic resources necessary to write 300- and 400-level research papers. The student outcomes articulated for the course reflect this aim. Although the course outcomes were written by the program director without consideration of ACRL Information Literacy Competency Standards (ACRL Standards), they do match certain parts of the ACRL Standards, especially when compared side by side. It was a fairly simple step, then, to translate course outcomes to outcomes already developed by the library profession so that these can be used as an assessment tool in conjunction with the assignments (Table I).

Course design and curriculum

The following description of INS 250, Research Methods Course, appears in the University of Dayton undergraduate bulletin: “An introduction to the practice of locating aids and source materials needed to conduct research on international topics” (University of Dayton, 2011). Aimed primarily at second-semester first-year students, the course is taught in the Spring semester at 8:00 a.m. The early morning time slot was deliberately selected, as it is a non-conflict time with other classes and because it also provides an opportunity to reserve the use of a nontraditional classroom, which happens to be located in the library building. Presumably due to the early meeting time and the fact that the course is a relatively new program requirement, some second-semester first-year students have avoided signing up for the class. As a result, upper class students have consistently appeared on the roster.

Although a multidisciplinary program, there is a distinct emphasis on citing sources using the Turabian manual. As such, the course textbook is simply the Turabian manual. We adopted this citation style originally because the program director at the time, a History faculty member, preferred the Chicago Manual citation style. Given that Turabian’s *Manual for Writers of Research Papers, Theses, and Dissertations* is essentially the same as the *Chicago Manual of Style* but intended for student writers, we assign Turabian instead. The current director is also a History faculty member and so we continue to use Turabian. During the citation workshop conducted early in the course we discuss different citation styles and their relationship to particular disciplines and their values. If there is a shift in the disciplinary emphases of the director or program, we will likely switch over to APA style.

The course meets once a week for 13 weeks, nearly the length of a semester. Grading is based on attendance, six brief review papers, and a cumulative annotated

Table I.
INS250 course outcomes
mapped to ACRL
information literacy
competency standards

Course outcomes, as written in the course proposal	ACRL information literacy competency standards
a. Students will learn key finding aids needed to conduct and write research for classes in the social sciences and humanities at the 300 and 400 level	Standard Two: The information literate student accesses needed information effectively and efficiently
b. Students will learn key reference works needed to conduct and write research for classes in the social sciences and humanities at the 300 and 400 level	Standard One, The information literate student determines the nature and extent of the information needed Standard Two: The information literate student accesses needed information effectively and efficiently
c. Students will learn how to compile a working bibliography of secondary works and annotate it in preparation for writing a literature review	Standard Three: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system Standard Four: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose Standard Five: 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
d. Students will be introduced to the concept of questions as the driving component of research projects in the social sciences and humanities	Standard One: The information literate student determines the nature and extent of the information needed
e. Students will learn how to find published primary sources for 300- and 400-level research projects in the social sciences and humanities	Standard Two: The information literate student accesses needed information effectively and efficiently

bibliography. Students must select a topic that relates to international studies at the beginning of the semester. They are also welcome to piggyback the work for this class with another course’s research paper. The course is taught face to face, with supplemental material and communications delivered via the University’s content management system, Sakai.

Since the International Studies program resides within the College of Arts and Sciences, primary emphasis is given to resources that students can use for Humanities and Social Sciences courses. There is a growing interest in international business, a focus that will likely affect the course content the next time it is taught. In addition to lectures about print and online reference sources and the online catalog, particular attention is given to a core set of resources, which include CIAO, JSTOR, LexisNexis, and the EBSCO interface. There are also lectures on primary sources, both in terms of identifying relevant proprietary databases as well as locating federal and international government documents. Emphasis is also given to understanding the structure and

form of database interfaces so that students recognize how to conduct advanced searches, utilize truncation symbols, and identify limiters, regardless of the interface.

The course is not completely resource-based, however. Besides introducing students to a variety of databases and search platforms, students also learn about Boolean searching, subject headings, and proper citation. The course also stresses the importance of understanding the difference between primary and secondary sources, formulating research questions, as well as keyword and subject searching. With every written assignment, students work on evaluating sources. The course utilizes an active learning approach through hands-on workshops and other opportunities for participation and engagement. A mix of lecture and student activities, the course curriculum reflects another trend in the International Studies field, state-of-the-art pedagogical approaches (Reilly, 2006).

