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Embedded Library Instruction: Improving Student Success on 21st Century Learning Outcomes

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Abstract

This chapter will consider academic library contributions to increasing student success in terms of academic research, which is an essential skill to master in higher education programs. This chapter includes a review of the literature and a sharing of successful practices that have been adapted to reflect the twenty-first-century's complex information environment and the need for more highly skilled and knowledge-based workers.

Overview

Academic research and writing is often difficult for students to master, particularly for adult learners who may be new to higher education or returning after a prolonged absence. In the twenty-first century, academic research looks different than it did when many adult learners first encountered higher education. While the steadfast academic library remains an institution devoted to procurement and dissemination of information, it has evolved over the last few decades. Academic libraries are intertwined with innovative technology, open-access advocacy, and the teaching missions of their institutions. They have been transformed into learning hubs, research commons, and resource centers dedicated to instruction and outreach focused on teaching students best practices for finding, analyzing, evaluating, and synthesizing information in a digital context.

This transformation has prompted changes in expectations for academic libraries inside and outside higher education institutions. Increasingly, accreditors have put pressure on colleges and universities to "ensure that the use of library and information resources is integrated into the learning process" (Northwest Commission on Colleges and Universities [NWCCU] 2.C.6) and to provide evidence that library instruction will "enhance [students'] efficiency and effectiveness in obtaining, evaluating, and using" information sources (NWCCU 2.E.3).

Review of the Literature

In modern education, there is a need for increased attention to the foundational skills adults need to access resources and services, attain higher levels of education, stay viable in the workplace, and participate fully in their communities. Results of the Survey of Adult Skills, administered by the Programme for International Student Assessment (PISA) and reported by the OECD (2013), link higher literacy proficiency with improved employment outcomes and life satisfaction. However, the survey also unearthed disparities among nations in terms of educational opportunities and support for citizens' growth.

Key indicators used to define success in the twenty-first century include proficiency in literacy, numeracy, and problem solving using technology (OECD, 2013), and broader indicators such as the American Association

of Colleges and Universities' liberal-education-based Essential Learning Outcomes (AAC&U, 2008). These indicators emphasize the need for educational institutions to produce citizens capable of meeting twenty-first-century challenges, such as employers' desire for college graduates to have better cultural awareness, greater science and technology competencies, and deeper analytical skills when they enter the workforce (AAC&U, 2008).

Globally, the need for high-skilled knowledge workers has increased as the service sector and high-technology manufacturing continue to grow and traditional manufacturing declines. Such shifting has highlighted the need for more educational opportunities that focus on digital literacy; information, communication and technology (ICT) literacy; and computer proficiency (OECD, 2013). Additionally, education experts such as Strucker (2013) and Rotherham and Willingham (2010) have pointed to a knowledge gap among adults. These experts discussed societal recognition that basic education is not enough; educational attainment must reach beyond high school to meet new labor demands. Higher education, particularly at the community college and career/technical levels, has sought means to address the knowledge gap through development of college readiness programs, transition courses, and pathways programs that teach students what it means to succeed as a college student.

Additional discussions about adult-learner populations have emphasized the various challenges and barriers adults—particularly working adults in a family care role—face when they enter higher education for the first time or reenter higher education. Falasca (2011) reviewed the literature on barriers to adult learning, categorizing these barriers as external (aging, health issues, family roles, job circumstances) and internal (narrow perspectives about what constitutes education, reliance on previous notions, anxiety, and negative perceptions) (pp. 586–587). In addition, English-language proficiency and cultural background may also pose barriers to knowledge acquisition (Lange, Canuel, & Fitzgibbons, 2011). Such internal and external barriers may challenge students' motivation and persistence in higher education. While the motivation to start an academic program may be strong (O'Neill & Thomson, 2013), students' persistence and desire to continue or finish may wane based on a combination of these factors. According to O'Neill and Thomson (2013), more attention must be paid to improving self-efficacy outcomes for adult learners by emphasizing the relevance of educational experiences, and through quality interactions with instructors.

Integration into the Student Experience

Embedded Information Literacy

Within higher education institutions, academic libraries are in a position to help address the knowledge gap and help adult learners overcome some of the barriers to learning, particularly in terms of navigating expectations for academic research skills. To successfully complete many course assignments and academic programs, students must be able to effectively locate, analyze, and synthesize information. Importance has been placed on determining students' individual knowledge and skill level with regard to academic research. Where some students may have a solid understanding of what academic research is, others may have limited experience (Lange et al., 2011).

Information literacy is not a new concept, but one that is often used in education to describe the process of identifying a need for information and successfully locating, evaluating, and using a variety of sources to adequately respond to the information need or question. Information literacy is at the heart of academic research, but it is also a concept with broader applications and implications for society. Birdsong and Freitas (2012) noted various adult populations who benefit from scaffolded, just-in-time information-literacy instruction, including business employees, older adults, consumers of health information, and global populations struggling to catch up with information and technology advances in the developing world.

