

HITTING A MOVING TARGET: CURRICULUM MAPPING, INFORMATION LITERACY AND ACADEME

KRISTEN A. BULLARD AND DIANA H. HOLDEN

INTRODUCTION

The University of Tennessee Libraries uses curriculum mapping as a tool for departmental information literacy integration. UT Libraries successfully integrates information literacy concepts and activities into many courses, with less success in science courses. Curriculum mapping gives science librarians a place to start when approaching teaching faculty about library instruction.

As librarians we constantly try to keep up with the ever changing curriculum that departments offer. By systematically analyzing the content or focus of the courses in a curriculum, librarians can propose the best timing and placement for information literacy concepts across a course of study. Science courses, with their emphasis on practical, lab-based work, often lack an intuitive placement for information literacy. Curriculum mapping provides the framework for introducing these opportunities to science faculty in a meaningful way, with the least amount of compromise to the vision of their course.

This paper discusses the basics of curriculum mapping, the UT Libraries' application of curriculum mapping in a science setting, strategies for implementation, and ways to apply these methods at other institutions.

THE BASICS OF CURRICULUM MAPPING

Curriculum mapping originated in the K-12 setting in the 1500s (Triche & McKnight, 2004). Schools and school districts use curriculum mapping to identify what teachers are actually doing in their classrooms and how it aligns to educational standards. Once teachers spend a school year recording their classroom activities, they compare their map to the district's anticipated standards and

objectives, and to what other teachers in the same subject and/or grade are accomplishing in their classrooms. This systematic comparison allows schools and school districts to identify gaps and overlap in the K-12 education system and make changes to improve teaching. (Koppang, 2004)

Using curriculum mapping to integrate library use skills, and more specifically information literacy, into the higher education curriculum differs slightly. Librarians use curriculum mapping to identify relevant and appropriate placement of information literacy within a course of study or the general education curriculum. This process of collaboration and communication with academic departments accomplishes several things: it keeps library services relevant to the department and the students, it encourages a similar language for discussing information literacy, it acts as a tool for marketing to departments, and it creates more authentic (point-of-need) learning opportunities for students.

Keeping Library Services Relevant

Academic departments, especially the applied sciences, constantly review their curriculum to make sure their graduates are prepared and on the cutting edge in their field. The application of curriculum mapping helps librarians make updates quickly so that they can suggest changes for the best integration of information literacy to help their graduates become competitive and able to keep up with the rapidly changing world of information use.

Speaking Departmental Language

A common theme among all uses and applications of curriculum mapping is improved communication and collaboration. Many librarians have experienced situations where they talk to faculty members about the importance of information literacy only to hear statements such as "I don't see how this can fit into my course/discipline/assignment." By becoming familiar with the curriculum and learning the vocabulary faculty use to convey

BULLARD AND HOLDEN
The University of Tennessee-Knoxville

similar concepts, librarians can better communicate the relevancy of information literacy.

Marketing to Departments

Curriculum mapping can also be used to better market library services to departments. Understanding the department's interests, current initiatives, and changes in the curriculum can help librarians revise existing programs or create new ones that better fit departmental goals.

Creating Point-Of-Need Learning Opportunities

The timing of certain information literacy concepts within the course is very important. Through departmental collaboration faculty members become more familiar with information literacy and how to integrate it into the curriculum. This collaboration minimizes overlap of content and can reveal creative learning opportunities that make information literacy come alive. Applying learning concepts in timely ways that have an immediate practical application can create these point-of-need learning opportunities.

UT'S APPLICATION IN A SCIENCE SETTING

The curriculum mapping project at The University of Tennessee grew out of a noted need for library instruction for science classes. The Agriculture Library holds many resources useful for a wide range of classes – not just writing dependent courses. However, with many natural science courses heavily dependent upon laboratory work, an obvious spot within the curriculum for library instruction did not exist. Many students used the library only when needed for classes outside the science program. Several one-on-one instruction sessions with science students made the need for a more integrated program obvious.

The library has a good working relationship with both the teaching faculty and the research faculty in the Entomology and Plant Pathology program. Working with this small department in the College of Agricultural Science and Natural Resources seemed a good pilot project for many reasons. Although the department offers only masters and doctoral degrees, a handful of undergraduate courses are offered in conjunction with the Plant Sciences degree. This department had previously allowed the library to conduct a multi-part instruction segment during the graduate student introductory seminar course.