Assignments

Students must complete six brief writing assignments, which are primarily annotated bibliographies and database reviews. The final paper is a cumulative annotated bibliography. Taken together, students must locate and evaluate reference sources, books, scholarly articles, book reviews, contemporary and historical newspaper accounts, and government documents. They must also evaluate several databases. Students also complete two peer reviews, where they assess each others' written work according to a set of criteria. The final paper serves as a cumulative effort of the prior six papers. It requires a variety of sources and is an opportunity to resubmit earlier work.

Because many students lack critical evaluation skills (Blumberg and Sparks, 1999; Currie *et al.*, 2010; Walraven *et al.*, 2009), the assignments place particular emphasis on evaluation. For most of the annotated bibliographies, students must evaluate resources according to criteria outlined in the assignment. The criteria are generally variations on scope, organization, audience, expertise, and utility. Database evaluation is also important to the course, with at least two papers requiring a comparison and contrast of similar subject databases. In addition to reviewing resources, students also apply critical thinking skills to subject headings, as they suggest new subject headings and develop a brief rationale for the deficiencies of current Library of Congress subject headings. The earlier assignments also require students to write reflective paragraphs describing the research process efforts and successes and/or failures they encountered while completing the assignment.

Citations are also graded very carefully. For many students, this class is their first experience with Turabian and many are shocked after the first paper when they realize the seriousness with which the citations are graded. Accurate citation skills are emphasized throughout the course, from the course textbook to an in-class workshop to assigned points on the grading rubric for every assignment that requires documentation. Students are given a handout to help decode Turabian rules for some of the trickier resources used in the course, and early on they participate in a workshop where they work in pairs to create citations for selected resources. It is not until the first workshop that they see the utility in using the print Turabian. Many continue to rely on the print copy, even after the introduction of RefWorks, an online citation management tool, which they are encouraged to use after the Turabian workshop.

Students are also asked to synthesize their readings and utilize multiple resource types with at least one assignment. The primary sources assignment requires them to

select an historic or contemporary topic related to imperialism or nationalism. They must narrow the topic using the skills they learned to locate relevant reference resources and provide background information about that topic.

Assessment

Given the absence of discipline-specific information literacy standards, we rely primarily on the core ACRL Standards. The University of Dayton maintains a set of General Information Literacy Competencies as well as Graduation Information Literacy Competencies (University of Dayton, University Libraries, 2011). The graduation-level competencies, which this course would exemplify, are determined by individual programs and departments. At the time of this writing, the International Studies program has yet to develop a set of Graduation Information Literacy Competencies. Thus, in the absence of any discipline-specific information literacy standards, we use the ACRL Standards for assessment.

Much class time is spent on lecture and hands-on work to develop mastery of ACRL Information Literacy Standards 1 and 2: the information literate student determines the nature and extent of the information needed, and the information literate student accesses needed information effectively and efficiently. Course assignments are developed not only to review if students can effectively perform Standards 1 and 2, but also incorporate Standards 3 and 5 fairly consistently: the information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system; and 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.

Given the multidisciplinary aspect of the major, the abilities to develop appropriate research questions and conduct effective searches across a wide range of disciplinary sources are important skills. Thus, we introduce many discipline-specific resources but we also require students to evaluate databases in order to gain a clearer understanding of how databases are constructed. Many of these students have career plans in government, international business, and law, where information is often obscured by agendas and biases and require skills involving the close reading and evaluation of texts.

The written assignments generally contain the same elements: citations, evaluation of sources, and reflections of the process. Assignment Two, for example, requires students to locate three books via the online catalog. They must cite the books using Turabian format, write an annotated bibliography according to specific criteria, and they must also include the Library of Congress subject headings. Finally, they must also make up two alternate subject headings that they would assign to the titles and explain their rationale. The assignment requirements map fairly easily to the ACRL Standards (Table II).

In addition to traditional student assessment methods, students are also tested during class workshops and with current technologies. The first workshop, which was added because of student feedback, centers on learning proper Turabian citation style. Students work in pairs to create citations for articles and books that have been selected for them. Afterwards, they must post the citations on classroom whiteboards for feedback. This workshop is scheduled for the second class meeting of the semester so that students can practice early on and recognize the value assigned to creating accurate citations. Following the whiteboard exercise, students are taught RefWorks as a supplement to learning Turabian.

