Information Literacy in the Changing Landscape of Distance Learning

The Collaborative Design of a Flexible, Digital, Asynchronous Course

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This paper offers a case study of the collaborative development of an information literacy course for students enrolled in an online, proprietary college. This credit-bearing course was created in accordance with ACRL’s Information Literacy Competency Standards for Higher Education as well as the newly adopted Framework for Information Literacy for Higher Education. The course treats information literacy as a meta-competency that encourages students to explore a variety of research tools, from social media to scholarly journals, and to develop critical thinking and research skills. In order to incorporate current best practices in information literacy pedagogy into the course itself, institutional factors needed to be addressed; these factors are reviewed here. This paper also explores implications for the future of the course, including assessment, the need to constantly adapt to the changing needs of students, and the ever-changing digital environment.

Introduction

In the late 19th century, the population of immigrants in the Northeast rose, and many turned to anthracite coal mining to make their living. This unskilled and mostly illiterate workforce made mining extremely dangerous (ExplorePAhistory.com, 2011). Thomas J. Foster, the publisher of Colliery Engineer and Metal Miner, sought to improve both the safety of the mines and the lives of miners, first through his magazine, and then, in 1890, with the establishment of the Colliery School of Mines in Scranton, PA. In 1900, the school’s name was changed to International Correspondence Schools (Penn Foster, 2015). As one of the first distance education providers in the United States, the school offered courses to immigrants, miners, and other laborers who hoped to fulfill their American dream of upward mobility. In its first 50 years, “more than four million workers enrolled in...more than
forty different courses in industrial education” (ExplorePAhistory.com, 2011). Since then, the school has evolved into one of the largest accredited providers of online education for high school, mid-level career/certificate programs, and college degrees. Today, Penn Foster enrolls nearly 120,000 students around the world in college-level and other programs.

The backbone of any academic endeavor, information literacy (IL) skills and abilities are crucial to a student’s – and indeed an institution’s – success. A recent study conducted by the New Literacies Research Lab at the University of Connecticut shows that many students are well-versed in social media, but lack the necessary online research and critical reading abilities that help them succeed in school and in the workplace (DeNisco, 2015). Penn Foster's students are no different than their 21st century counterparts at other institutions. In order to meet the demands of this underprepared student body and address flagging retention numbers, Penn Foster concentrated on creating a new information literacy course that would address students’ academic needs, help the institution meet its internal goals, and fulfill its accreditation requirements. Penn Foster’s new information literacy course has put the school at the forefront of online information literacy education by focusing on students’ needs and anticipating the Association of College and Research Libraries’ (ACRL) Framework for Information Literacy for Higher Education.1

Information Literacy Options for Distance Learning

Both librarians and students face challenges in a distance learning environment. Because of the explosion of online information and the migration of print sources to digital format, librarians need to adapt to the constant and evolving challenges of online research and teaching methods, while students must learn to engage in the research process on a more sophisticated intellectual level. According to the ACRL Standards for Distance Learning Library Services: “The instilling of lifelong learning skills through libraries is a primary outcome of higher education. Such preparation is of equal necessity for the distance leaning community as it is for those on the traditional campus” (Association of College & Research Libraries, 2008).

The growth of online and proprietary colleges and universities that promise education tailored to students' needs and industry demands has placed tremendous pressure on the digital libraries affiliated with these institutions to focus on subject-specific content, to identify and provide access to affordable and appropriate online resources, and to find ways to remain relevant to a population that has seemingly little use for traditional academic research. For these reasons, those invested in the academic fate of the online and distance education community, including administrators, faculty, and accreditors, need to invest in IL.

The main underlying problem hinges on students’ lack of facility in the real critical thinking and research skills that form the foundation of a college education. Among those skills, information literacy is becoming one of the most necessary in the contemporary digital learning environment. Casari, Henderson and Nunez-Rodriguez state that “faster technology, access to online information, and the exponential growth of knowledge trigger the need to explore new pedagogical approaches for helping students navigate and select sources of reliable information” (Casari, Henderson, & Nunez-Rodriguez, 2011, p. 270).

