

**INFORMATION LITERACY AT CECIL COLLEGE:  
ESTABLISHING THE CONTEXT**

by

Michael A. Gutiérrez

An executive position paper submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Education in Educational Leadership

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Approved: \_\_\_\_\_  
Ralph P. Ferretti, Ph.D.  
Director of the School of Education

Approved: \_\_\_\_\_  
Lynn Okagaki, Ph.D.  
Dean of the College of Education and Human Development

Approved: \_\_\_\_\_  
James G. Richards, Ph.D.  
Vice Provost for Graduate and Professional Education

I certify that I have read this executive position paper and that in my opinion it meets the academic and professional standard required by the University as an executive position paper for the degree of Doctor of Education.

Signed:

\_\_\_\_\_  
Fred T. Hofstetter, Ph.D.  
Professor in charge of executive position paper

I certify that I have read this executive position paper and that in my opinion it meets the academic and professional standard required by the University as an executive position paper for the degree of Doctor of Education.

Signed:

\_\_\_\_\_  
Robert L. Hampel, Ph.D.  
Member of executive position paper committee

I certify that I have read this executive position paper and that in my opinion it meets the academic and professional standard required by the University as an executive position paper for the degree of Doctor of Education.

Signed:

\_\_\_\_\_  
Chrystalla Mouza, Ed.D.  
Member of executive position paper committee

I certify that I have read this executive position paper and that in my opinion it meets the academic and professional standard required by the University as an executive position paper for the degree of Doctor of Education.

Signed:

\_\_\_\_\_  
Lorraine Martorana, M.L.S.  
Member of executive position paper committee

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## **ABSTRACT**

Information literacy is an essential skill set individuals need to locate, retrieve, evaluate, and effectively use information in an effort to assemble and create new knowledge. Information literacy is recognized by accreditation agencies, professional organizations, and academic institutions as a vital part of higher education. Information literacy programs, led primarily by librarians, have developed at institutes of higher education to instruct students on becoming information literate. Community colleges have increased their efforts to enhance information literacy instruction for their students with the goal of creating lifelong learners who will use their skills to solve problems and make informed decisions. In the end, information literacy is about developing and producing critically thinking individuals.

Unlike similar community colleges in surrounding counties and states, Cecil College continues to lack an information literacy program to instruct its rapidly growing student population in the knowledge and skills needed to become information literate. This Executive Position Paper investigates the perceptions teaching faculty have regarding information literacy, as well as which skills are being taught in the classroom by teaching faculty and which are being taught by librarians. A review of scholarly literature examines the information-seeking behavior of college students at community colleges and the collaborative efforts between teaching faculty and librarians, and explores several critiques that have surfaced regarding information literacy

Both quantitative and qualitative data were collected utilizing a survey instrument to examine teaching faculty's knowledge of information literacy, the methods they use to provide information literacy instruction, collaborative efforts they have had with librarians and other faculty, and their observations of students' information literacy abilities. To gather additional information, face-to-face interviews were conducted with a number of teaching faculty, librarians and administrators.

Based on the data collected, six recommendations for enhancing the current information literacy program at Cecil College were developed and presented. They include the following: developing a localized definition of information literacy, formulating appropriate outcomes that tie into the institutional mission, increasing library instruction and intervention throughout the college curriculum, cultivating faculty-librarian collaborative relationships, forming learning communities, and adopting appropriate assessment tools to assess the students' information literacy skills and to evaluate their success.

## **Chapter 1**

### **INFORMATION LITERACY AND THE COMMUNITY COLLEGE**

#### **Introduction**

Information literacy (IL) is defined by the American Library Association (ALA) as “a set of abilities requiring individuals to recognize when information is needed and to have the ability to locate, evaluate, and use effectively the needed information” (ALA, 1989). It is recognized by accreditation agencies, professional organizations, and state departments of education as a necessary part of higher education. The goals of information literacy are to produce lifelong learners who possess the “abilities to locate, organize, store, retrieve, evaluate, synthesize, and annotate information from print, electronic, and other sources in preparation for solving problems and making informed decisions” (Association of College and Research Libraries, 2000). In the end, information literacy is about developing and producing individuals who can think critically.

The movement to produce information literate students has been around for more than a decade. The push to educate students with IL skills has increased as the level and sophistication of technology has risen. Much of the literature on IL has focused on four-year institutions and the programs or initiatives to promote IL among their students. The small body of literature specific to community colleges and IL focuses on the information-seeking behavior of community college students or implementing IL programs into the community college curriculum.

The primary mission of a community college is focused on teaching and learning. Community colleges serve five curricular purposes: academic transfer preparation, vocational-technical education, developmental education, continuing education, and community service (Warren, 2006). The student body of most community colleges is exceptionally varied and diverse in experience, learning styles, and previous education. When it comes to IL instruction, the open-door admissions policy of community colleges puts a burden on librarians who must be knowledgeable and considerate of the wide range of students' abilities, ages, experiences, goals, programs, and time constraints (Branch & Gilchrist, 1996).

