



# Open Information Literacy Courses

**Lauren Hays**

**MidAmerica Nazarene University**

**Nancy Damron**

**MidAmerica Nazarene University**

## **Abstract**

Open education is changing the landscape of higher education. There are many aspects to the open education movement, and the authors of this paper focus on open courses. Librarians and educators who teach information literacy must adapt their instruction to courses that are open instead of using the same strategies that are employed in traditional education or distance education settings. In this paper, the authors discuss the theories of connectivism and social learning theory and how both theories apply to information literacy and its foray into open courses. Additionally, the concept of lifelong learning is crucial to open education, and its close ties to information literacy are examined. The authors conclude by discussing the content of information literacy courses in an open environment.

**Keywords:** information literacy, open courses, open education, connectivism

## Introduction

*“The ability to knit together information from disparate sources into a coherent whole is vital today”* (Gardner, 2008, p. 46).

As distance and online education have been transitioning, librarians have adapted to online distance education by creating video tutorials (Viggiano, 2004), becoming embedded in online courses, creating blogs (Drumm & Havens, 2005), hosting webinars (Carlson, 2011), and placing information within the learning management system (McLean & Dew, 2006). Through these efforts, librarians have worked to embed information literacy in distance education courses.

Online education has become a standard practice within traditional education and it is no longer the latest educational trend. Education, particularly higher education, is once again in flux with open courses. Specifically, massive open online courses (MOOCs) are now an opportunity to further a person’s education. MOOCs are not alone, though, in the effort to push the boundaries of traditional education. The open education movement is supported by sites such as Khan Academy, OpenCourseWare (Carson, 2009), open educational resources (Caswell, Henson, Jensen, & Wiley, 2008), and the open access movement. According to McAuley, Stewart, Siemens, and Cormier (2010), open online courses “assist in developing the skills of individuals to participate in a digital economy by developing skills in collaborating with others online and developing digital artifacts” (p. 10). All the aspects of open education will not be addressed in this paper; instead, the focus will be on open courses.

Information literacy skills are not synonymous with technology usage skills. According to November (2010), “technology is just the digital plumbing” (p. 4) used to access information (Marzano & Heflebower, 2012). Once the information has been obtained, the consumer must determine what to do with it. David Considine, a media literacy expert, states that students do not have the “ethics, the intellectual skills, or the predisposition” (Marzano & Heflebower, 2012, p. 12) to critically think about the information they consume on the internet. Implications for those furthering their education through open courses and online learning are then tremendous. It is all the more important to consider how information literacy will and should be taught.

## Theory of Connectivism

Huijser, Bedford, and Bull (2008) note that access to resources does not correlate with the development of information literacy. Instead, information literacy skills are developed through purposeful teaching. George Siemens, the author of the theory of connectivism, states learning “is focused on connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing” (Siemens, 2004, para. 23). Possessing skills in information literacy aids in creating connections. When someone is able to use information effectively, they are able to learn without being taught. Their ability to increase knowledge expands, which, according to Siemens (2004), is more significant than what they already know. The increase in knowledge occurs through the student’s ability to make connections and create a “personal network” (Siemens, 2004, para. 31). The value of the personal network will increase as those within the network grow in knowledge from their own sources.

According to the theory of connectivism, individuals need to know where to locate information more than they need to know the information (Siemens, 2004). With this in mind, information literacy should be integrated within discipline specific curriculum. Students need to realize information skills are applicable to different fields and areas of study. When this connection is made, students will not see information literacy in isolation but will understand how information literacy skills allow them to know when they need information, how to locate it, how to evaluate the findings, and how to use the information they have located.

There is also room in open education for courses focused on information literacy skills. Currently, popular MOOC aggregators such as CourseBuffet, Knollop, CourseTalk, Class Central, MyEducationPath, and MOOC List do not list many courses focused on information literacy skills. The few courses mentioning information literacy skills tend to embed the topic briefly in courses teaching broad internet usage skills. “Responsible Computing,” offered through Carnegie Mellon University, is one course in which information literacy is the focus. This course is designed for college freshmen to prepare for research requirements in higher education (MyEducationPath.com, 2013). Classes that specifically target information literacy skills allow students to view the broad information landscape. In these courses, instructors should encourage students to make connections between the skills they are learning and other classes they have taken. While this is true for all information literacy courses, it is particularly true for open courses because of the wide range of students who will be enrolled.