Sample assignment: select books on a specific topic using the library catalog

Standards evaluated

Part 1: Locate three books for your research topic using the library catalog. Include the following:
1. Proper citation in Chicago/Turabian (B) style
2. Library of Congress subject heading(s) for each title

Standard 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
Performance Indicator 3: The information literate student acknowledges the use of information sources in communicating the product or performance
Outcome a: Selects an appropriate documentation style and uses it consistently to cite sources
Standard 2: The information literate student accesses needed information effectively and efficiently
Performance Indicator 2: The information literate student constructs and implements effectively-designed search strategies
Outcome c: Selects controlled vocabulary specific to the discipline or information retrieval source

Part 2: Annotate each book addressing the following questions. Be specific when addressing these questions – the more examples and details you provide, the stronger your annotation will be
What is the topic and scope of the work?
Is it selective or comprehensive in its approach?
Is it well-organized? Does the table of contents enable readers to navigate the work effectively?
Who is the intended audience? How well does it serve them? In what level of international studies class would you use this book?
What are the qualifications of the editor and contributors?
Does it include bibliographies, lists of web resources, etc? Discuss the organization, extent, and value of these (keeping in mind the intended audience!)
Are there indexes? How detailed are they? Is it easy to find what you want using them?

Standard 3: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system
Performance indicator 1: The information literate student summarizes the main ideas to be extracted from the information gathered
Outcome b: Restates textual concepts in his/her own words and selects data accurately

Standard 3: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system
Performance indicator 2: The information literate student articulates and applies initial criteria for evaluating both the information and its sources
Outcome a: Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias
Outcome b: Analyzes the structure and logic of supporting arguments or methods

(continued)

Table II.
Assessment of INS250
homework assignment
using ACRL information
literacy competency
standards

Sample assignment: select books on a specific topic using the library catalog	Standards evaluated
<i>Part 3:</i> Now that you have identified the Library of Congress (LoC) subject headings for your books, create two alternate subject headings that you would have assigned to these titles. Why would you use these headings instead? In other words, what are the weaknesses in the current LoC headings?	Standard 2: The information literate student accesses needed information effectively and efficiently Performance indicator 1: The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information Outcome b: Investigates benefits and applicability of various investigative methods Standard 4: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose Performance indicator 2: The information literate student revises the development process for the product or performance Outcome b: Reflects on past successes, failures, and alternative strategies

Table II.

This course has made use of LibraryThing in order to facilitate understanding of subject headings and subject searching to illustrate the point. After an annotated bibliography assignment that makes use of the online catalog, students are required to sign up for a LibraryThing account and to bring their annotated bibliography to the next INS250 session. During class, they add titles to their LibraryThing account and assign subject tags to the titles. Some students use Library of Congress subject headings while other students create their own tags. The point of using LibraryThing was for students to understand the process of creating subject headings, in some cases; assigning subject headings; and contributing to a cataloging collective. Although the exercise was useful and students appreciated this approach to understanding the function of subject headings, the main point of the exercise was lost. We have dropped this exercise in favor of a written assignment that asks them to create new subject headings and give the rationale for their choices.

Two more workshops testing student skills are also conducted during the semester. Students are given statements outlining research questions and scenarios. Working in pairs, they must use library resources to determine how they would answer the questions, which are customized to the student topics. The pairs are given half of the class time to work together to come up with the answers, which they must demonstrate to the class during the second half of the session. Students are given no time to prepare for the questions prior to class, nor are they given any indication about the class content other than to bring their laptops to class on that day. Students generally take longer to work out the quiz questions during the first workshop session, but the second session usually moves more quickly. Students show not only more research confidence, but they are also choosing appropriate resources and manipulating the databases more effectively, often selecting the advanced search option and using limiters with no

prompting. At this point, all students are expected to have RefWorks accounts and most can easily export citations during the workshop. The International Studies program director is also invited to attend the second hands-on workshop in order to observe the information literacy skills of the majors (Table III).

While the written assignments assess skills related to ACRL Standards for evaluation, these two workshops test the students' abilities to access needed information effectively and efficiently, Standard 2. By the end of the workshops, most students have worked through all five performance indicators associated with Standard 2.

Concept maps are also used to assess student learning. In the penultimate class period, students are asked to draw a map illustrating how they conceive the course content and the research process. The only restriction is that they cannot make a list and that it be completed in 15 minutes. Students are often confused when asked to draw a map, but take to the exercise readily after a bit of thought. Many can identify not only specific databases, but also how and when different kinds of resources, such as primary and secondary sources, reference materials and scholarly articles, should be used. Many of them also include concepts such as subject heading, limiters, RefWorks, and advanced searching within the maps.