Diana began the project with an in-depth examination of all courses offered for the departmental master's degree. She identified course requirements and then looked at those courses in more detail. She also considered historical documentation from the previously offered multi-part library instruction course and more recent "one shot" sessions during the orientation seminar. These reviews revealed what was previously considered important enough to warrant five to six class sessions and highlighted what the professors currently expect their students to know.

Examining these documents showed, as expected, that the

professors wanted to ensure that the students knew how to find the most relevant material and how to incorporate that material into their research projects. Faculty requested instruction in the use of bibliographic management software several times within the past two years. Examination of course descriptions and available syllabi immediately revealed a handful of places for library instruction while other opportunities became apparent upon consultation with professors or further study of the curriculum. The undergraduate courses because they included a writing component, often a research paper, proved most open to new library instruction.

Science professors sometimes assume that students learn basic research and writing skills in required humanities and social science courses. That is not always the case. Even with prior learning, additional library instruction within science courses often proves helpful. Science courses may have different research/writing requirements and science-focused library instruction becomes beneficial.

The curriculum map on the next page shows, in brief form, what was presented to several of the professors. Three of the courses currently mapped are represented.

Curriculum Map

	Standard 1: Determines the nature and extent of the information needed.	Standard 2: Accesses needed information effectively and efficiently.	Standard 3: Evaluates information and its sources critically	Standard 4: Integrates information effectively to accomplish a specific purpose.	Standard 5: Understands economic, legal, and social issues surrounding the use of information
EPP 410: Diseases and Insects of Ornamental Plants	Basic proficiency: understands different sources may be needed	Basic proficiency: demonstrates the use of library databases and catalog	Basic proficiency: explains the difference between scholarly and popular material	Basic proficiency: synthesizes information into new form	Basic proficiency: uses information ethically by citing sources correctly
EPP 507: Professional Development Seminar	Intermediate: utilizes a range of sources and controlled vocabulary	Intermediate: demonstrates advanced search strategies within library databases and catalog, applies controlled vocabulary	Intermediate: evaluates multiple sources and search strategies	Intermediate: synthesizes information into more complicated formats (thesis, posters, etc)	Intermediate: articulates the importance of copyright issues
EPP 525: Medical and Veterinary Entomology	Advanced: differentiates scope of resources, develops effective research questions	Advanced: uses citation indexes to follow research	Advanced: utilizes primary, secondary, and tertiary sources	Advanced: synthesizes information from wide range of sources	Advanced: articulates open access issues, how access is impacted
Assessment Ideas	Writes research question and search strategy	Maintains detailed research log	Reviews and critiques selected resources	Completes research paper	Demonstrates ethical use of information

Professor Response

A positive long-standing relationship between the librarians and most of the faculty made it easy to approach both the library representative and the individual faculty members. Several of the syllabi needed to begin this project were available on the departmental website. Those that were not available electronically were easily obtained by a request through the library representative.

After creating an initial curriculum map, Diana circulated it to the teaching faculty. She chose to present this map in non-library language in order to make it more accessible to the faculty. Individual professors received targeted course maps to show how the library can be beneficial during the semesters as well as for the degree as a whole. Faculty responded positively.

Affirmative feedback focused on the resources available to students and the librarian's willingness to assist with many aspects of the learning process. Several professors plan to implement this strategy into teaching their next course (Fall 2006 or Spring 2007). Less enthusiastic comments express concern about giving up course time for a library session. Many professors already have trouble finding time to cover all of the required course information and are unwilling to lose 45-50 minutes. To date, this time constraint has been the biggest obstacle in reaching all of the EPP students. Faculty also expressed concern about the relevancy of information literacy standards in lab-based courses. Diana is working to find solutions to these obstacles with the hope that by Fall 2007, the department will be willing to implement the overall plan.

PLANNED IMPLEMENTATION STRATEGIES

This project focused on the master's level program in the Department of Entomology and Plant Pathology. Some of the covered courses are jointly offered at the PhD level, but Diana felt that more success could be gained with reaching students at the beginning of their graduate careers. The transition between undergraduate and graduate work can be daunting and intimidating.