In efforts to meet twenty-first-century learning demands, academic librarians have reframed what information literacy encompasses. The Association of College and Research Libraries (ACRL) developed a framework consisting of the following six frames: (1) authority is constructed and contextual, (2) information creation as a process, (3) information has value, (4) research as inquiry, (5) scholarship as conversation, and (6) searching as strategic exploration. Each concept includes related learning outcomes called "knowledge practices" and "dispositions" (2015, p. 2) that show how each frame might be demonstrated by learners. Use of the new framework is in its infancy, and higher education institutions are just beginning to infuse curricula with this updated information-literacy language.

Faculty-Librarian Collaboration

Collaborative efforts between faculty and librarians have been well documented in the literature. Often, such collaborations focus on courses, such as composition, that are required for incoming students to build foundational research and writing skills. Examples include Burgoyne and Chuppa-Cornell's (2015) experience collaborating with faculty to run an information-literacy course alongside a composition course, an effort which resulted in higher completion rates and GPAs. In another example, Jacobs and Jacobs (2009) discussed their collaborations with composition faculty, which led to a shift in thinking and, ultimately, improved the way research and writing assignments were written.

Examples can also be found in disciplines such as business. Students in business programs must effectively evaluate, select, analyze, and synthesize information and data to develop accurate business plans and create innovative, competitive strategies for solving complex problems. A small-scale study suggests improved outcomes and perceptions for students who experience library-integrated business research instruction. Students were able to apply strategies learned in one course effectively in later courses (Kelly, Williams, Matthies, & Orris, 2011).

Proven Practices, Examples, and Results

The following practices and examples are based on the experiences of librarians at City University of Seattle (CityU). CityU is an institution that enables students to complete their education in various teaching modes. Curriculum is centralized and offered in many geographic locations. While in-person classes are available, most courses are offered online, as hybrid courses, or in person with a minimum online element. This model encourages collaboration between departments that fosters a unique relationship between the library and academic departments. CityU's environment makes it possible to collaborate with faculty to embed information-literacy instruction into the classroom. The online environment makes the courses flexible and adaptable to new techniques that enable integration. As a result of this relationship, the CityU library has developed three possible options for integration into an online class, and the options are classified into three levels depending on how integrated the library's instruction is.

This is facilitated by Blackboard, the learning management system (LMS), and could be adapted to any LMS used by an institution.

Tiered Information-Literacy Instruction

Level 1 instruction. The first level constitutes an access point for students to contact their liaison librarian. All contact information for the librarian for the class is added to the faculty information section of the Blackboard shell.

Level 2 instruction. Level two includes a more involved interaction with the class content. Materials, such as course modules related to the course content or research elements, are added to the course for students to use at their convenience.

Level 3 instruction. The third level is the focus of the faculty-librarian collaboration for this chapter as it involves students, the instructor, and the librarian working together to prepare and scaffold information-literacy learning. The focus of this level is to embed librarians into courses at the beginning of student learning. This would constitute embedding a librarian into the fundamental courses for a program. Collaboration with course managers is crucial in identifying these courses and ensuring that instruction is sufficient to learn the skills needed throughout the program. The third level involves an activity or class session moderated by the librarian in collaboration with the instructor. Students will learn a skill that is needed for an assignment in the class and receive the support needed to complete the assignment. The following section will demonstrate examples of level 3 instruction that have been implemented at CityU.

Instruction Practices and Examples

BEAM method. Bizup's (2008) BEAM framework is a new way of thinking about the resources that students use when conducting research for their assignments. It encourages students to focus their attention not on what their sources and other materials are, but on what they might do with them (Bizup, 2008, p. 75). Typically, when librarians teach research skills to students, they focus on the discovery of the items and the evaluation of the item itself. "BEAM presents a lexicon that moves away from the description of sources by type or provenance" (Rubick, 2014, pp. 99–100). Beyond these skills, students lack the knowledge to incorporate resources effectively into their work. By teaching limited skills, students also lose the way in which the item needs to be used effectively in academic research and writing. While BEAM is typically used in general studies, this method seemed suited for assignments in the CityU's School of Management, particularly in the writing of business plans and marketing plans where the assignment is composed of parts that need to be researched individually. This research skill is needed to produce a final product that is conducive to the work done in the workplace. The library launched a new activity using BEAM in an entry-level marketing class to increase student awareness of the library resources and to improve students' critical analysis abilities. This student support encourages students to interact with the librarian and enables them to become familiar with the resources available to them at the library early in their academic career.

The BEAM framework for research is composed of four parts: background, exhibits, arguments, and methods. Each part signifies an area of research that students are expected to fill by participating in the library activity. By collaborating with the course manager and instructors that teach the entry-level marketing class, the liaison librarian for the class was able to embed an activity to guide students through this process and to teach them research skills. In this class, each element has been incorporated into a secondary discussion board monitored and graded by the librarian. Each week, the students select a resource from the library or from the web and post it in the discussion boards with justification. This helps the students in placing the resource within the context of their assignment and supports the students in starting the plan early. By working on one element of BEAM per week, they learn that each area of the marketing plan needs to be backed up with a resource. When the BEAM framework is applied to specific courses within a program, the students can also learn what materials are required in the field when doing research (in this case, a marketing plan). The resources are shared with the class and a discussion about each resource takes place in the discussion boards.