Community college librarians and teaching faculty use multiple instructional styles to teach students. IL is being incorporated into library instruction sessions and, in some instances, into course curricula as well as the mission of community colleges. While the need to become information literate is vital, community college students are not developing the necessary knowledge and skills.

### **Purpose of Study**

Cecil College has an active instruction program for teaching IL skills to its students, and promotes IL to its teaching faculty. However, Cecil College does not have a formal IL plan. Although Cecil College has recognized that IL plays an essential role in many learning outcomes, it is not considered a core learning outcome of its General Education Program (Cecil College, 2013). In its Self-Study Report (Cecil College, 2010a) for the Middle States Commission on Higher Education (MSCHE), the College acknowledged it was imperative that all faculty, staff, and students be well informed about academic integrity, including plagiarism and appropriate Internet etiquette. It further concluded that most courses and programs require specialized

program-specific IL skills, including advanced research and evaluative skills. In fact, the College's own recommendations specified the formal integration of IL into more courses and programs. The purpose of this study is to enhance the current IL program by identifying relevant literature, analyzing data collected from teaching faculty, and recommending available resources the library and librarians could utilize for IL instruction.

The Self-Study Report (Cecil College, 2010a) placed librarians at the forefront of improving IL programming across the curriculum and identified them to develop learning modules for IL that could be incorporated into multiple courses so that students would be able to repeatedly practice skills pertaining to IL. These modules would also benefit online students who may not have had formal IL instruction in a course or with a librarian. As noted in its Self-Study Report (Cecil College, 2010a), Cecil College has experienced a significant growth in the number of online or hybrid courses it offers, increasing from 57 courses in FY 2005 to 201 courses in FY 2009. The College is expected to see continued growth in online courses, and any learning modules pertaining to IL could be incorporated into the Blackboard™ course management system.

In addition, Cecil College's Strategic Enrollment Management Plan 2013-1015 (Cecil College, 2013) has developed targeted "Actions" and "Outcomes" that pertain to the library services and librarians. Under "retention strategies," the library is responsible for developing financial literacy programs that would be incorporated into student life and academic programs. There would be clear elements of basic and advanced IL skills infused in any financial literacy program because the two literacies complement one another.

In addition, librarians are responsible for creating more online tutorials for students related to academic success strategies (Cecil College, 2013). These tutorials incorporate some IL skills which can contribute to students' learning. Additionally, under "infrastructure and operations," library services are encouraged to utilize mobile technology applications which students, faculty, and staff can use for research (Cecil College, 2013). This action may necessitate the need for library staff to develop new teaching methods to instruct users about these mobile applications and may require more collaboration among teaching faculty and librarians.

Finally, the Code of Maryland Regulations (COMAR) has recognized IL as a general education requirement for all public education institutions. An in-state institution shall provide to its students a general education designed to give students the skills and knowledge necessary to demonstrate IL (COMAR 13B.02.02.16). Furthermore, the general education programs at public institutions may incorporate knowledge and skills involving the use of quantitative data, effective writing, information retrieval, and information literacy (COMAR 13B.06.01.03). By enhancing the current IL instruction program, Cecil College will further align itself with Maryland regulations designed for higher education institutions.

This improvement plan is divided into four chapters. Chapter one describes the need for this project, background information about Cecil College, a brief history of community colleges in the United States, and key questions that will guide this improvement plan. Chapter two examines the relevant literature regarding IL and the information-seeking behavior of community college students. Additionally,

collaborative efforts between librarians and teaching faculty will be examined. The concept of IL and several different models will also be discussed. Chapter three discusses the methodology used to conduct a survey of the faculty and the resulting data collected. Additionally, excerpts from follow-up interviews with several teaching faculty will be described. Chapter four provides recommendations, strategies, and activities needed to enhance the current IL program at Cecil College.

### **Community Colleges**

Community colleges are a unique American creation that emerged in the early part of the twentieth century in the form of junior colleges. By the 1960s, the term “junior college” was replaced by the more inclusive term “community colleges” (Cohen, 1994). Community colleges are two-year institutions offering associate degrees to their target audience, which is the local community. These institutions are connected directly to the local population and form local partnerships (Warren, 2006).

According to Warren (2006), community colleges serve five educational purposes: academic transfer preparation, vocational-technical education, developmental education, continuing education, and community service. These multiple missions produce a diverse and dynamic environment for faculty, staff, and students. However, community colleges continue to be plagued by three issues even as enrollment rates continue to climb. These issues include conflicts and divisiveness due to multiple missions, lack of political and community support to lobby for increased funding, and low retention and transfer rates (Warren, 2006).

Enrollment at community colleges has risen steadily over the past fifty years. According to the National Center for Education Statistics (2011), the number of students

enrolled in two-year institutions was 850,361 in 1963, and increased to 7,680,875 in 2010. Enrollment at community colleges in Maryland is expected to increase over the next ten years. The MHEC (2013b) expects total enrollments at Maryland's sixteen community colleges by 2022 to have increased by 19%, with the number of full-time students expected to grow by 31%, and part-time enrollments projected to increase by 12%. The MHEC (2013b) report also projects enrollment at Cecil College for the same period to show a significant increase of 20%, with full-time students projected to increase by 37%, and part-time enrollment up by 8%.