It is also important to overcome a certain level of denial among regular users of online media. Students feel they are very “information literate” when in reality they are skilled at texting, tweeting and posting. In a recent article, DeNisco (2015) states that

the distinction between social media skills and information literacy skills is often confused. Today’s students may be skilled at texting and social media, but many are unable to perform online research and distinguish accurate information on the web (p. 24).

As of 2013, one in eight college students was enrolled in some type of online education, either in individual courses as part of their traditional enrollment or full time (Straumsheim, 2015). On a superficial level, these students
appear well-versed in all things digital. However, in the face of research papers, citation and documentation methods, and the ever-present specter of plagiarism, the same students crumble. The result, especially in an online educational environment, is attrition, followed by the institution’s inevitable focus on retention.

As more institutions create online divisions, and as more exclusively online colleges crowd the landscape, there is now a pressing need to instruct the remote learner of information literacy in an equivalent fashion to the bricks-and-mortar learner. Traditional, college-age students need to learn how to do research online, research that does not focus solely on Facebook, Twitter and Wikipedia. Alternatively, nontraditional students, who may have earned degrees prior to the birth of the World Wide Web or who may be seeking a degree later in life, need to learn how to do online research. Margaret Adolphus (2009) put it very well when she stated:

Teaching customers, students, faculty members, and library patrons to be information literate is at the top of most librarians' agenda, particularly for those working in higher education. Over the past 30 years, there has been a huge growth in the use of e learning [sic] and blended learning, with many librarians using online methods to deliver information literacy. (p. 20)

In 2012, Concordia University revised its IL curriculum in order to better address the needs of students who were growing more reliant on online resources and who needed “a specific skill set required to efficiently sift through the multitude of digital resources freely available online or through a university library database, and perhaps more importantly, developing the ability to evaluate those resources” (Wade, Locke, & Devey, 2012, p. 6).

Other institutions have also chosen to incorporate information literacy as either a stand-alone course or a mandatory tutorial portion of an introductory English course. Excelsior College, an all-online college similar to Penn Foster, offers an introductory IL course. Excelsior has concluded that providing a background in IL is a necessary requirement for all incoming students:

In this age of information proliferation, students must acquire the necessary skill to understand and discern the wide range of content across all mediums. Students must be able to determine where to locate and effectively access information, critically evaluate the source and use the information within legal and ethical parameters. (Excelsior College, 2015)

The variety of methods employed illustrates that there is no magic bullet approach to IL. Educators and librarians are at the mercy of their institutions’ willingness to participate and fund IL endeavors, as well as their students’ intellectual curiosity and desire to learn. Penn Foster’s IL course embraces the reality of IL in the twenty-first century, and focuses on encouraging students to channel the skills they already possess into more formal, academic areas.

Information Literacy at Penn Foster

As an institution, Penn Foster faces many of the same retention issues found at most colleges and universities, which are further compounded by the fact that Penn Foster delivers online, asynchronous, self-directed degree programs. In other words, Penn Foster students who lacked the information literacy skills to successfully complete their coursework were also unable to find help or support to guide them in the right direction. The existing information literacy course did little to address this skills deficit. The original course was launched to students in 2004, using a proprietary study guide, and focused on traditional research concepts and methods that armed students with Dewey Decimal or Library of Congress catalog numbers, and sent them to the stacks to find information, an obvious paradox in an online, distance-learning environment. Although the course provided instruction on the use of
subscription databases, the concepts themselves were lost in a sea of Boolean search methods and wildcard operators that obfuscated the real benefits of the digital library.

When the course was revised a few years later, much of the original content remained intact and supplementary material was added to address Internet-based research, but the revisions did not include contemporary and appropriate content that truly met the needs of students, nor did the revisions address the ACRL Information Literacy Competency Standards for Higher Education. New content focused on students' proclivities to go to the Web first and evaluate later, while student assessment methods, in the form of multiple-choice exams, tied static questions to specific online information that was often changed or updated.