## Diverse Learner and Connectivism

MOOCs are not capped which can lead to a staggering number of enrollees. In 2011, Sebastian Thrun of Stanford University taught a massive open online course on artificial intelligence. Weeks before it started over 100,000 students had enrolled in the course (Leckart, 2012). Coursera, a company started by Stanford professors Daphne Koller and Andrew Ng, enrolled 680,000 students in its first year of operation (Lewin, 2012). With numbers this large, it is essential that instructors of open online courses create opportunities for information literacy connections within the course. The network created in the course will broaden the students' capabilities for learning.

Assumptions cannot be made about a student's prior knowledge or critical thinking skills. For students to acquire information through open courses and then make connections between these multitudes of content, synthesis must take place. As information literacy skills are taught, instructors must also teach synthetic thinking (Gardner, 2008). The idea proposes that learners must know how to access information rather than simply knowing information as the first step in being an educated information consumer. The second step in consumption is making sense of, or synthesizing, the information found. In order for learners to develop these thinking skills, they must know how to navigate digital sources, determine errors in thinking related to misunderstandings and incorrect information, reach decisions through analysis, and present findings with supportive evidence of those claims (Marzano & Heflebower, 2012). The connection between information literacy skills and this kind of higher level thinking is unquestionable (Davis, 2010). Instructors should build courses that approach information literacy with the theory of connectivism at the forefront and an understanding of the skills associated with synthetic thinking. This will aid students in gaining the skills to assist them in locating and using information in a diverse world.

## Social Learning Theory

Albert Bandura (1977) in his theory of social learning states that learning is a social activity which occurs by observation. The movement of open courses further supports Bandura's work as open education employs social activities for learning with and from peers. Bandura (1977) also recognizes that behaviors are "modeled" (p. 22). Modeling can take many forms

within open education and should be a consideration in the creation of course material.

Knowledge gained through information is influenced by the person using it, the purpose of its use, and unique perceptions, as well as how it is conveyed (Maqsood, Finegan, & Walker, 2004). A social approach to information literacy will aid students in understanding how to use the information network they are building to acquire knowledge. Using Bandura's social learning theory will assist instructors in teaching information literacy. Open courses are accessible to everyone in the world with access to an internet connection. The wide variety of students will have an effect on the social characteristics of a course and the perspective in which the course material is filtered (Sims, 2008). Access to resources, intellectual property laws, and interpretation of a source's value will widely vary depending on a student's country and economic background. Fostering discussion to include different points of view will encourage the growth of a deeper understanding of information issues as they pertain to diverse cultures.

Many of today's social activities occur online. In an open education class, instructors should encourage interaction among students and build a sense of community within the course. Students should learn what questions to ask when they have an information need and the same students should learn how to respond to the need. Instructors need to guide students in this learning activity. The dialogue between peers and between instructor and student will teach students when they need to ask for information. The diversity of students in an open course will also yield diversity of information sources. The students will need direction from the instructor to evaluate the resources and ensure dialogue is continued. Lane (2009) addresses the issue of "less sophisticated learners" (p. 8) struggling with how to use information. Discussion on the value of an information source will aid students in understanding different types of information and how each is used. Teaching such critical thinking skills helps learners to quickly determine the accuracy of information (Marzano & Heflebower, 2012). "Learning specific facts without acquiring the thinking skills necessary to assess the significance of those facts is of little lasting value" (McCain, 2005, p. 15).

A social approach can be emphasized through the building of community and using connectivist theory within the course. Many open courses already include community building activities through the creation of a course hashtag, sending out daily/weekly e-mails to keep everyone enrolled in the course updated on class events or discussions, linking to blogs where students are discussing the course, hosting webinars, and having a discussion board. In spite of the potential number of enrollees, instructors of open courses should not be deterred from

community building. New methods such as connecting the students to local information sources and building knowledge networks can provide the needed framework for students to create community. The theories of connectivism and social learning will further be supported through these efforts.