The open-ended approach requires students to consider the course content comprehensively and to organize the content in a way that is meaningful to them. As instructors, we review the concept maps to see what students include (or exclude) as we assess the course for next year's syllabus. These maps also offer insight into how students view information sources and connections, sometimes in ways that we do not see. We have used these maps to reshape the course content, particularly how material is grouped on the syllabus and how sources are presented in class. Prior to concept maps, we reviewed course content with clickers, which proved technologically uneven and offered limited ways at getting at student understanding of the course in total. We intend to have students construct a concept map at the start of the course the next time we teach, so that we have a better picture of changes in student learning over the course duration.

Both the final, cumulative written assignment and the concept maps provide great insights into student recall and course learning. Many of the concept maps touch on at least one of the ACRL Standards. Student 1's concept map, for example, shows mastery of Standard 1 (determines the nature and extent of information need), especially as it

-
- A. Cecil Rhodes was the 6th Prime Minister (1890-1896) of the Cape Colony in South Africa. British by birth, he was a strong believer in imperialism and colonialism. Find a relevant article from this time period that discusses his views
 - B. The Grameen Bank, a private commercial organization, has been a champion of micro-lending in Bangladesh for several decades. Find SM Hashemi's 1996 article on the Grameen bank in Web of Science and compare with the results in Google Scholar. Which source lists more articles citing Hashemi's article? Which source would you be more likely to use in order to research forward and why?
 - C. Find a relevant US government document about ethnic conflict in Ethiopia. Export to RefWorks. Next, summarize any current armed conflicts in Ethiopia for the class using relevant sources
-

Table III.
INS250 "pop quiz"
assessment questions

relates to identifying various types and formats of potential sources for information. Student 2's concept map also shows an understanding of some of the ACRL standards, although in a slightly more conceptual way. Student 2 notes that in the research process, one needs to "have a clear understanding of what I aim to do in my research" and to "utilize the resources that will provide me with the most relevant research supporting my topic," both of which clearly align with Standard 1 (Figures 1 and 2).

At present, there is no measure in place to test long-term retention of student learning. However, the former International Studies director notes, "Students who take INS250 arrive in my class well-grounded in the knowledge of finding aids and understanding of the value of an annotated bibliography" (Darrow, 2011). Three graduates of the course are currently employed as student workers at the library's Information Desk, where they answer reference questions after the library staff has left for the day. The Coordinator of Instruction and Reference has also observed longer term skill retention on an individual basis when teaching one-shot library research classes for other courses. Former INS250 students show a quicker grasp of the concepts and materials covered during the session.

Student feedback

At the end of the semester, we conduct our own student evaluations of course content, using both student response systems for multiple choice questions and paper for open-ended questions. With the clickers, most students report that they know more about library research and are more confident in doing library research than when they