Information literacy appeared on the radar at Penn Foster when it became obvious to stakeholders in the institution’s education division that the existing course was not meeting its defined objectives. Assessments that reviewed exam scores and student surveys showed that students were struggling with exams and, most importantly, were not completing the course successfully, if they completed it all. Assessment data from January 1, 2013 to June 30, 2013 shows the decline from the number of first exams completed to the number of second exams, resulting in an overall attrition rate of 18.74%. Correlative surveys revealed the depth of students’ dissatisfaction with the course’s ability to provide the instruction necessary to their future success (Figure 1). Students consistently indicated their frustration with the level at which content was presented and the inability to find answers to questions because of the basic nature of information on the Internet and regular updates to subscription databases. Even the Library of Congress caused strife because of updates to its user interface. Students’ comments reflecting their discontent with the course ranged from “I found this very confusing” and “Could not understand some of it” to “It was knowledge I did not really need” and “I don’t see how this helps with what I'm studying.” In response to stagnating retention numbers and student dissatisfaction, Penn Foster’s academic team planned for a major revision of the course.

Because students found the course irrelevant to their education goals and because the existing course did not align with any IL standards, a new IL course needed to provide the foundation for later courses where students struggled with research and to address academic integrity in more detail. According to Gardner and Hardesty (2004):

Bibliographic instruction . . . can go a long way towards student retention through information literacy proficiencies. By giving students the skills to cope with the research demands of higher education, they are more likely to succeed . . . No one likes being thrown into the lake without instructions on how to swim. Why would universities use the same method by giving students research assignments and then just ushering them out of the classroom with a general nod toward the library? (p.1)

For these reasons information literacy became the target for a number of new initiatives brewing at Penn Foster. Administrators wanted to address the outdated content and focus on the role the course played in retention efforts. As the initial credit-bearing course in many of Penn Foster’s college degree programs, the IL course needed to provide a solid foundation for student success. In addition, the instructional design team was beginning to consider alternatives to the PDF study guide and wanted to design a course that would fit within an online instructional environment. This perfect storm coalesced with the hiring of a new librarian and senior English instructor. As Gardner and Hardesty (2004) contend, “When designing orientation curriculum, [IL] skills need to be at the top of the roster and librarians should be consulted throughout the creation and implementation of these courses” (p.1). Since IL is an English course at Penn Foster (ENG103), the English instructor and librarian became both the writers and subject-matter experts in the course design process, and began to work with existing content to determine what could be re-used and where updates were needed. The writers planned extensive instruction in online research and evaluation of sources, as well as an introduction to academic integrity. Because research, writing, and citation and documentation form a naturally symbiotic relationship, this fit made sense. Both faculty members also had extensive experience in course design, outcomes assessment, and accreditation review.
Research instruction was revised to focus on the practical rather than the esoteric. The new IL course needed to concentrate on more pragmatic approaches to research and its applications in both academic and career settings, from formulating research questions to citation and documentation methods. The course would also continue to provide library instruction to students, but the new content changed significantly. The course covers Penn Foster’s digital library resources, including its subscription databases, eBooks, and other sources. It also encourages students to expand their IL horizons beyond Penn Foster to their local libraries where their skills will be just as useful at helping them to acquire information.

A more in-depth introduction to academic integrity was included in the course. Citation and documentation introduced students to their rights and responsibilities when using secondary sources. The purpose was not to teach the finer points of specific methods, but to inform students of their existence and forewarn them that such methods must be employed in order to avoid the consequences of violating the college’s academic honesty policy.

While faculty worked on course content, the instructional design (ID) team chose the Lectora authoring software to create content suitable for the online environment. The written course was submitted to the ID team to format. However, upon receiving the electronic version of the course for review, the faculty found that original content was stripped from the course to fit Lectora’s design concept, and written material was replaced with graphics and images from a variety of websites that had not been vetted by the faculty team. These choices, made independently by the instructional designers, compromised the overall effectiveness of the course and caused pedagogical and andragogical debate between the faculty and ID teams. Penn Foster’s instructional designers are not always familiar with the requirements of accrediting agencies or the standards by which these agencies measure course objectives and content. The English instructor and librarian needed to educate the ID team on the ACRL...
Information Literacy Competency Standards for Higher Education and refocus their efforts on course content, not just the formatting possibilities of a new electronic design. At this point, the Education and ID teams met to refocus on the goals and objectives of an IL course that would meet accreditation requirements.