## Lifelong Learning

Information literacy is a skill needed in lifelong learning and is not a skill confined to academia. This was confirmed by the Alexandria Proclamation on Information Literacy and Lifelong Learning in 2005. At this event, sponsored by the United Nations Education, Scientific, and Cultural Organization (UNESCO), information literacy was declared to lie “at the core of lifelong learning” (National Forum on Information Literacy, 2005, para. 2). Moreover, the Alexandria Proclamation stated that information literacy

*empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in the digital world and promotes social inclusion of all nations (National Forum on Information Literacy, 2005, para. 2).*

With open education and the changing demographics of education from traditional students to non-traditional students, information literacy as a lifelong skill is a necessity. Furthermore, the modern global age demands learners possess information literacy skills that imply “having the ability to decode information from all types of media” (Sankey & Nooriafshar, 2005, p. 155). Searching skills provide the learner with ways to enhance their knowledge. Understanding how information is created and disseminated assists in providing a context for what is learned (Birdsong & Freitas, 2012).

Students who understand when they need information, how to search for the needed information, and how to use it ethically (Association of College and Research Libraries, 2000) are able to succeed. As the education system prepares learners for the workplace, it is important to ensure workers are educated in real world skills. Failure to do this will result in the production of “highly educated, useless people” (McCain, 2005, p. 5). In 2005, the average worker in the United States spent an average of nine hours a week looking for

needed information (Feldman, Duhl, Crawford, & Marobella, 2005). One of the main tenets of connectivism is that students will be able to make “connections between fields, ideas, and concepts” (Siemens, 2004, para. 25). This skill is even more relevant when considering a survey conducted in 1998 found that 76% of executives viewed information as the resource most valuable to their business (Feldman & Sherman, 2003).

Teaching with these needs in mind means we need to generate an interest in learning. It is through developing an interest in learning that content becomes “sticky” (Langley, 2011). As Richard Saul Wurman states, this step of making content interesting to the learner is what allows content to be retained and sparks an interest in further study (McCain, 2005). Teachers resisting the urge to “tell” students content but rather allowing self-discovery is at the heart of the open education movement and social learning. Turning this interest into lifelong learning will only happen if content is taught in a way that includes social interaction, information literacy skills, and stimulating content. Information acquisition is preceded by curiosity and motivation for learning (McCain, 2005).

Information literacy instructors must also display how information is used outside of the academic world. Learners must see information skills as helping them achieve their goals. In open education, librarians need to be at the forefront of promoting these skills. If students see the connection of information skills to their life, obtaining information literacy will be seen as valuable.

## Course Content

Course design and content for information literacy in an open course should not be the only considerations.

*Designing a course includes depicting the process of learning. It requires a view from the user’s perspective, an understanding of user needs, the prediction of possible problems, and the consideration of efficient ways of acquiring knowledge and skills in the given field (Gruca, 2010, p. 27).*

Just-in-time learning opportunities are ways to incorporate information literacy lessons into an open course. These lessons then become open courseware when the course is completed



and can be approached in two different ways. First, they can be created by the instructor in response to an anticipated lack of understanding. Second, they can be created as the course progresses and students are demonstrating a lack of understanding or when there are specific topics in the discussions where more clarity is needed.

The idea of just-in-time learning further supports Trilling and Fadel's findings that students expect a different kind of approach to learning, one that yields quick accessibility to information, answers, and responses (Marzano & Heflebower, 2012). These learning opportunities should be relatively short and leave the viewer with the understanding that there are opportunities to further enhance their information literacy skills through new and established personal networks.

Learning cohorts can be created in the open course to assist in promoting modeling and building students' personal networks. Small groups provide opportunities for students to build relationships. In MOOCs, small learning groups have been created by the students ("What campus leaders," 2012). Some groups have been based on geographic location. The nature and makeup of the group can vary, depending on whether they are student-generated or instructor-formed.

