

A Declaration of Embeddedness: Instructional Synergies and Sustaining Practices in LMS Embedded Librarianship

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Introduction

Academic librarians are responsible for not only providing information to students, but also teaching students information literacy skills that can have a lasting impact on their learning. Over the last century a number of approaches have been devised to introduce and instill knowledge of research sources and associated skills and concepts in students at all levels of higher education. As technological means of communication have advanced, librarians have turned to new tools to help them reach and teach students. Not all of these methods, however, have retained their effectiveness and appeal to our users. After a careful assessment of instructional methods and student and faculty research behaviors and perceptions, it is evident that academic librarians should focus their information literacy instructional efforts in one arena. Today's instruction librarians need to work in collaboration with faculty and within their institution's learning management system (LMS) to connect with students at the point of their learning.

The Information Literacy Instruction Methods Available to Librarians

There are at least five instructional methods that librarians use to reach students: one-on-one reference interactions, one-shot instruction sessions, informa-

tion literacy credit courses, instructional materials on library Websites, and embedded librarianship. Reference service can involve students appearing unannounced in the library for research assistance or making appointments for research consultations, basically working individually with a librarian to gain research guidance. One-shot instruction sessions are typically face-to-face, hands-on, meetings with a class of students during a single session in which the librarian covers an assignment-focused set of tools (databases and other resources) and skills (citing sources, combining search terms, etc.). Information literacy credit courses allow for a wider range of tools and skills to be covered given the increased contact hours. Placing handouts, tutorials, and other instructional materials on the library Website allows for 24/7 access for point of need instruction, as well as giving users the ability to review materials as often as needed. Finally, embedded librarianship provides for the immersion of a librarian into the LMS space for a given course, with access to course documents and discussions and the ability to provide links and research tools and to create instructional opportunities for registered students.

How well do these methods work to connect with undergraduates and impart information literacy skills? Each one has advantages and disadvantages that are summarized below. For a fuller discussion of each,

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see Tumbleson and Burke.¹ A reference interaction allows a librarian to focus on one student's research need and individualize instruction and guidance, but only one student can be reached at a time, and only if the student seeks out the librarian. Instruction sessions provide students with an introduction to useful starting places for research and perhaps some direct feedback from the librarian, but may be too compressed in time to cover all needed information and are limited to a single point of contact. Credit courses, where available, offer an extended introduction to information literacy skills, but are restricted in terms of the number of students who can be reached per librarian in a given semester. Web-based instructional materials can be viewed by many students at one time, just when needed, but they may not be utilized or can be entirely overlooked by the students who need them most. The embedded librarian is available in the spot where students are engaging course content through collaboration with the course instructor, but there are only a finite number of courses in which a librarian can embed.

To be fair, none of the five methods are used in isolation; indeed elements from each are mixed and matched by academic librarians to deepen student learning. Useful combinations of the methods can lessen the impact of disadvantages and enhance the advantages. Keeping these merits and limitations in mind, let us analyze faculty and student research behavior to provide a deeper assessment of how well these methods perform.

Faculty and Student Research Behavior in the Literature

In 2010, Head and Eisenberg published two reports which shed considerable light on the way faculty work in designing their research assignment handouts and on the way students use information. In *Assigning Inquiry: How Handouts for Research Assignments Guide Today's College Student*, July 12, 2010, Head and Eisenberg reveal that faculty handouts describing student research assignments are likely to deal with the mechanics of the paper rather than describing the research process or identifying which scholarly resources to use. These vagaries frustrate students who desire detailed guidance but avoid consulting librarians. "Six in 10 handouts recommended students consult the library shelves—a place-based source—more than scholarly research databases, the library catalog, the

Web, or, for that matter, any other resource. Only 13% of the handouts suggested consulting a librarian for assistance with research."² Interestingly, experienced faculty tended to provide more specific research guidance than did faculty new to the profession. "Instructors, who were relatively new to teaching and had taught for five years or less had handouts with the fewest references to information resources from the library or elsewhere."³ Most instructors fail to provide the context needed by their students in the research assignment handout. "Few handouts explained what research entails as a critical process of inquiry. Why were students being asked to engage in a pedagogical research exercise in a certain course in the first place?"⁴

From our own experience at a university regional campus, we observe most students are unaware of the current shift from print to electronic publishing, the distinction between the collections found in public libraries and those in academic libraries, and the time and thought needed for intellectual inquiry. Consequently students become frazzled when presented with the research assignment. All too often, "situational context" is missing from faculty's research assignment handouts. Research cannot be reduced to a checklist of steps; rather, students would greatly benefit from understanding the "whys of the research process."⁵ Students, moreover, need to comprehend how to find and use diverse sources of information in the digital age.⁶ Faculty research assignment handouts provide inadequate guidance for the undergraduate scholar.