Topic triangle. The Topic Triangle (often referred to as the Inverted Triangle) is a technique that librarians have put in practice in many CityU

classes. The triangle enables students to think about their topic in a way that helps them research in the library.

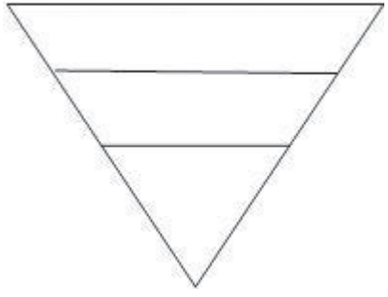

Figure 1: Topic Triangle

Using this inverted triangle, students are encouraged to place a broad topic in the first line. As they think about their topic, the triangle helps students narrow their topic. The following areas of the triangle can be filled in with narrower topics to help decide on the focus and to narrow the subject enough for library research. Each topic is entered in the library databases or catalog to get resources for the assignment.

This activity is most often conducted in library class sessions but can also be integrated into Blackboard shells or given to students as a handout when needed. This activity spans across all programs and is often the first step in deciding on a topic. This can be used for small papers or a thesis. The facilitation from the librarian enables students to learn what topics are too broad and which are too narrow. It also starts a discussion on keywords and research at the library.

Results

Results for these activities have been primarily qualitative with comments from faculty and students. The benefits to the marketing plan have shown a better use of the library and a better use of resources that are typically involved in a marketing plan. Students learn a combination of skills that are fundamental in writing and research. Since the example entry-level marketing course is one of the first courses taken at CityU, these skills can be carried forward to other classes. The scaffolding aspect is important to consider when embedding activities.

Instructors have seen progress in students' ability to research and a better use of resources in the final assignment for MK300. A marketing instructor stated:

> My experience has been that the quality of the work submitted by students after incorporating the library discussions/activities has been quite apparent. . . . They are able to substantiate themselves in a powerful way with appropriate resources thanks to these activities. The result is students who have a *much* stronger grasp of how to gather and use resources. I highly recommend incorporating this concept into other courses. (personal communication, November 17, 2015)

Another marketing instructor has seen significant improvement in the final product (marketing plan assignment) for the course as a result of sharing the detail the librarians have incorporated into this course. . . . [she] would like to see this process incorporated into all undergraduate courses that are taken early in a student's university learning. This would ensure or, at best, give them (the students) a better foundation when thinking critically and writing appropriately. (personal communication, November 15, 2015)

These results have led to lasting collaboration between the library, the marketing course manager, and the faculty.

The topic triangle has also generated good feedback from instructors who have seen the results of the activity. Topics are more succinct and the research associated with them is better as a result.

In addition to qualitative feedback, library associations are encouraging libraries to find new ways to assess the work they are doing. As an ongoing project, the library is working with data to quantify the impact that projects like BEAM and other forms of embedded librarianship have on student engagement and success.

Lessons Learned, Tips for Success, and Recommendations

Library student support is contingent on collaboration with faculty and embedding librarians into classes where the students can benefit from the support. Student support is one of the core elements of the library as a department.

Lessons Learned

As new twenty-first-century students, many are learning information-literacy skills for the first time. BEAM and other activities embedded in class have exemplified this observation. With these activities and collaboration with faculty, the library can ensure that students get this instruction early and frequently. One of the most important lessons the library has learned is that students respond best to library instruction when it is related to assignments in the class. Repetition not only encourages students to participate but also builds on the skills that they already have. It also enables the students to make the connection to the work they did in other classes. The library has the benefit of being able to be involved in many classes and being able to help the students with these connections.

Tips for Success and Recommendations

Work on a shared goal. In the collaborative spirit of CityU, different departments can work together to achieve necessary results. By determining what these goals are and working with others to gets results, faculty can share the workload and emphasize the expertise of the variety of people that work at CityU.

Collaborate early. Talk to your librarian early and make decisions regarding embedded instruction in classes. Classes taken early in their academic career are better for faculty and for students.

Build a relationship. Having a relationship between departments at CityU will make the student experience unique and engaging. By setting an example, students will learn that the librarians are there to help with their academic career.

Embed instruction into the class. Having information-literacy instruction embedded into the class helps students learn the context in which it can be useful. Designing activities and presentations with the assignments or tasks in mind helps the students be more successful and learn from the experience.

Conclusion

The twenty-first-century student is encountering challenges that are unique to this new learning environment. Just as the academic institution has changed, libraries have also seen the need to adapt. Online learning has created opportunities that librarians have used to make these changes. Through collaboration with faculty, librarians can now be embedded into the classrooms where need is determined. By using these new methods, the CityU librarians have experimented with activities that teach information literacy to increase student support. The success of these programs has encouraged the CityU librarians to explore new ways to teach information literacy in unique environments.

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