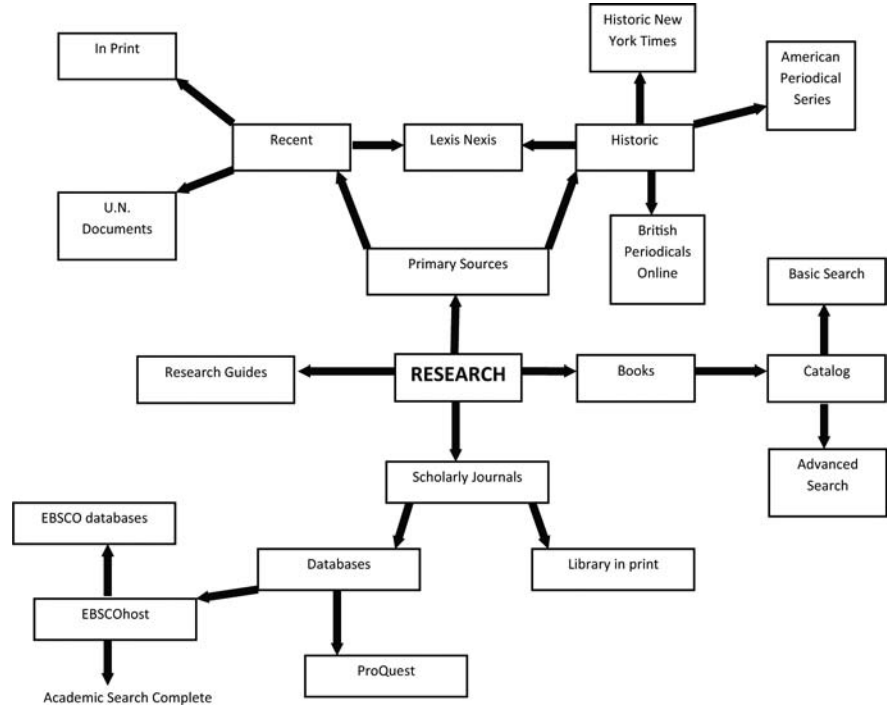


Figure 1.
Student 1 concept map

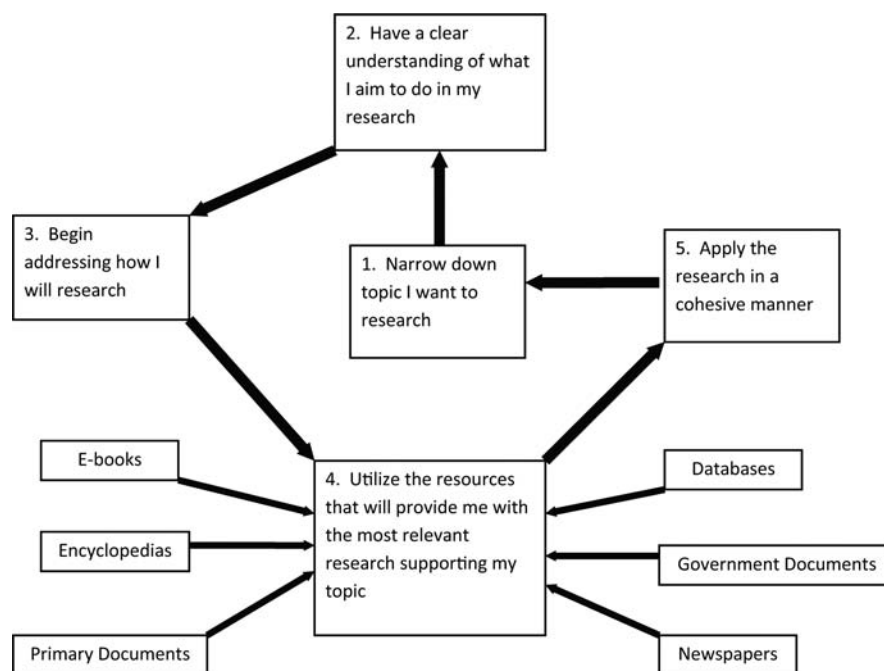


Figure 2.
Student 2 concept map

started the course. With the open-ended feedback, we ask them to identify their favorite database from the course, the three most useful aspects of the course, the least helpful course topic, and suggestions for adding or changing the course content. We advise them that their suggestions are taken seriously and affect course content (syllabus changes have included returning peer reviews to the student under review and more hands-on work, for example). Most do not care for the 8:00 a.m. class time or the writing-intensive aspect of the class, both of which are currently not open to change.

When polled about their favorite databases, students prefer JSTOR, LexisNexis, and the EBSCO interface. Other specific mentions include British Periodicals Online, American Periodical Series, the online catalog, and Google Scholar. When asked about their least favorite part of the course, students disliked being forced to use Turabian, consulting encyclopedias, and evaluating primary sources, namely with British Periodicals online and American Periodical series. The primary source preferences vary radically, depending on the student's concentration. Students with concentrations in business topics tend to find them less useful, while those with humanities-based concentrations do find them useful.

We asked students to identify three things about the course that they found useful. Many of them noted that they were now able to create citations in Turabian format, greater knowledge of various library databases, and using the databases effectively through limiters. Students also mentioned learning about subject headings, primary sources, determining information needs and refining searches, as well as improved research skills in general. Student feedback (Table IV) included the following:

How to make a search more refined/narrowed down, use subject headings to help find similar topics, and how to cite in Turabian/Chicago (Student 1).

Always use an advanced search, look over sources carefully and find words that may help specify your search, the many databases that were introduced (Student 2).

I learned how to better look through a source to determine whether or not it will be a helpful source. I learned about a variety of different databases that have been very helpful in research for papers this semester. I learned how to “search” better by using limiters the databases offers (Student 3).

