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THE ROLE OF LIBRARIES IN HONORS THESIS RESEARCH: A LIBRARY CREDIT COURSE AS A MODEL FOR THESIS RESEARCH SUPPORT

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Libraries exist to serve both the research and instructional missions of their institutions. Supporting the thesis experience of an honors program represents the perfect convergence of these dual missions. The pedagogical mandate for the honors thesis experience is found in the 1998 Boyer Commission Report, *Reinventing Undergraduate Education*, which calls for undergraduate research experiences that incorporate information literacy as well as more advanced information retrieval competencies. *Information Literacy Competency Standards* (Association of College and Research Libraries, 2000) describes in detail the specific competencies that are the basis for selecting, evaluating, managing, and using information.

CHARACTERISTICS OF THE THESIS EXPERIENCE

The honors thesis is considered to be the capstone undergraduate academic experience. Beyond representing the culmination of course work, it can provide a unique opportunity to work in an interdisciplinary mode. Moreover, it provides acculturation to the academic environment and the opportunity to participate in the scholarly communication process. At the undergraduate level, the significance of the acculturation process is equal to, or more important than, the final thesis product. In addition to mastering subject content, students must learn the fundamentals of designing and executing research. Honors theses share several important characteristics: mentorship, originality, acceptability (consistent with current practice in the discipline), and dissemination (resulting in tangible products critiqued by others in the discipline) (Hakim, 1998).

THESIS EXPERIENCES AND THE LITERATURE-GATHERING COMPONENT

Undergraduate honors theses can take many forms, and the thesis experience can vary greatly from student to student. The primary factor that determines the nature of thesis work is the academic discipline. The significant differences that exist in the conduct of research across the sciences, the social sciences, and the humanities are of course reflected in the undergraduate thesis experience as well.

In contrast to many subject areas within the social sciences or humanities, students doing thesis work in the hard sciences and those who do creative projects often miss the critical experience of gathering information to establish their research question. Students in the hard sciences most often participate in ongoing research of the mentor, join a research team, and are assigned specific responsibilities in the lab or for particular subsets of data collection and analysis. There are clear advantages to becoming a peer in a research team. But students who participate in such projects often do not have the opportunity to establish their own research problem, determine the evidence required to solve the problem, select their own methodologies and research parameters, or perform their own literature review.

The polar opposite of this experience is the creative thesis, in which students may complete projects such as writing a computer software program or creating graphic art, performance art, photographic essays, musical scores, etc. Often, these creative theses likewise do not require an

extensive review of the literature and overlook the value of the literature review as the vehicle to provide context and perspective. Students doing thesis work on either of these extremes miss a valuable learning opportunity. Librarians can influence thesis advisors for both the hard sciences and creative projects to call attention to the inherent value in requiring students to perform literature reviews as a fundamental component of their thesis work.

FACULTY ASSUMPTIONS ABOUT STUDENT INFORMATION GATHERING

Faculty sometimes make faulty assumptions about the ability of undergraduate students to retrieve pertinent information. Faculty have developed personal patterns of conducting research, requiring “a long process of acculturation, ...in-depth knowledge of the discipline, awareness of important scholars working in particular areas, participation in a system of informal scholarly communication, and a view of research as a non-sequential, non-linear process with a large degree of ambiguity and serendipity” (Leckie, 1996). They often presume that students have developed a similar personal information-seeking strategy, and that the student has familiarity with the structure and organization of scholarly literature as well as the scholarly communication process. They forget that the student has a narrow perspective, if any, of the nature of the discipline and what it means to be a professional or scholar in that community. Unaware of a student’s linear approach, they presume that the student has internalized the notion of research as a recursive process, repeated for different purposes at different stages in the research. They forget that students often have a low tolerance for ambiguity. Faculty must understand that failure to recognize any of these obstacles can seriously impede a student’s progress.

Librarians as partners in the thesis experience can help bridge these potential pitfalls, can facilitate the process, and can help remove barriers to successful thesis completion.

LIBRARIES AS THE FOUNDATION FOR INQUIRY-BASED AND PROBLEM-BASED LEARNING

Inquiry-based learning and problem-based learning are inherent elements of thesis research. Libraries have the infrastructure to provide the basis for each by precise use of sophisticated database interfaces and other resources. Databases can help to identify a research problem, additional research questions, and gaps in the literature. Initial scanning of databases can provide the critical context for students to understand the broad issues. Many databases support the ability to limit search results to literature reviews or specific methodologies. These search refinements can uncover important specialized treatments and provide models for project design and procedures for accommodating human subject requirements. Specialized print and electronic resources can answer specific questions posed by the research problem. Journals and research reports provide models to cite, present, and report data in a manner appropriate for their discipline.

Initially, undergraduates are anxious to find examples of successful research projects. Unlike graduate students, undergraduates typically have few models available for the design and presentation of a thesis. Examining completed theses allows them to study project organization, research design and methodology, and the standards held by various departments and thesis advisors. This is a particularly important need for students whose thesis work falls outside their academic major. Libraries can satisfy this need to identify successfully completed theses through enhanced cataloging, including searchable abstracts, keywords, and names of thesis advisors, and by employing preservation techniques such as microfilming and binding.

