Abstract.

Librarians were embedded in two Vanderbilt University courses in 2006. As part of an integrated approach, the librarians proposed an “embedded librarian” for a freshmen course of 106 students offered at Peabody College of Education and Development. A librarian audited the course and attended all lectures. As a member of the class, she was informed about the assignments and learned about the instructor’s expectations and idiosyncrasies. She scheduled optional workshops that were tailored to the students needs.

At the Owen Graduate School of Management, an embedded librarian worked with undergraduate students from a variety of non-business majors at Vanderbilt. They participated in the intensive 4-week “Accelerator” summer program. The purpose of embedding a librarian was to instill business information fluency and to stress the value of information in academic and real-world situations.

Highlighting their experiences, the embedded librarians and a course professor will present their observations and discuss expected outcomes. They will give advice for those who want to institute this program in their own institutions.
1. Introduction.

The purpose of this paper is to describe how and why librarians were embedded into two courses at Vanderbilt University. The paper will define expected outcomes and provide an assessment. The embedded librarians will provide advice to others on incorporating this strategy into information literacy programs.

2. Rationale.

The embedded librarian projects took place in the Peabody College of Education and Human Development and the Owen School of Management at Vanderbilt University in 2006. Interviews with faculty and librarians’ observations indicated there was a need for a different approach to information literacy competency instruction. In the past, librarians provided information literacy workshops outside of the curriculum, course-related instruction, and individual instruction at library service points. Students needed an approach that was better integrated with the curriculum, deeper, and more comprehensive. Faculty often struggle with how much course time and energy should be spent on teaching students the basics of research, writing, and information literacy. Some students are well equipped to demonstrate proficiency while others have never learned these important skills. If too much time is spent in developing competency, high achieving students are bored. If not enough time is used to address these expectations, lower performing students are not prepared to do well. Thus the use of embedded librarians provides a delivery model that can meet the needs of all students while at the same time meeting the needs of instructors.
Information literacy requires collaboration between librarians, faculty, and administrators. Education researchers Kuh and Gonyea (2003) found that the “students who made the greatest gains in information literacy attend institutions that communicate the importance of information literacy and practice the skills that lead to information literacy” (Kuh & Gonyea, 2003, p. 268). Curriculum integration of the competencies is the most effective means of conveying this ("Information literacy competency standards for higher education," 2000, p. 5). “It takes a whole campus to produce an information-literate college graduate” (Kuh & Gonyea, 2003, p. 270). However, librarians have had limited success in attempts to institutionalize the integration of information literacy competencies (Stubbings & Franklin, 2005, p. 7); (Julien & Given, 2002/03, p. 83). This has been attributed to the dynamics of the educational environment (Owusu-Ansah, 2003, p. 226). Information literacy instruction is best situated at the department-level (Badke, 2005, p. 78).

Learning theory indicates that students will gain understanding if they can “explore underlying concepts and generate connections to other information they possess…Providing students with time to learn also includes providing enough time for them to process information (Bransford, 2000, p. 58). They also need feedback about their learning. They learn better when they can see how they can apply what they are learning (Bransford, 2000, p. 60).

There are few articles in the literature about embedded librarians and the definition of “embedded librarian” has not been standardized. Dewey gives an excellent explanation of “embedding” that provides a context for its application to librarianship. Embedding “implies a more comprehensive integration of one group with another to the
extent that the group seeking to integrate is experiencing and observing, as nearly as possible, the daily life of the primary group. Embedding requires more direct and purposeful interaction than acting in parallel with another person, group, or activity” (Dewey, 2004, p. 6).

Daniel Webster College in New Hampshire reported a concept similar to that at Vanderbilt (Hearn, 2005, pp. 219-227). The University of Rhode Island embedded a librarian in distance courses (Ramsay & Kinnie, 2006, pp. 34-35). For the Vanderbilt projects, we defined the embedded librarian as “a librarian who audits a formal course with the students, is available to the students before and after class for networking and for questions, and who identifies learning needs throughout the semester and provides workshops and individualized instruction based on those identified needs.” Ideally, the librarian has access to the course management system used by the professor and can post documents and participate in online discussions with the students.

3. The Peabody Model.

The Human and Organizational Development (HOD) major is the largest undergraduate major at Vanderbilt University whose goal is to prepare students to be leaders in their future organizations and communities. To succeed in the program, students need a strong foundation in information literacy. The first course in the program, Applied Human Development (HOD 1000), is a critical course for the students to develop those competencies.

Approximately 275 students enroll in three sections of this course each year. One course requirement is a research paper. The research paper is a familiar assignment from high school; however, trying to locate, evaluate, and use scholarly information in a new college and with more sophistication is a challenge. This assignment sets expectations for future papers.
In the past, students have needed extensive assistance from library staff to find appropriate information and to use the American Psychological Association (APA) style for their papers. Librarians proposed to the course professor that he consider embedding a librarian in the course. The immediate goals were:

- To reduce barriers to students asking for library-related help
- To improve the quality of student papers
- To teach the students to use credible, authoritative, and relevant citations in their papers

Other goals were:

- To increase knowledge of information resources by teaching assistants assigned to the course
- To increase the recognition by faculty and students that librarians can be partners in the teaching and learning process
- To better integrate information literacy competencies into the curriculum

The faculty member agreed that a librarian would audit the course and attend the weekly class lecture to be a visible extension of the Library.