The department offers two main areas of study, Entomology and Plant Pathology (EPP). Within these fields students can concentrate in one of eleven sub-specialties. This wide range of specialties makes it somewhat difficult to create a comprehensive information literacy plan for the entire department.

The Master of Science degree requires 24 hours of coursework, two of which must be seminars. These seminars have provided the focus for instructional opportunities to date. Students from all of the specialties are represented and they all have a required paper to complete. The seminars are small (up to 20 students) and allow the librarian to give an overview of library resources, touch on a few databases, and answer questions.

Classes never allow enough time to cover everything the students need; therefore many consultations with individual students can occur over the course of a semester. The use of curriculum mapping will hopefully open some avenues for student contact when they most need this help.

Courses Targeted For Initial Contact Are as Follows
(descriptions are available at <http://epserver.ag.utk.edu/courses.htm>):

- EPP 410 – Diseases and Insects of Ornamental Plants (undergraduate)
- EPP 507 – Professional Development Seminar
- EPP 512 – Soilborne Plant Pathogens (includes lab)
- EPP 514 – Bacterial Plant Diseases (includes lab)
- EPP 525 – Medical and Veterinary Entomology (includes lab)
- EPP 531 – Special Problems in Entomology

Three of these courses include lab work, which is not an obvious place for information literacy work. However, these labs require some written component, whether basic lab notes or a more formal paper. Some of the lab work also requires outside investigation of current practices – a skill that application of information literacy standards would enhance.

Because of the class time restraints already mentioned, plans have been made to provide the students with some basic information and guides that are available at any time. The University of Tennessee uses course management software, Blackboard, and the professors within EPP use this technology enthusiastically. Diana has provided electronic handouts covering basic information about the library and research tips for inclusion on the course Blackboard site. These electronic documents incorporate many of the information literacy standards discussed above. Diana is hopeful that as time progresses she will be able to make a physical appearance in new classes, as well as provide the electronic resources.

The upcoming fall semester will be the first time Diana will be able to incorporate many of the ideas associated with this project to a wide range of courses. The departmental instructors are willing to allow her to present in two or three new classes and she will take that opportunity to present information literacy concepts in ways relevant to what the students are currently working on in their degree program.

WAYS TO APPLY THESE METHODS AT OTHER INSTITUTIONS

Curriculum mapping holds the potential for creatively communicating information literacy integration into a wide variety of disciplines. The following steps outline one way this tool may be used at your institution.

- Review the degree requirements of your particular course of study. This might involve gathering syllabi from the department or individual faculty.
- Analyze individual courses and identify existing information literacy concepts and areas of weakness.
- Create a draft of a curriculum map which shows the areas where information literacy exists and areas for potential collaboration. Use the department's language, avoiding library lingo.
- Request a meeting with faculty with whom you have a history of good relations. These faculty can become valuable resources for recruiting the participation of more reluctant faculty. This meeting will provide the opportunity to articulate your ideas, brainstorm additional avenues for information literacy integration, and receive feedback.
- Revise your curriculum map to integrate new ideas and suggestions from the faculty, and then start marketing your ideas to the whole department.

Keep in mind that this is not a linear process. Some of these steps might be repeated several times with your department. Curriculum mapping, as a tool, can continually be revised as the department's curriculum changes, as new ideas are generated and as new faculty arrive.

SUMMARY/CONCLUSION

This project grew out of a recognized need for a different approach to library instruction for the sciences. By thoroughly researching the department requirements, analyzing current courses, and meeting with faculty representatives, instruction librarians were able to develop a plan that works for the department and for the library. The real winners are the students. They will have greater access to the librarians and library resources that can help them succeed in their chosen program. While this type of project cannot be quickly completed, it is a worthwhile activity to increase interaction between the library and departments that may not have obvious ways of utilizing library instruction.

REFERENCES

- American Library Association. (2000). *Information Literacy Competency Standards for Higher Education*. Web site: <http://www.ala.org/acrl/ilcomstan.html>
- Koppang, A. (2004). Curriculum mapping: Building collaboration and communication. *Intervention in School & Clinic*, 39(3), 154.
- Triche, S., & McKnight, D. (2004). The quest for method: The legacy of peter ramus. *History of Education*, 33(1), 39.