Discussion

Teaching a credit-based library research methods class for a department offers many benefits. Instructors can more easily assess student learning over the course of a semester and students develop more research skills and resource knowledge than a traditional one-shot instruction session can provide. These classes also facilitate closer working relationships with the teaching faculty. Our classes have been observed by the program director and we have been able to follow up with program faculty to discuss in general how well INS250 students have retained research skills. We have also been able to discuss course research needs with the program faculty as a means of preparing students for those courses. If nothing else, teaching a for-credit course allows for a better glimpse of the work performed by full-time teaching faculty.

In the absence of any formal information literacy standards for International Studies majors, we used ACRL’s Information Literacy Competency Standards for Higher Education as our basis for assessment and mapped them to the course outcomes. The INS250 course outcomes mapped rather easily to the ACRL Standards, even though they were originally developed by others outside the library. These ACRL Standards serve as a good foundation for the basic research skills needed by International Studies majors, although this multidisciplinary program requires knowledge of specific sources and resources beyond what is currently described in the standards.

With our course format, the instructors not only graded student understanding, but the students themselves conducted some of the assessment as well. They wrote peer reviews, which counted for credit; created concept maps that took course learning into

Table IV.
Student feedback mapped
to ACRL information
literacy competency
standards

Category	Total	ACRL information literacy competency standards met
Resources: mentions include databases, primary sources, catalog, encyclopedias, OhioLINK, resource variety	20	Standard 2
Research skills: mentions include research skills, limiters, keywords, subject headings	18	Standard 2
Citation skills: citing sources	12	Standard 5
Determining information need	5	Standard 1
Writing skills: annotated bibliography	2	Standard 4
Evaluating resources	2	Standard 3
Access	1	Standard 2
Grand total	60	

account holistically; and they completed course evaluations, which helped us assess our approach to teaching the class. Having the students evaluate and assess different components proved useful and facilitated a degree of ownership for the course content. In the future we are planning for even more opportunities for student-generated content.

We have integrated applications and technologies into the classroom with varying degrees of utility. We expect students to show familiarity with a RefWorks account during the course of this class and we make use of Isidore, the University's learning management system. We have introduced Zotero in the past, but the real issue is with students effectively constructing correct citations in Chicago format. We have used classroom response systems to gauge student comprehension, but the technology proved cumbersome. Students like the anonymous feedback, so we plan to use PollEverywhere in the future to generate student response. Thus, while there are multiple applications and technologies to foster information literacy, it is important to evaluate whether they truly support course learning outcomes or if they simply get in the way.

The workshops, which include both hands-on work and the pop quizzes mentioned earlier, are also a valuable component for assessing student learning. Students must not only recognize search terms, but they must also identify and use relevant library resources in order to generate appropriate results. In answering what are essentially reference questions on class topics, students are helping their peers conduct research on course topics. The spontaneous nature of the workshop (no study preparation, no notice of workshop content) allows us to directly evaluate student learning as it is occurring.

Concept maps in particular provide wonderful insight into student understanding of the course and students often respond in great detail to the exercise. Some literally draw pictures of computers, people, and the library building while others have arrows and signs pointing in all directions across the page. Although time is likely the biggest culprit in limiting the possibilities in one-shot classes, concept maps require little preparation, technology-wise. They can be used to not only review student learning, but they can also help librarians assess what they are teaching, particularly when teaching multiple sections of the same course.

However, even with the advantages of teaching such a class, there are challenges with this approach. It would be difficult to scale up such a program if the demand merited more courses and it would be difficult to arrange for the sort of classroom space that is currently used. The library has a fairly strong instruction program in place and a move to credit-based information literacy courses would necessitate a major restructuring of the existing program. We currently teach this class on library time, but even so, a lot of the work associated with the program is done after work hours. Both instructors spend time after work developing grading rubrics, writing lesson plans, and grading assignments for the course. Scaling up the number of credit-based courses would have an impact on the librarians' daily workloads. As noted before, there are currently no measures in place that assess long-term retention, so it is unknown how well students are using the research skills taught once they leave class. Needs vary by discipline as well: although we have an understanding of the International Studies curriculum and adjust content based on student feedback and research topics, what one International Studies program offers may be completely different than another school's International Studies program.