The librarian actively networked with the class. Each week, she sat in the same section of the classroom so the students would see her. After a few weeks some students began gravitating to that section to sit near her. The librarian learned these students’ names and had informal conversations with them.

As the semester progressed and the required research paper became a reality, the librarian and the students had frequent interactions. The students contacted her via email or stopped her after class to ask how to get started with their papers. It was apparent that the students were apprehensive, at first, to ask for help, but once the initial contact was made, their uneasiness quickly faded. Also, the librarian had announced in the first class that office hours were not required to see her, so the students
should feel free to stop in when it was convenient for them. That seemed to really impress them, and they took advantage of the service!

The librarian scheduled eight library instruction sessions. The students were not required to attend. The first sessions exposed students to appropriate research databases for their paper as well as the online catalog. For many students, it was the first time they had visited a university library. The last instruction sessions focused on learning the American Psychological Association (APA) style.

Many students consulted with the embedded librarian in the days leading up to the due date. It was very gratifying to see these students in the Library using resources that had been shown to them. The librarian was flattered when students brought their completed research papers in for her to view, especially the list of references, before turning it into their instructor. The drop-in visits showed that the students had overcome barriers in asking for library assistance and had become comfortable in seeking their librarian out.

4. **The Walker Management Library Model.**

The Walker Management Library serves the Owen Graduate School of Management. Unlike the Peabody College, Owen offers no undergraduate degree programs. However, each summer when the School offers no classes it provides special programs. One is the month-long Accelerator Program.

The Accelerator Program is a competitive program accepting non-business undergraduates from universities all over the U.S. and the world. The goal of the Accelerator Program is to provide students with business knowledge through mini-classes; “real-life” company experience through consulting projects, company visits and business plan development; and practice in developing problem solving, teamwork, communication and presentation skills.
In previous years Walker Management Library’s support for this program was active but traditional in nature. In the first days of the program, orientation then instruction in databases has been provided; materials have been placed on reserve and e-reserve (Blackboard); and in summer 2005 the library opened on Saturday afternoons; and while students worked in their groups on projects and two librarians moved from table to table working with the students.

For summer 2006, a librarian was designated to be part of the Accelerator planning team. The planning was well underway when funding became available for a library renovation. As a result, the library would be closed in the summer. The Accelerator Librarian quickly had to come up with a new plan.

Because she didn’t have an office, the Accelerator Librarian set herself up with her laptop in the Owen School’s Café. It was centrally located and soon became designated as Accelerator “Command Central.” All members of the program team worked there, and library printers were moved there for program use.

The Accelerator students were using primarily online resources so the closing of the library had little impact on them. The Accelerator Librarian kept a small reference collection to display during work sessions.

The librarian instructed the students in basic company and industry research. In addition to 20-30 small projects, the students would work with one company, Dodge Motors, through the entire month. Basic instruction was provided first so students could learn about Dodge. They were also required to familiarize themselves with the companies and individuals with whom they would dine each day. Each evening, staff informed the students about which company representatives they would be seated. Students then had to research these people and prepare themselves to talk knowledgeably with them.
Throughout the month, the Accelerator Librarian would provide different types of instruction in information resources and search strategies immediately prior to the next project the students would be tackling. An example of a small project completed in one weekend was for the student teams to develop a new advertising campaign for a local yoga business. The students (and librarian) began on an early Saturday morning dressed in workout clothes to attend the company’s yoga class. After the session, the owners gave a presentation about their needs. The Accelerator students returned to the School where the librarian showed them how to find demographic and lifestyle statistics; articles on yoga and other fitness programs; and advertising campaigns. The students then worked in teams to prepare presentations. They delivered them to the owners of the business on Sunday morning. By noon, the owners provided feedback on the advertising campaign ideas. The students would then implement the advertising campaign or the solution chosen by their client company.

The Accelerators then proceeded to their next project. As the program progressed, students were able to find some information quickly but were frequently stumped trying to find specific data. While students worked on their projects in School, the Accelerator Librarian would move from group to group as needed. After dinner when the students returned to the dorm and continued to work on their projects, they discovered that they still required the assistance of the librarian. Rather than actually live with the students, the librarian set up “chat” hours from her home using Trillian.

5. Outcomes and Assessment, Peabody College.

Out of the 106 students enrolled in the Peabody class, 67 attended either a library research database or APA citation session. Peabody Library staff members had 40 individual research consultations with students. One student in particular met with her embedded librarian each morning
for a week. They ate breakfast together and discussed the intricacies of writing a research paper and using APA format.

We analyzed the bibliographies from 24 of the papers that the Peabody students submitted. The large majority of the 364 cited references were to articles in peer-reviewed journals: 74%. Nine percent of the citations were to books and 9% were from “.gov,” “.edu” or “.org” web sites. Only one was from Wikipedia. This table summarizes the sources the students used.