In *Truth Be Told: How College Students Evaluate and Use Information in the Digital Age*, November 1, 2010, Head and Eisenberg focus on the other constituency, undergraduates. Students' behavior in course-related research is also lacking. Their data documents students have a hard time getting started (84%), defining a topic (66%), narrowing a topic (62%), and filtering irrelevant results (61%).⁷ Although students are highly motivated to pass the course, complete the assignment, and get good grades,⁸ they turn to course readings (96%), Google (92%), research databases (88%) and instructors (83%) in working through the research assignment. Students' reliance on librarians lags at behind at 30%.⁹ "We conclude students ask for help with evaluating materials from instructors far more than they do from librarians and few consider a librarian referral when evaluating and selecting mate-

rials.”¹⁰ While faculty may direct students to use books on library shelves, students prefer “anything online, including the Web and scholarly research databases.”¹¹ Today’s undergraduates suffer from information overload. They manage by falling back on “a small set of familiar, tried-and-true resources, which infrequently includes librarians, for completing one assignment to the next.”¹² Students are looking for an easy, predictable research experience. “In several follow-up interviews, students told us they preferred research assignments where a professor narrowed down and specified a research topic for them.”¹³ This simplifies the hardest part for them, just starting. However, it undermines students’ cognitive development and limits their opportunity “to learn and practice research skills.”¹⁴

Clearly, academic librarians are not perceived as players in the research game. This news is distressing to information specialists who have studied and trained for years in higher education. What is to be done? Get in the game by collaborating with faculty who are the go-to research guide in students’ minds. Embed in their learning management system courses! Show up online and hold court as research consultants by collaborating with faculty to deliver information literacy instruction virtually, 24/7.

The wider professional literature also supports the new model and potential of embedded librarianship. “As Skank and Dewald explained, ‘...the closer the link between course assignments and library resources to help with these assignments, the greater the likelihood that students will access library information.’”¹⁵ Embedded librarianship is a versatile model which can be used with traditional, hybrid, and online courses as well as with traditional and non-traditional students. Embedded librarians are effective in assisting working adults who are part-time distance learners. This demographic comprises one third of the undergraduate population in the United States. These students possess differing levels of information literacy skills and are often unfamiliar with the changed information landscape. Understandably they are anxious. In this scenario, the embedded librarian empowers online learners by explaining the research process and linking to library resources suited to the assignment. “By approaching instruction as a joint effort between the faculty member and the librarian liaison, the information literacy curriculum is integrated into courses.”¹⁶ By collaborating, faculty and librarians deliver essential subject content and research skills to

students. “Nursing faculty can frame the context and relevance of content to nursing practice and librarians can provide expert guidance in searching for information.”¹⁷ The chief aim, then, of embedded librarianship is to remain relevant. “...if we are to remain responsive to our users’ diverse information, reference, and research needs, we envision a future in which embedded librarians—and embedded librarianship—are the norm rather than at the forefront.”¹⁸ As documented in the literature, embedded librarianship is becoming the new normal. It enables students to understand the research process and to develop information literacy skills within the context of a subject specialty.

The Effectiveness of Embedded Librarianship Explained

Embedded librarianship is a versatile way of delivering information literacy instruction. No matter how the course is taught: online, hybrid, or face to face, an academic librarian working as an embedded librarian may appear and provide instruction in collaborating faculty’s LMS courses, whether in Blackboard, Desire2Learn, Sakai, or Moodle. When an instructor and a librarian agree to partner in course-specific research endeavors, then enrolled students benefit in three ways. First, students are spared the overwhelming experience of selecting from among hundreds of research databases and determining alone which few are most profitable to search. Second, students are introduced to a wider range of new, unfamiliar, scholarly, creditable electronic resources which align with the professor’s academic research intentions, rather than surf the free Web or use whatever sources are already familiar but inadequate. Third, students are guided through the research process as the embedded librarian interacts with students through posted content: explaining the research process from topic selection through citing sources, sending announcements of research techniques to help students solve their current information problems, entering into research-related discussion board threads, posting relevant links to research databases, e-books, and Websites.