Conclusion

There are no national information literacy standards in place for International Studies majors. Nor has the University of Dayton's International Studies Program established overarching learning outcomes, choosing rather to stress flexible, multidisciplinary approaches. The diversity of the students' interests also presents challenges in applying discipline-specific standards, since most are double majors in such fields as politics, human rights, history, business, or languages and cultures and they bring many and varied disciplinary perspectives to the course. Thus, the course we teach relies heavily on the ACRL Information Literacy Standards for Higher Education. We have identified learning goals in individual programs at other universities. Niagra University is one example, which includes the "ability to identify sources of information and courses of study that will answer, solve, and/or inform a question, problem, or field of international study" (Reilly, 2006). This readily corresponds to the first two ACRL standards: to determine the "nature and extent of information needed" and to access "needed information effectively and efficiently." Such correspondences suggest the ACRL standards provide a sound basis for most International Studies students. We will watch for standards from the International Studies discipline, and continue using the ACRL Information Literacy Standards for Higher Education as our external standards in the meantime.

In keeping with this, we emphasize skills that can be used across multiple disciplines since the program concentrations vary so widely. The course teaches search skills, evaluation skills, and the use of RefWorks. It also prepares students for the research demands of the upper-level courses that they take in the social sciences, humanities, and business. Students must demonstrate familiarity with and understanding of the construction of multiple discipline-specific databases as well as knowledge of primary resources. Student learning is assessed using traditional writing assignments as well as testing with impromptu research scenarios and concept maps. By mapping these to the ACRL standards we are able to assess their effectiveness in developing the students' overall information literacy skills and make modifications in topics covered and assignments as needed. The course content will vary somewhat over time, depending on what concentrations students are bringing to the course. In the end, however, we have created a course structure that is flexible enough to adjust to the program's idiosyncrasies each time it is taught, but still covers the basic skills and research content an International Studies major needs to know for upper-level courses and graduation requirements.

Teaching a credit-bearing course requires more than just expertise and enthusiasm for the topic. Library administration support is critical, as are strong faculty relationships. Without both, it is difficult to develop a course, much less sustain and demonstrate its usefulness. Yet the effort is rewarding, since it greatly enhances students' ability to do independent research. We have observed them perform much better in their advanced courses and we have also hired several as student reference assistants. We take great satisfaction knowing that they leave the class with improved research knowledge and information literacy skills.

References

Association of College and Research Libraries (2000), "Information literacy standards for higher education", available at: www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm (accessed 30 October 2011).

-
- Auer, N.J. and Krupar, E.M. (2005), "Librarians grading: giving As, Bs, Cs, Ds, and Fs", *Reference Librarian*, Vol. 43 Nos 89/90, pp. 39-61.
- Blakeslee, S. (1998), "Librarian in a strange land: teaching a freshman orientation course", *Reference Services Review*, Vol. 26 No. 2, pp. 73-8.
- Blumberg, P. and Sparks, J. (1999), "Tracing the evolution of critical evaluation skills in students' use of the internet", *Bulletin of the Medical Library Association*, Vol. 87 No. 2, pp. 200-5.
- Brown, C.P. and Kingsley-Wilson, B. (2010), "Assessing organically: turning an assignment into and assessment", *Reference Services Review*, Vol. 38 No. 4, pp. 536-56.
- Cook, D. and Cooper, N. (Eds) (2006), *Teaching Information Literacy Skills to Social Sciences Students and Practitioners: A Casebook of Applications*, Association of College and Research Libraries, Chicago, IL.
- Currie, L., Devlin, F., Emde, J. and Graves, K. (2010), "Undergraduate search strategies and evaluation criteria: searching for credible sources", *New Library World*, Vol. 111 Nos 3-4, pp. 113-24.
- Darrow, D. (2007), "INS250 course proposal to the Academic Affairs Committee, College of Arts and Sciences, University of Dayton", Memo, 2 October.
- Darrow, D. (2011), "INS student learning, interview – personal communication", 3 March.
- Ellis, L.F. and Wiegand, S. (2010), "Creating required credit IL courses for criminal justice and speech-language pathology programs", in Hollister, C. (Ed.), *Best Practices for Credit-bearing Information Literacy Courses*, Association of College and Research Libraries, Chicago, IL, pp. 126-35.
- Goebel, N., Neff, P. and Mandeville, A. (2007), "Assessment within the Augustana model of undergraduate discipline-specific information literacy credit courses", *Public Services Quarterly*, Vol. 3 Nos 1-2, pp. 165-89.
- Hollister, C. (Ed.) (2010), *Best Practices for Credit-bearing Information Literacy Courses*, Association of College and Research Libraries, Chicago, IL.
- Instruction Section ACRL (2010), "Information literacy in global/international studies", ACRL Wiki, available at: http://wikis.ala.org/acrl/index.php/Information_Literacy_in_Global/International_Studies (accessed 24 October 2011).
- Jenkins, F.W. (2009), "Teaching departmental courses while being a librarian", *WESS Newsletter*, Vol. 33 No. 1, available at: http://wessweb.info/index.php/Teaching_Departmental_Courses_While_Being_A_Librarian (accessed 30 October 2011).
- Johnson, M. and Gonzalez, S.R. (2010), "Creating a credit IL course for science students", in Hollister, C. (Ed.), *Best Practices for Credit-bearing Information Literacy Courses*, Association of College and Research Libraries, Chicago, IL, pp. 93-108.
- Kemp, J. (2006), "Isn't being a librarian enough? Librarians as classroom teachers", *College & Undergraduate Libraries*, Vol. 13 No. 3, pp. 3-23.
- Kitchens, J.D. (2006), "History", in Ragains, P. (Ed.), *Information Literacy Instruction that Works: A Guide to Teaching by Discipline and Student Population*, Neal-Schuman Publishers, New York, NY, pp. 165-84.
- Law & Political Science Section ACRL (2008), "Political science research competency guidelines", available at: www.ala.org/ala/mgrps/divs/acrl/standards/PoliSciGuide.pdf (accessed 24 October 2011).
- Literatures in English Section ACRL (2010), "Bibliography: studies of interest to literatures in English librarians", available at: <http://literaturesinenglish.pbworks.com/w/page/18032964/LES%20Bibliography#user> (accessed 30 October 2011).