<table>
<thead>
<tr>
<th>Type of Source</th>
<th>Number of Times Cited By Students, Fall 2006</th>
<th>% of Total Citations</th>
<th>Number of Times Cited By Students, Spring 2007</th>
<th>% of Total Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book</td>
<td>31</td>
<td>9%</td>
<td>45</td>
<td>12%</td>
</tr>
<tr>
<td>Encyclopedia</td>
<td>14</td>
<td>4%</td>
<td>13</td>
<td>3%</td>
</tr>
<tr>
<td>Legal Citation</td>
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<td>0%</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Non-Peer-reviewed Professional Journal</td>
<td>10</td>
<td>3%</td>
<td>9</td>
<td>2%</td>
</tr>
<tr>
<td>Peer-reviewed Journal</td>
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<td>74%</td>
<td>263</td>
<td>70%</td>
</tr>
<tr>
<td>Popular Periodical</td>
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<td>1%</td>
<td>20</td>
<td>5%</td>
</tr>
<tr>
<td>Website: .com</td>
<td>1</td>
<td>0%</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td>Website: .edu, .gov, .org</td>
<td>31</td>
<td>9%</td>
<td>28</td>
<td>7%</td>
</tr>
<tr>
<td>Wikipedia</td>
<td>1</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

In addition to improving the quality of references, the librarian undertook the responsibility to meet with students and give them individual and small group instruction about how to accomplish this assignment. The faculty member did not have to use class time to explain the details of how to write a research paper. The student papers improved without any additional help from the faculty member. The librarian did all the work from scheduling workshops to initiating contact with students to developing informal relationships.
Students were invited to ask for help so they did not have to feel bad about not knowing how to do this type of research. They were encouraged to seek out support and welcomed with enthusiasm and care. Students saw tremendous value in having a connection to library resources right within the class. The embedded librarian structure removed many of the barriers that prevent students from achieving learning objectives.

**Outcomes and Assessment, Walker Management Library.**

Assessment of the library involvement and the Accelerator Librarian was included in overall evaluation of the program. Ninety-two percent of the students rated the library and research aspects as “excellent.” Seven percent of the students rated them as “good.” One percent of the students did not respond.

The Accelerator Librarian attended the day long presentations and the feedback sessions from the Dodge executives. During this long day, the Accelerator Librarian observed how the students used resources in their presentations. At the end of the day when the Dodge executives completed their evaluation and feedback, they were not only pleased with each proposal but each exceeded their expectations.

After the end of the program, the Accelerator Librarian received occasional IM’s and frequent emails from students. The students who remained at Vanderbilt dropped by to see the Accelerator Librarian frequently and sought her help in business-related research. The Accelerator Librarian emailed the students an online questionnaire about their library/information experience during the program. Briefly summarized the results were:

1) The students learned to find and use information best when they most needed it
2) They learned the value of information
3) They learned that not all information is equal – even though Google was easier to use than most library resources – they found more substantial and credible information using library resources.

4) Librarians weren’t so scary

That last wasn’t an actual comment: some of the comments stated that getting to know the librarian made them feel more comfortable in asking for assistance in the future; that the librarian was fun; and the librarian was “one of us.” These comments were a bit surprising because the Accelerator Librarian wasn’t a new graduate in her 20’s but a seasoned veteran with 28 years experience!

6. Advice.

The Peabody Librarian knew when she started this adventure she would need to work hard to make herself visible in class. She knew she would need to approach the students to make their acquaintance and develop relationships with them. Being proactive, outgoing, and upbeat is paramount in this type of situation.

Embedding a librarian into a course adds responsibilities for the librarian and other library staff. It is essential for the librarian to set aside blocks of time so that proper attention can be given to the course requirements. It might be useful to reduce the number of hours the librarian would staff a library service desk or reassign other duties during the semester in which the librarian is embedded. The designated librarian should also be realistic about what tasks not related to the course he or she can accomplish during that semester. This is because once the students realize that this resource exists they will seek help often, and any time that the librarian once had for other duties will be lost.

7. Conclusion.
Embedding a librarian in a key course that requires mastering information literacy competencies is very worthwhile. The personal contact that the librarian had with these students built relationships and habits that will continue to grow throughout their undergraduate careers. These students see the library now as a place to go for help with their academic work. They also see the library staff as approachable and as partners in the academic experience.
HOD 1000, Fall 2006
Research paper bibliography analysis

- Peer Reviewed Journal: 74%
- Web (.com) non-authoritative: 9%
- Web, authoritative (.gov, .edu, .org): 9%
- Encyclopedias/Reference Sources: 4%
- Other (legal, dissertations): 0%
- Wikipedia: 0%
- Book: 9%
- Popular Periodical: 1%
- Professional Journal (non-peer reviewed): 3%

HOD 1000, Spring 2007
Research paper bibliography analysis

- Peer Reviewed Journal: 70%
- Web (.com) non-authoritative: 1%
- Web, authoritative (.gov, .edu, .org): 7%
- Encyclopedias/Reference Sources: 3%
- Other (legal, dissertations): 0%
- Wikipedia: 0%
- Book: 12%
- Popular Periodical: 5%
- Professional Journal (non-peer reviewed): 2%
References.