Accreditation

As an accredited institution that holds membership in the American Council on Education (ACE), objectives for the new IL course would be dictated by ACE, the Distance Education Accrediting Commission, the Middle States Commission on Higher Education, and a variety of discipline-specific accrediting bodies. In order to earn approval from the American Council on Education, the new IL course would need to be reviewed by an ACE CREDIT Content Review Committee, which would examine the course content, including the description, syllabus, objectives, “and other curriculum materials to crosswalk identified learning outcomes with the taxonomy of instructional program classifications published by the U.S. Department of Education” (American Council on Education, 2015, p. 1). In addition, the learning outcomes for the course “must be similar in nature to the course content found in one of four postsecondary education categories: technical/vocational/certificate, associate, baccalaureate, or graduate” (American Council on Education, 2015, p. 1). Given Penn Foster’s self-directed, asynchronous learning model, these guidelines are met by determining the number of hours dedicated to the acquisition of course content (time dedicated to reading, studying for exams, watching videos, attending webinars, etc.), and application (time dedicated to homework, taking exams, researching, writing papers, etc.).

In order to satisfy ACE and other accreditation standards, the faculty writers aligned the course objectives to the ACRL Information Literacy Standards for Higher Education and subsequently to the Framework for Information Literacy for Higher Education. Penn Foster’s IL goals state that the course will prepare students for college-level research by introducing students to

• the need for information
• the need to use information effectively
• the need to evaluate information, the different types of information
• the need to use information in a responsible and ethical way

The course is divided into three lessons, each of which corresponds to the ACRL’s Standards and Framework. For example, course objectives for Lesson 1 state that students will learn how to determine a research topic and ask specific research questions; find helpful resources; and understand the differences between types of resources. These objectives correspond to Standard 1 of the ACRL Information Literacy Competency Standards for Higher Education, which states, “The information literate student determines the nature and extent of the information needed,” and Standard 2, “The information literate student accesses needed information effectively and efficiently” (Association of College & Research Libraries, 2000). The same lesson objectives align well with the ACRL Frames: “Scholarship as Conversation,” and “Research as Inquiry” (Association of College & Research Libraries, 2015). Within the lesson itself, students learn to define their research topics, to ask questions to further their research, to differentiate between primary and secondary sources, and to identify the most appropriate sources for their research assignments. These objectives are measured with embedded self-check quizzes on the lesson content, two discussion boards in which students respond to assigned prompts, and finally, a multiple-choice exam. Lessons 2 and 3 build on students’ ability to locate appropriate sources by providing instruction on incorporating information into their projects and papers which draws on ACRL Standard 3 and the Frames “Authority is Constructed and Contextual” and “Searching as Strategic Exploration,” and also covers the ethical and responsible use of information, reflected in ACRL Standard 5 and the Frame “Information Has Value” (Association of College & Research Libraries 2000, 2015).
Since its launch in July 2014, the new IL course has passed several accreditation tests, including the Accrediting Bureau of Health Education Schools (ABHES), American Veterinary Medical Association (AVMA), Middle States, DEAC and most recently, ACE.

The Revision Process

As the faculty experience at Penn Foster and the wealth of scholarship on IL pedagogy and IL course design illustrate, those looking to adopt or revise IL instruction at their institutions may face many challenges. It is imperative to consider the students who will be served by an IL course or program. Their levels of education and traditional literacy should determine program content and relevant modes of assessment. Following internal testing on the electronic format and content revision, a pilot program was launched in April 2014 to test the new electronic version of the course alongside the current live version. In the pilot, the new course was introduced to half the newly-enrolled students in Penn Foster’s three largest college programs: Business, Early Childhood Education, and Veterinary Technology. The team determined that the pilot was successful by examining student survey, attrition, and exam data. The new version of the IL course showed a 5% increase in overall exam scores, despite the addition of a third exam and an increase in enrollment (Table 1). In contrast to the previous version of the course, survey comments stated, “Very informative class;” “Wow, lots of good info!” and “I had a good experience with this course.” The institution continues to monitor the success of the course and the instructors ensure that it remains current in light of new trends in IL-related scholarship pertaining to online, competency-based education.