- Malone, E.F., Breeden, B. and Robinson, D. (2006), "Introducing information literacy in an international studies curriculum: IPE syllabus and assignment illustration", paper presented at the 47th Annual Convention of the International Studies Association, San Diego, CA, 22-26 March, available at: http://citation.allacademic.com/meta/p_mla_apa_research_citation/0/9/9/0/0/pages99003/p99003-1.php (accessed 30 October 2011).
- Nelson, F. (1990), "Bibliographic instruction in the undergraduate research methods course", *Journal of Geography*, Vol. 90 No. 3, pp. 134-40.
- Polkinghorne, S. and Wilton, S. (2010), "Research is a verb: exploring a new information literacy-embedded undergraduate research methods course", *The Canadian Journal of Information and Library Science*, Vol. 34 No. 4, pp. 457-73.
- Reilly, D.A. (2006), "Revising the international studies curriculum: integrating active learning, interdisciplinary education, and outcomes assessment", paper presented at the 47th Annual Convention of the International Studies Association, San Diego, CA, 22-26 March, available at: http://citation.allacademic.com/meta/p_mla_apa_research_citation/0/9/8/2/6/pages98264/p98264-1.php
- Stevens, C.R. and Campbell, P.J. (2008), "Collaborating with librarians to develop lower-division political science students' information literacy competencies", *Journal of Political Science Education*, Vol. 4 No. 2, pp. 225-52.
- University of Dayton (2011), "Undergraduate Bulletin", available at: <http://bulletin.udayton.edu> (accessed 30 October 2011).
- University of Dayton, University Libraries (2011), "Competency program", available at: www2.udayton.edu/libraries/services/general_competencies.php (accessed 1 November 2011).
- Walraven, A., Brand-Guwel, S. and Boshuizen, H.P.A. (2009), "How students evaluate information and sources when searching the world wide web for information", *Computers & Education*, Vol. 52 No. 1, pp. 234-46.
- Wang, R. (2006), "The lasting impact of a library credit course", *Portal: Libraries and the academy*, Vol. 6 No. 1, pp. 79-92.
- Wheeler, D., Vellardita, L. and Kindschi, A. (2010), "Providing a credit information literacy course for an engineering school", in Hollister, C. (Ed.), *Best Practices for Credit-bearing Information Literacy Courses*, Association of College and Research Libraries, Chicago, IL, pp. 109-25.

About the authors

Heidi Gauder is Associate Professor and the Coordinator of Research and Instruction, University of Dayton Libraries. She is the liaison to the History and Political Sciences departments as well as to the Honors Program. Her research interests include undergraduate research habits, citation analysis, and leisure reading in academic libraries. Heidi Gauder is the corresponding author and can be contacted at: hgauder1@udayton.edu

Fred Jenkins is Professor and Associate Dean for Collections and Operations, University of Dayton Libraries. He also teaches for various departments, including Religious Studies and History. His research interests include Greek and Latin literature, the history of classical scholarship, and research methods and bibliography in the humanities. He is the author of *Classical Studies: A Guide to the Reference Literature*.