INTRODUCTION: INFORMATION LITERACY
The Association of College and Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education defines information literacy as the ability to recognize the need for information, and be able to locate, evaluate, and use the information effectively (2000, p. 2). Information literacy is essential in the creation of lifelong learners (Wallis, 2005, p. 221). Educators struggle continually to ensure that students are not only able to successfully navigate through the plethora of information available, but that they are able to think critically about information, and put it to use in all aspects of their lives. Information literacy skills instruction can serve as a method to help meet this goal. However, in order to provide information literacy instruction it is necessary to fully understand the concept and all it entails, including how it can be implemented and the benefits it offers to students, educators, and higher education institutions as a whole.

BACKGROUND
Initially a concept that referred to the ability to utilize information resources in the workplace (Eisenberg, Lowe & Spitzer, 2004, p. 3), the definition of information literacy has since been revised and expanded to include a variety of other ideas as the ACRL Information Literacy Competency Standards indicate. The ACRL standards go on to state that in a world where technology is ever changing, and where the number of available information resources is increasing significantly, being information literate is essential if success is to be achieved in academic studies, the workplace, and other aspects of our lives. Information can be found in many formats, including print, aural, and graphical, each format posing different challenges to individuals in evaluating and understanding the given information, but it also can be found in many places, including libraries, the media and the Internet. It is the task of educators to assist learners in determining which information is best suited for individual situations.

MAIN FOCUS: TECHNOLOGY, BEST PRACTICES, COLLABORATION, PEDAGOGY AND ASSESSMENT
Information literacy is not discipline specific, nor is it solely the realm of academe. The skills that are encompassed by information literacy, as defined above, naturally lead the learner towards self-directed learning and can be useful in both formal and informal educational situations. Given the rapid change in technology, it has become equally as important to have information technology skills. An increasing amount of information is in electronic form, requiring learners to be able to use a computer or portable
device and software to be able to access it. Information technology skills therefore support information literacy, in that they allow learners more opportunities to find needed information. As Eisenberg, Lowe & Spitzer note, information literacy is also comprised of network literacy, media literacy and visual literacy.

All students have the right to, and need for information literacy skills instruction, whether they be remote learners or campus-based. ACRL delineates this in a number of documents, including the information literacy competency standards (2000) and in the 2008 Standards for Distance Learning Library Services. In discussing information literacy, the Standards for Distance Learning Library Services state that "[t]he library must provide information literacy instruction programs to the distance learning community in accordance with the ACRL Information Literacy Competency Standards for Higher Education ... The attainment of lifelong learning skills through general bibliographic and information literacy instruction in academic libraries is a primary outcome of higher education, and as such, must be provided to all distance learning students (ACRL, 2008, para. 31).

The Association of College and Research Libraries Characteristics of programs of information literacy that illustrate best practices: A guideline (2003) identifies several key factors in the creation of excellent information literacy programs. These factors include a mission statement, goals and objectives, planning, administrative and institutional support, articulation with the curriculum, collaboration, pedagogy, staffing, outreach, and assessment/evaluation. The Characteristics recognize that an effective program must be responsive to different approaches to teaching and learning, incorporate relevant information technology and media sources, and be student based, not only in the utilization of student centered learning activities, but by building upon the current knowledge of students. Hunt and Birks (2004), in an article which expands upon several of the factors listed in the ACRL (2003) document state that "[i]nformation literacy must be an integral part of the curriculum so that skills are taught and developed in context, and students can apply the learning to real situations" (2004, para. 12).

As noted above, institutional commitment to information literacy is essential, and must be made at three levels: administration, faculty, and librarians. This commitment may be reflected in the institutional mission statement, or other organizational planning documents. Second, information literacy initiatives must be developed and implemented in a collaborative environment. Faculty and librarians must be encouraged to work together to provide information literacy instruction. Each must recognize the importance of the role played by the other partner and be responsive to the input provided based on the individuals skill set, i.e., faculty as subject matter expert, and librarian as information retrieval and database expert. Collaboration is key, in that it encourages a collegial sharing of ideas, pedagogies, and teaching methods (Hunt & Birks, 2004). It also allows for information literacy to be integrated into the curriculum seamlessly, and thereby be accessible to learners. For distance learners, and in particular those who do not have physical access to a campus library, an integrated information literacy initiative that identifies resources that are accessible remotely can be of significant importance because these learners often feel isolated from their institution and may not be aware of the wealth of information available through the institution's library.

Pedagogy is another important consideration in the creation of successful information literacy activities and programs. There must be recognition on the part of the librarian that pedagogies will vary by discipline. A guiding point might be that the utilization of context driven, meaningful topics and examples is one way to ensure that the learner's needs are met in a way that is appropriate to the
discipline they are studying in. In a collaborative environment where faculty and librarians are working together to create interactive and innovative assignments and library tutorials, it is easier to ensure that appropriate pedagogies are used. An example of an assignment utilizing library resources might be one which requires students to use a particular electronic library resource in a creative manner. Providing information literacy skills training is particularly challenging in the distance education environment, and will require creativity and innovation. The implementation of information literacy initiatives in higher education institutions has become important to accreditation bodies as well. Organizations like the Middle States Commission on Higher Education (MSCHE) consider the information literacy programs offered by institutions when they are being considered for accreditation with the commission. MSCHE includes information literacy in Standard 12, General Education, of their accreditation standards and have produced a guidelines document which can be used in establishing this type of initiative (MSCHE, 2003).