In an open education environment, access to resources will rely heavily on internet-based information sources. This idea is supported by the theory of connectivism as one of the main guidelines of the theory is the timeliness of the information being used and studied (Siemens, 2004), which encourages the use of sources available online. Unless schools and companies that host open courses are willing and able to subscribe to databases where the content is licensed for students registered in open courses, resources discussed in an open education class will not be able to come from these proprietary sources. Access to proprietary databases in open courses will require negotiation with the vendors to implement a stable pricing model as the fluctuation in active enrollees has the potential to vary widely in open courses. Open access journals will be sought by those both in and out of traditional educational settings who are looking for quality information.

In an open online course, instructors will need to consider how to teach the content without the use of a purchased text. Once again, the importance of online content cannot be overstated. Instructors will need to point their students to material available for them to read online without violating copyright laws. Therefore, linking to information or embedding open access content will be necessary to maintain a truly open course (Schwartz, 2013).

## Conclusion

The manner by which librarians and other educators provide access to information must align with learner expectations and needs. Connectivism clearly supports the teaching and integration of literacy skills across disciplines. As learners seek new understandings with the ease of the internet, it is important to provide a forum for learning how to filter mass amounts of information. The methods used for this must encourage motivation and heighten interest in learning content and thinking critically. Such methodology provides opportunities for social interaction and facilitates lifelong learning. As students move through the P-20 education experience and are given the opportunity to experience open classes, being able to digest information and make intellectual connections will be all the more critical to becoming educated (McCain, 2005).

## References

- Association of College and Research Libraries. (2000). *Information literacy competency standards for higher education*. American Library Association. Retrieved November 14, 2012, from <http://www.ala.org/acrl/standards/informationliteracycompetency>
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NY: Prentice-Hall.
- Birdsong, L. & Freitas, J. (2012). Helping the non-scholar scholar: Information literacy for lifelong learners. *Library Trends*, 60(3), 588-610.
- Carlson, K. (2011). Using Adobe Connect to deliver online library instruction to the RN to BSN program. *Journal Of Library & Information Services In Distance Learning*, 5(4), 172-180.
- Carson, S. (2009). The unwallied garden: Growth of the OpenCourseWare Consortium, 2001-2008. *Open Learning: The Journal of Open and Distance Learning*, 24(1), 23-29. doi: 10.1080/02680510802627787
- Caswell, T., Henson, S., Jensen, M., & Wiley, D. (2008). Open educational resources: Enabling universal education. *The International Review of Research in Open and Distance Learning*, 9(1). Retrieved December 13, 2012, from <http://www.irrodl.org/index.php/irrodl/article/view/469>
- Davis, Heather (2010). Critical literacy? Information! *In the Library with the Lead Pipe*. Retrieved June 5, 2013, from <http://www.inthelibrarywiththeleadpipe.org/2010/critical-literacy-information/>