LIBRARY STUDIES 301H - ONE MODEL FOR THESIS SUPPORT

Design

Library Studies 301H [<http://www.libraries.psu.edu/crsweb/infolit/lst301h/>] is offered by the Pennsylvania State University Libraries as one delivery option for students to develop proficiencies for thesis information gathering. It is designed to support students in the early stages of thesis exploration, problem selection, and resource identification. It is especially valuable for students who express the need for a structure to ‘keep on track’, and who perhaps may not have peers in the same discipline or who are at the same stage in the process with whom to share the process. It is offered for one credit, one meeting per week, with intermittent weeks unscheduled for independent work and instructor consultations. The syllabus is flexible, to accommodate students’ prior knowledge, experience, and progress to date. Students use their own thesis topics as the basis for assignments.

Content

Advanced database manipulation

The prime attraction of the course is the focus on learning and practicing advanced database manipulation, which includes demonstrations and practice in selecting vocabulary appropriate for each database, techniques for using embedded thesauri in particular databases, strategies for constructing search statements and combining search statements and concepts, ways to refine initial search results, ways to save search statement histories for later use, use of citation indexing, and learning to ‘read and react’ to each of the citations retrieved.

Identification of appropriate resources

Students learn the nature of the information cycle, which informs the way information is generated, produced, disseminated, and retrieved. Discipline analysis is critical, since it leads students to understand the various patterns of discourse for the problem and where the conversation is reflected in the literature. Students expect to find articles related to their topic but are much less familiar with other supplemental resources. Maps, government documents, dictionaries, encyclopedias, handbooks, annual reviews of research, statistical sources, opinion sources, and much more all have the potential to inform their work. A strategy used in the course is to demonstrate the evolution of the information-gathering process by exploring the relationship and sequence of identifying a research problem, posing questions to be answered, identifying specific formats and data types to answer each question, and then developing strategies to identify such formats in the online catalog, in bibliographic databases, and on the Web. This process results in new ways of thinking about sources and about the research problem.

Research as a recursive process

A key point of emphasis in Library Studies 301H is exposure to and practice in the recursive nature of the research process. Students begin the course with the intent to ‘find information on my topic’ but soon recognize the necessity of conducting their research using a cyclical process. Indeed, the word “re-search” inherently suggests the cyclical nature of this process. They necessarily perform multiple searches in the same database and topic, for the multiple purposes of topic selection, research problem definition, methodology selection, reports of current research results, identification of significant works, and future research agendas. By the end of the course, they are a step closer to assimilating the non-sequential, non-linear research behaviors of their faculty mentors.

Internet navigation and evaluation

Rather than exhibiting an over-reliance on the web, honors students have been so frequently warned against using the web as a reliable research resource that they consequently have little or no Internet experience. A luddite approach serves students no better than over-exposure, since intelligent navigation, search-engine selection and technique, and evaluation criteria are critical in today’s information environment. Library Studies 301H incorporates these issues, plus practice with reliable web sites known as the “invisible web” and discussion of current issues such as the proposal for the addition of new Internet domains.

Information literacy value-added content

Course content identified as particularly valuable and unique by Library Studies 301H students extends beyond the narrow scope of gathering information. Elements of the broader information environment not usually covered in other classes but that have significant impact for students as consumers of information include copyright issues and intellectual property, research ethics and information ethics, and patterns of scholarly communication and discipline analysis. Students report that exposure to these issues broadens their perspective on the total research experience.

Portfolio building

Students require experience in preparing proposal and thesis elements such as an abstract, a literature review, statement of consideration of ethical issues, and supporting documentation such as research logs and diaries. A number of assignments, guest speakers, and class activities support this need. Assignments and class projects, in addition to database searches, are structured to result in a portfolio that forms the basis of current and future thesis work. Students may elect to keep either print or electronic portfolios. In this way, the portfolio becomes a concrete vehicle to link the course more directly to the thesis experience and to integrate discrete project elements.

Challenges

Several challenges exist in the delivery of a credit course to support thesis research. Fundamentally, the thesis project is an individual experience and one that does not easily translate to a group classroom experience. It is sometimes difficult to establish a common syllabus that will sustain students throughout the entire semester. Depending on course enrollments, there can be a significant lack of commonality among disciplines and academic departments for a coherent presentation of resources and strategies. Several departments, but not all, offer their own research methods course, and much of our content may overlap. Students are usually in different stages of the process, and the pace of assignments and activities may not parallel their immediate need.

CONCLUSION

Each time it is offered, depending on class composition, Library Studies 301H presents different combinations of challenges. Still, the overriding advantage is that it provides a forum for students and librarians to participate in an ongoing conversation, and allows for continuity that would not otherwise exist in an informal, workshop environment. It gives structure to students who might otherwise flounder amidst a sea of resources, and it provides librarians with powerful insights that inform understanding of the entire student information-gathering process.

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