Increasingly, there has been recognition that information literacy skills instruction at post secondary institutions is only one part of the puzzle. It has been suggested that more collaboration must occur between "librarians, administrators, and teachers from a variety of educational institutions" (Wallace, 2007). This collaboration must include not only teachers from higher education institutions, but secondary and primary schools as well.

A crucial aspect of any information literacy program is assessment. Information literacy outcomes should be evaluated on two levels: the individual student, and the program as a whole. In the ACRL's Information Literacy Competency Standards, it is noted that a students basic information literacy skills should be evaluated, but that it is also crucial to "develop assessment instruments and strategies in the context of particular disciplines" (2000, p. 6).

Assessment and evaluation should be considered from the outset, that is, during the implementation process of an information literacy program. Counting the number of students served by an information literacy program within an institution does not constitute true assessment. We must be concerned that students demonstrate their ability to utilize the information literacy skills they have been taught in other areas of their lives (Cameron, 2004). Once an information literacy plan has been implemented within an institution, it is important to go back and assess the efficacy of the program to determine areas of success, and areas that need improvement. This might be undertaken as part of a curricular review (Johnson & Magusin, 2005).

A variety of information literacy and information and communication technology competency assessment plans have been created in recent years. Project Sails, a joint venture between the Association of Research Libraries and Kent State University, is a standardized program assessment tool designed to not only identify areas where improvement is needed, but also serve as a form of accountability. The ICT Literacy Assessment, a product of the Educational Testing Service (ETS), is designed to test individual student's information and communication technology competence and "emerged out of published standards set by the Association of College and Research Libraries" (Somerville, Lampert, Dabbour, Harlan, & Schader, 2007, p. 11).

FUTURE TRENDS

Higher education is changing. Increasingly, students are studying while working fulltime, and there has been an increase in distance education programs as the demand for anytime, anywhere access to education and resources continues to grow. Institutional mandates are reflecting this and institutions...
are struggling to find ways to deliver barrier free access to resources and learning opportunities. With this growth, the need to deliver information literacy services to students in different ways becomes even more prevalent.

Information technology skills are a component of information literacy, but technology as a whole has impacted the way we provide information literacy instruction. The Internet has caused a change in the nature of publishing, scholarship and education, but with the advent of Web 2.0 and its more social applications, such as RSS feeds, blogging, wikis, social tagging, Facebook, etc., even more changes are occurring in these areas. There are greater opportunities for users to create content rather than just consume it, and scholars are beginning to recognize the potential of these applications as well. As more materials are being published in a greater number of formats, the need for strong critical thinking and evaluation skills is increasingly important. As Kasman Valenza ([2007]) notes, "citizens of the future will need to creatively blend several relatively traditional skills with emerging information and communication tools [and] ... they will need to practice those skills in an information landscape that is genre-shifting, media-rich, participatory, socially connected, and brilliantly chaotic" (p. 1). She goes on to state that these citizens also need to understand the structure of traditional information and the shifts in the way knowledge is built and organized.

Libraries and librarians are experimenting with providing information literacy instruction to students via the tools of Web 2.0 (Secker & Price, 2007). Many libraries are blogging, as is demonstrated by the Website "Library Weblogs" (2007) and there are significant numbers of library RSS feeds that update patrons about news in the library. Other libraries are choosing to create podcasts of their tutorials, as a way to deliver training materials (Secker & Price, 2007). Students can either download the podcasts or subscribe to them so that they are notified when new content becomes available. Technologies like Second Life, the massively multiplayer online role playing game (Grassian & Trueman, 2007) are also being explored by libraries and librarians as a way to deliver information literacy tutorials. The benefits of exploring these new technologies include the ability to reach learners in a way that is meaningful and relevant to their lives.

CONCLUSION

Information literacy skills have the capability to transcend existing technologies and are transferable from traditional print sources to the CD-ROM databases of the 1990's to this second incarnation of the Web and beyond. Librarians and educators are working to ensure that students become lifelong learners by teaching them these crucial skills. Ultimately, being able to navigate information resources, no matter what form they exist in, and the ability to evaluate the information found in these resources are skills that will serve citizens of the present and the future well.

REFERENCES


- Cameron, L. (2004). Assessing information literacy. In Integrating information literacy into the higher

**KEY TERMS**

**Critical Reading:**
The ability to evaluate closely the meaning of a text and understand the context in which it was written.

**Critical Thinking:**
The ability to think about a topic from a variety of angles in order to form an opinion.

**Information Literacy:**
The ability to find, use and evaluate information in an ethical fashion.

**ICT Technology Competency:**
The ability to utilize electronic reference sources to find, use and evaluate information for a specific
Lifelong Learning:
Continuing to learn throughout life through the development of existing skills, whether they have been learned in school or not.

Media Literacy:
The ability to evaluate information from the media.

Network Literacy:
The ability to negotiate networked information.

Visual Literacy:
The ability to use and evaluate information in a variety of formats.

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