The Future of Information Literacy at Penn Foster

The future looks bright for information literacy at Penn Foster. Many new theories and tools have emerged to support both online and hybrid delivery methods, most of which focus on the role of librarians at their institutions.

Once an introductory IL course has been established, one of the most effective methods for continued IL instruction is the embedding of librarians into courses and programs, which is becoming standard practice in online higher education. Carlson and Kneale (2011) summarize the process:

As librarians seek to redefine themselves, the model of embedded librarianship is generating interest as an effective means of applying the knowledge and skills of librarians towards the information challenges of the digital age. Embedded librarianship takes a librarian out of the context of the traditional library and places him or her in an “on-site” setting or situation that enables close coordination and collaboration with researchers or teaching faculty. (p.167)

Second, it is imperative to acknowledge that an all-digital library that serves an online student population has different organizational needs than its bricks-and-mortar counterpart. LibGuides and similar content-management systems are another way to foster IL within course content. LibGuides allow librarians to create online guides that draw together specific resources from within the library’s collection and external sources, to better target an individual course and its specific course-related or specialized research needs. LibGuides can be easily created, maintained, and updated as courses change, making them ideal for an online learning environment.

Incorporating these tools and methods will only enhance the delivery of information literacy to students in all settings, whether traditional or remote. ACRL’s 2015 Framework states:

The rapidly changing higher education environment, along with the dynamic and often uncertain information ecosystem in which all of us work and live, require new attention to foundational
ideas about that ecosystem. Students have a greater role and responsibility in creating new knowledge, in understanding the contours and the changing dynamics of the world of information, and in using information, data, and scholarship ethically. Teaching faculty have a greater responsibility in designing curricula and assignments that foster enhanced engagement with the core ideas about information and scholarship within their disciplines. (Association of College & Research Libraries, 2015)

At Penn Foster, the librarian and senior English instructor co-authored the new IL course, and subsequently expanded that collaboration to include the revision of other courses with required research components. These courses have become a crucible for testing IL outcomes, embedding the librarian, and providing content on the Community, Penn Foster’s social network, where students can interact with faculty and find answers to their questions in posted content. In addition, the course has been adapted for career school certificate programs where information literacy supplements offer support for student coursework. The librarian has also built collaborative relationships with other departments such as Veterinary Technology, in order to learn course content and to ensure that students are aware—via their course study guides and other online platforms—of the required resources that are available via the digital library (Appendix A).

Assessment Goals

Due to the nature of Penn Foster’s open enrollment and asynchronous, self-directed learning format, students hit assessment milestones at different times. In the course, student performance is measured by three multiple-choice exams and six discussion boards, divided equally over three lessons. At the one-year anniversary of the course launch in July 2015, the instructors have begun to address assessment by examining attrition rates, exam data, and course surveys. In the near future, a more in-depth examination of the course itself will focus on the discussion boards; the faculty instructors have written a rubric in order to assess students’ responses against course objectives. Penn Foster’s analytics program can also provide data on multiple-choice exams that shows students’ overall success or failure rate, and that measures the validity of each question. The ability to work with such a large sample and to analyze the specific elements of each measurement will allow the instructors to adjust the course as necessary to address areas where students need more support, or alternatively, where they need to be challenged more.

Penn Foster’s ability to collect data will also allow a second tier of research to test the long-term efficacy of the IL course. Data will be collected to determine students’ ability to retain and apply IL course content such as the use of reliable sources and correct citation and documentation methodology. English Composition, Biology, World Civilization, Psychology and Sociology include research papers or projects that can be analyzed according to IL course objectives, the ACRL Standards, and the new IL Framework to illustrate where the course is meeting objectives and where improvements can be instituted to better serve students over the span of their college programs. Eventually, upper-level courses that include research projects can be added to the assessment program. The long-range benefits of on-going assessment strategies include improved retention (because students are better prepared to face increasingly complex projects), improved completion rates, and better outcomes aimed at accreditation goals.