- Drumm, M., & Havens, B. (2005). A foot in the door: Experiments with integrating library services into the online classroom. *Journal of Library & Information Services in Distance Learning*, 2(3), 25-32.
- Feldman, S., Duhl, J., Crawford, A., & Marobella, J. R. (2005). *The hidden costs of information work* (White Paper 0405). Framingham, MA: IDC. Retrieved January 15, 2013, from <http://www.scribd.com/doc/6138369/Whitepaper-IDC-Hidden-Costs-0405>
- Feldman, S. & Sherman, C. (2003). *The high cost of not finding information*. Retrieved December 13, 2012, from <http://www.ejitime.com/materials/IDC%20on%20The%20High%20Cost%20Of%20Not%20Finding%20Information.pdf>
- Gardner, H. (2008). *5 minds for the future*. Boston, Massachusetts: Harvard Business Review Press.
- Gruca, A. (2010). E-learning in academic libraries. *New Review of Information Networking*, 15(1), 16-28. doi: 10.1080/13614571003741395
- Huijser, H., Bedford, T., & Bull, D. (2008). OpenCourseWare, global access and the right to education: Real access or marketing ploy? *The International Review of Research in Open and Distance Learning*, 9(1), 1-13.
- Lane, A. (2009). The impact of openness on bridging educational digital divides. *The International Review of Research in Open & Distance Learning*, 10(5), 1-12.
- Langley, David (2011). Creating “sticky” teaching. *Techniques in Learning and Teaching where transformative learning and scholarly teaching meet*. Retrieved June 5, 2013, from <http://uminntilt.wordpress.com/2011/12/12/creating-sticky-teaching/>
- Leckart, S. (2012, March 20). The Stanford education experiment could change higher learning forever. *Wired.com*. Retrieved November 17, 2012, from [http://www.wired.com/wiredscience/2012/03/ff\\_aiclass/](http://www.wired.com/wiredscience/2012/03/ff_aiclass/)
- Lewin, T. (2012, July 17). Universities reshaping education on the web. *The New York Times*. Retrieved December 13, 2012, from <http://www.nytimes.com/2012/07/17/education/consortium-of-colleges-takes-online-education-to-new-level.html?pagewanted=all>
- Maqsood, T., Finegan, A. D., & Walker, D. H. (2004). Biases and heuristics in judgment and decision making: The dark side of tacit knowledge. *Issues in Informing Science and Information Technology*, 1, 295-301. Retrieved from <http://researchbank.rmit.edu.au/eserv/rmit:2008/n2004001478.pdf>
- Marzano, R. J., & Heflebower, T. (2012). *Teaching and assessing 21st century skills*. Bloomington, IN: Marzano Research Laboratory.

- McAuley, A., Stewart, B., Siemens, G., & Cormier, D. (2010). *The MOOC model for digital practice*. Retrieved December 13, 2012, from [http://www.elearnspace.org/Articles/MOOC\\_Final.pdf](http://www.elearnspace.org/Articles/MOOC_Final.pdf)
- McCain, T. (2005). *Teaching for tomorrow: Teaching content and problem-solving skills*. Thousand Oaks, California: Corwin Press.
- McLean, E., & Dew, S. H. (2006). Providing library instruction to distance learning students in the 21st century: Meeting the current and changing needs of a diverse community. *Journal of Library Administration*, 45(3/4), 315-337. doi:10.1300/J111v45n03\_01
- MyEducationPath.com (2013). *Responsible Computing*. Retrieved June 5, 2013, from <http://myeducationpath.com/courses/7256/Responsible+Computing.htm>
- National Forum on Information Literacy. (2005). *Beacons of the information society: The Alexandria proclamation on information literacy and lifelong learning*. Retrieved November 14, 2012, from <http://www.ifla.org/publications/beacons-of-the-information-society-the-alexandria-proclamation-on-information-literacy>
- November, A. C. (2010). *Empowering students with technology* (2nd ed.). Thousand Oaks, CA: Corwin Press.
- Sankey, M. & Nooriafshar, M. (2005). Multiple representations in multimedia and e-learning materials: An issue of literacy. In J. B. Son & S. O'Neill (Eds.), *Enhancing learning and teaching: Pedagogy, technology and language* (pp. 149-171). Flaxton, Queensland, Australia: PostPressed.
- Schwartz, M. (2013). Massive open opportunity: Supporting MOOCs in public and academic libraries. *Library Journal*, 138(9), 22-25.
- Siemens, G. (2004, December 12). Connectivism: A learning theory for the digital age. *Elearnspace, Everything Elearning*. Retrieved November 14, 2012, from <http://www.elearnspace.org/Articles/connectivism.htm>
- Sims, R. (2008). Rethinking (e)learning: A manifesto for connected generations. *Distance Education*, 29(2), 153-164. doi: 10.1080/01587910802154954
- Viggiano, R. (2004). Online tutorials as instruction for distance students. *Internet Reference Services Quarterly*, 9(1/2), 37-54.
- What campus leaders need to know about MOOCs. (2012). *EDUCAUSE Publications*. Retrieved from <http://www.educause.edu/library/resources/what-campus-leaders-need-know-about-moocs>