Students in this environment are more likely to develop 21st century information literacy skills which are necessary for academic achievement and career advancement. When interacting with information specialists in the course-context of subject specialists, students begin to understand how vast and changeable the collections available through their university

libraries are, how research challenges the mind and one's assumptions, and how resilience is necessary to complete semester-long research projects. These are the grand goals of embedded librarianship. The immediate payoff for the embedded librarian is that he/she has access to the research assignment requirements with the added benefit of having spoken with the professor about the likely pitfalls and hopeful outcomes students may experience along the research path. In golden situations, the embedded librarian may assist in the redesign of research assignments and handouts with collaborating faculty to ensure students gain a deeper appreciation and essential information literacy skills to conduct research effectively and confidently. What the professor stands to gain is a new appreciation for the ever-changing wealth of academic and electronic resources university libraries make available. New titles, new interfaces, new tools to simplify research are shared by the embedded librarian from the initial conversation throughout the semester-long partnership. Thus faculty, preoccupied with a myriad of academic responsibilities, are kept apprised and trained to utilize the latest offerings of publishers and vendors acquired by university libraries and consortia. To summarize, embedded librarianship permits an extended information literacy reach and on-going instructional role.

Let us review more fully how LMS embedded librarian programs work. An embedded librarian program may be launched by actively marketing the opportunity to faculty and administrators via emails, in newsletters, or at meetings. Perhaps faculty teaching online degree programs or off-campus, required first-year courses, senior capstone courses, or research-intensive courses may be targeted. A librarian's personal or committee connections with faculty may also be leveraged. Once faculty agree to participate in the embedded librarian program, then a librarian is assigned to collaborate with individual faculty members, based on workload and academic fit. Then the embedded librarian meets with an instructor to discuss his or her research assignments and information literacy needs. Next the embedded librarian, who is enrolled at the course builder or instructor level, adds appropriate content within the LMS and monitors students' research concerns as they arise. The collaboration is a flexible arrangement, as agreed between professor and embedded librarian, and may involve information literacy instruction at start-up only, during the research

project period, or throughout the entire semester. Finally, assessment through evaluations or surveys is sought to enhance the program in future.

Implementing and Sustaining Embedded Librarianship

Embedded librarianship does not just happen. There are a number of considerations about the academic library and its environment that can support an embedded effort from the ground up. Additionally, there comes a point when a pilot effort must either grow and thrive or fade away. The following practices, drawn from the literature and from the authors' experience, should be implemented to successfully start and sustain the effort for long term impact. We would also suggest you review two other lists of best practices: one by Hoffman and Ramin,¹⁹ that offers a variety of single course-specific points of guidance on starting out an embedded librarian experience, and one by York and Vance²⁰ that has more broad, programmatic suggestions.

Find faculty who are willing to collaborate with librarians to develop students' research skills, and then build on these collaborations by marketing to and convincing other faculty members to join. Opportunities to work as embedded librarians with faculty should grow out of existing library instruction relationships, but can also be found through other interactions we have with faculty. Serving on committees, participating in workshops, and joining faculty learning communities can help librarians build relationships with faculty and better understand their assignments, teaching methodologies, or instructional struggles. Drewes and Hoffman write that "Librarians should be integrated on multiple levels to be most effective. Libraries play a role in the entire campus community."²¹ We have found that attending events sponsored by our campus center for teaching and learning, as well as serving on the leadership collaborative of this group, has opened doors for us to recruit new instructors. We have also been able to present at center-sponsored events to explain to the wider faculty how embedded librarianship works and answer their questions. Connect on your campus and faculty reciprocate and open their doors to embedded initiatives.

In a similar vein, find ways to support faculty who are using the LMS or teaching distance learning courses. Supporting them is already part of the library's mission to serve all students and faculty eq-

uitably, but it may yield additional opportunities to embed in instructors' courses or opportunities to develop skills and content that can be used in embedded courses. Examples may include creating brief online tutorials to assist distance learning students, encoding library-owned DVDs to embed digital video in the LMS for a course, or delivering a one-shot instruction session to a distance class using web conferencing software like Elluminate or Wimba. For us, one spark was the inclusion of a librarian on a faculty learning committee dedicated to converting nursing courses to online offerings in support of a web-delivered BSN-completion program. It motivated us to retool and add new skills, which won over an eager departmental faculty to our embedded program. We learned how to make web tutorials on library research skills which were required viewing for all web-based nursing students. We also started a collaboration with several nursing faculty members to embed librarians in their courses which continues to this day. Although we believe that embedded librarianship does not need to be limited to distance education courses, this is a logical constituency with which to begin embedded librarianship and to develop ways to interact with their online students. Since so many students only interact with the library online, if and when they do, the methods developed here can apply to all courses in which a librarian embeds.²² Find common cause with faculty teaching online, and develop a broader online library presence and outreach.