Penn Foster’s efforts to reform IL have already paid dividends. Data from retention and exam metrics as well as from student survey data (Figure 1 and Figure 2) show an increase in student satisfaction.
Figure 2
Student Survey data from 2015 for ENG 103- Information Literacy. Penn Foster’s open enrollment and asynchronous pacing, makes it difficult to pinpoint an exact sample size, therefore we evaluate a six-month time period, from January 1, 2015 to June 30, 2015. 77.3% of students strongly agreed or somewhat agreed the course met their expectation. 19.1% were neutral and 3.6% of students somewhat or strongly felt that the course did not meet their expectations.

Further assessment also illustrates an increase in average exam grades (Table 1) and an increase in retention for the IL course.

Table 1
Overall exam grade comparison of old Information literacy course, ENG 103BC and new Information Literacy course ENG 103BD. The new course (ENG103BD) moved to a 3-exam model in order to accommodate the Lectora platform and to shorten content in lessons for easier comprehension.

<table>
<thead>
<tr>
<th></th>
<th>Old Information Literacy course ENG 103 BC January 1, 2013 - June 30, 2013</th>
<th>New Information Literacy course ENG 103 BD January 1, 2015-June 30 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1 Overall grade</td>
<td>80%</td>
<td>83%</td>
</tr>
<tr>
<td>Exam 2 Overall grade</td>
<td>80%</td>
<td>82%</td>
</tr>
<tr>
<td>Exam 3 Overall grade</td>
<td>n/a</td>
<td>85%*</td>
</tr>
</tbody>
</table>

*The content previously covered in exam 2 of the old course (ENG103BC) was now delivered in two lessons and exams as opposed to one.
The combined increase in exam grades from ENG 103 BC to ENG 103BD is 5%. The enrollment data and completion rate for the course from 2013 to 2015 showed that the overall retention rate improved by 7.74%.

Anecdotal evidence on the Community and questions that students submit to the “Ask a Librarian” email are beginning to reveal highly-defined inquiries that reflect the students’ improved research efforts. Faculty and administration stakeholders are also starting to invest in broader efforts to spread the information literacy gospel, incorporate research into courses and assignments, and adopt the embedded librarian concept to improve their programs and outcomes. Penn Foster’s focus on information literacy places the institution at the forefront of online IL pedagogy and practice.

Notes
1 Penn Foster’s digital Information Literacy course can be viewed at http://lessons.pennfoster.com/pdf/250909/index.html

References


Appendix A: Creating and Evaluating an Information Literacy Course for Distance/Online Learners: A Checklist to Get Started

Creating and Evaluating an Information Literacy Course for Distance/Online Learners: A Checklist to Get Started

Determine Need

- Evaluate current IL course, modules, supplements, tutorials or program
- Compare to ACRL Standards and Framework
- Determine your institutional needs by examining student demographics, pedagogical philosophy, course delivery, etc.

Process

- Survey students to determine level of information literacy and need for lesson, module or course
- Survey faculty to determine their perception of students’ IL skills and IL deficits
- If you have access to an instructional designer, have him or her assess your current program in light of contemporary ID standards
- Compare/research other IL courses or programs designed for distance learners

Challenges

- Librarians, faculty, administration and IDs need to be educated about the ACRL IL Standards and the Framework
- Librarians, faculty, administration and IDs need to understand current pedagogy/andragogy of distance learning
- Appropriate format or platform for delivery need to be considered
- Ensure librarians (and other faculty) are included in the entire process, start to finish
- Librarians need to become familiar with content areas (courses) where IL skills will be most used

Accreditation

- Research your institution’s accrediting bodies, specifically their standards for IL

Assessment

- Collect data from your current course, modules, supplements, tutorials or programs
- Start rate
- Completion rate
- Grades (if exams are given)
- Student surveys of expectations of course, module, supplement, tutorial or program
- Assess student performance against course objectives