Build instructional synergy by combining embedded librarianship with other instructional methods. As noted above, no single instructional method meets all student needs. Embedded librarianship gets us in student learning space, but the LMS does not need to be the only environment in which we interact with undergraduates. Certainly, distance or online courses may restrict us in that way, although one-on-one reference interactions are still possible through email or IM. Moreover, if we take our embedded approach to face-to-face or hybrid courses, it is feasible to hold a one-shot instruction session in the classroom alongside learning objects and discussions in the LMS. Chesnut, et al., describes the synergy of connecting instruction and reference roles in a single embedded librarian.²³ Discover ways to match the strengths of embedded librarianship with the strengths of the four other methods to accomplish learning outcomes.

As the number of classes with embedded librarians increase, restructure the library so that staff can focus on these expanding efforts. We envision a tipping point, both library by library and for academic libraries as a whole, where embeddedness becomes a significant part of instruction and outreach, and other library functions diminish in significance. Planning for this change requires both reconfiguring job descriptions and reallocating library resources. Kesselman and Watstein suggest organizational hierarchies that might better support embedded librarianship, making it easier for librarians to get beyond their buildings.²⁴ At Miami University Middletown, a combination of retirements and the loss of positions from budget cutbacks have moved us to realign our entire library staff in public services, including embedded librarianship. Even without such wholesale shifts, the success of an embedded librarian pilot project brings renewed energy and reveals new ways to meet students and support faculty. While the initial project may begin small, libraries involved in embedded classes can use this pilot stage to refine practices and procedures that can be applied, with experience, to a growing number of courses.²⁵ Blaze a new path in library service which places embedded librarianship at the forefront.

Factor in, but do not be automatically dissuaded by, workload issues created by embedded librarianship. It is easy to imagine that embedded librarianship in the LMS will overwhelm librarians with countless IMs and emails and discussion board posts from students with detailed research questions. It taxes the mind to juggle multiple classes in a much more involved way, checking syllabi and providing assignment-specific research tips, than we might do in routine instruction sessions. Set reasonable boundaries on how an embedded librarian will monitor and communicate with each class; discuss limits as part of the collaboration with faculty. We have seen reference questions and interactions increase, but not inundate us. Every class differs in the timing of research assignments and the responsiveness of students to offers of assistance. York and Vance report from their survey that embedded librarians check in on embedded courses on a variety of schedules (from once a week to multiple times per day), but that it is most important to answer student questions quickly.²⁶ Likewise, flexibility is required in determining the maximum number of courses in which a librarian can embed.

Learning objects can be reused in multiple course sections or distinctly different courses, saving valuable time. Accommodate as many embedded courses as possible, without losing the advantage of having an accessible librarian.

Regularly assess embedded librarian efforts to guide future practice. Tally regularly the number of classes in which librarians are embedded, the subject areas covered, the number of new and returning faculty. These trends indicate new possibilities for future semesters. Much assessment in practice enables us to gauge student and faculty perceptions of the embedded librarian experience and fine-tune services such as marketing, responsiveness to inquiries, building new learning objects, etc.²⁷ For example, a method of this sort, involving pre- and post-surveys, student discussion forums, and an instructor interview, is discussed by Edwards, et al.²⁸ On the other hand, Clark and Chinburg describe a method of comparing citations located by students receiving face-to-face library instruction with those found by students who had an embedded librarian provide instruction and answer questions in the LMS.²⁹ The authors found results to be comparable. Gather evidence which demonstrates the impact librarians have on learning, teaching, and research.

Gain ideas and perspective from collaborating with other librarians who embed worldwide. There is an ever-wider community of librarians working with embedded approaches and techniques. We have benefited greatly from articles and conference presentations by colleagues going before us in this endeavor. Once a large scale embedded effort is in place, sharing skills, materials, and methodology should be encouraged throughout a single institution to support the work, using the common communications mechanism of the LMS.³⁰ Scout out likeminded pioneers and pioneering institutions from whom to learn; continue to adapt embedded practices.

Conclusion

Academic research behaviors continue to change in our increasingly networked world. Based on the findings published in the Project Information Literacy Progress Reports, we conclude that embedded librarianship is the sensible solution in information literacy instruction. While the best techniques of working with faculty and students in the LMS are still evolving, it is a viable outlet to serve students in all aca-

ademic course permutations. We are all running this full-tilt information marathon and as information professionals, we feel compelled to leave trail markers to find one's way in our vast information universe. Embedded librarianship is the primary and most productive method academic librarians have to interact with students and faculty and teach the research process, its rationale, and skills.

Notes

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4. *Ibid.*, 26.

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