Students choose community colleges over traditional four-year colleges for a variety of reasons. These may include full-time employment, a desire to return to school after a long absence, convenient and flexible classes, or close proximity to home (Groce, 2008). In addition, students balance competing and often conflicting personal, academic, and financial priorities and responsibilities. The open-door admission policy challenges teaching faculty and librarians to develop creative strategies to engage students' diverse learning styles, technical abilities, and individual experiences (Branch & Gilchrist, 1996; Groce, 2008). In some cases, librarians and teaching faculty share teaching strategies and curriculum to form learning communities to engage students with educational opportunities (Warren, 2006).

Library bibliographic instruction sessions, or library research skills, are a regular part of the community college experience (Branch & Gilchrist, 1996; England & Pasco, 2005; Fry, 2009; Grafstein, 2007; Johnson, 2009; Weiler, 2005; Warren, 2006). In the past decade, there has been a significant importance placed on library instruction and IL. Today, librarians are contributing to the institutional curriculum by offering information retrieval classes, developing strategies to address the methods

students use to access information, and assessing their impact and effect on student learning and success (Groce, 2008). Branch and Gilchrist (1996) believe integrating IL into the community colleges' mission increases the quality of education and contributes to students' success.

### **Cecil College: The Setting**

Cecil College is a public two-year, open-admission institution located in Cecil County, Maryland. Cecil Community College was founded in 1968 to meet the postsecondary and continuing education needs of county residents. In 2007, the institution, with approval from the Maryland Higher Education Commission, changed its name to Cecil College. The college is comprised of the North East main campus and two additional centers located in Elkton and Perryville, Maryland. According to the Maryland Higher Education Commission (MHEC) (2013a), fall 2011 enrollment at Cecil College totaled 2,606 students, and 1,077 were enrolled full-time and 1,529 were enrolled part-time. The college employed 47 full-time and 168 part-time adjunct faculty who provided instruction for more than 100 associate degrees and certificate programs (MHEC, 2013a). Of the sixteen community colleges in Maryland, Cecil College continues to be one of the fastest growing educational institutions (MHEC, 2013b).

In 2010, Cecil College reported the number of candidates for graduation increased by 13.4% between 2007 and 2009 (Cecil College, 2010a). The MHEC published the graduation rates for students two, three, and four years after they matriculated into Cecil College (MHEC, 2013c). The study reported 308 first-time, full-time students had matriculated into Cecil College in the fall of 2008. After two years, 1.4% had graduated; 10.4% had graduated after three years, and 10.4% had also

graduated after four years (MHEC, 2013c). The graduation rates for Cecil College were mixed when compared with statewide percentages for the same 2008 cohorts (See Table 1.1).

Table 1.1 Graduation Rates for Cecil College: 2006-2008

	<b>Two Years</b>		<b>Three Years</b>		<b>Four Years</b>	
<b>Cohort</b>	Statewide	Cecil	Statewide	Cecil	Statewide	Cecil
2006	2.2%	0.0%	6.0%	3.4%	8.4%	5.1%
2007	2.3%	0.0%	6.1%	3.9%	9.2%	9.3%
2008	2.3%	1.0%	6.4%	6.2%	9.4%	10.4%

*Note:* Adapted from “Retention, graduation, and transfer rates at Maryland community colleges” by MHEC, 2013, p. 33.

However, retention rates are another measure of student success and are related to student completion (See Table 1.2). Cecil College has developed a comprehensive tracking system that tracks student attendance and performance at three intervention points throughout the semester. In addition, Cecil College has also hired additional and increased fiscal resources for student life activities, co-curricular activities, and career services. Additionally, the operating hours have been extended in the writing, reading, and computer labs, tutoring services have expanded, and online library resources have increased. As a result, there have been modest increases in retention rates at Cecil College (Cecil College, 2010a; Cecil College, 2013).

Table 1.2 Retention Rates for Cecil College: 2006-2008

Cohort	Two Years		Three Years		Four Years	
	Statewide	Cecil	Statewide	Cecil	Statewide	Cecil
2006	36.2%	33.6%	20.7%	17.9%	12.4%	8.9%
2007	38.6%	35.1%	21.8%	22.4%	12.9%	11.6%
2008	40.1%	37.0%	22.1%	19.5%	13.0%	10.4%

*Note:* Adapted from “Retention, graduation, and transfer rates at Maryland community colleges” by MHEC, 2013, p. 33.

The Veterans Memorial Library serves Cecil College and offers programs, resources, and services to faculty, staff, students, and the community (Veterans Memorial Library, n.d.). The library provides access to print materials, reference sources, subject-specific databases, electronic books and journals, and special collections. The library is staffed by one administrator, one professional librarian, two library staff, and three adjunct librarians. In addition, the Librarian for Instruction, Information Technology, and Systems Administration is responsible for developing, promoting, and conducting information literacy instruction for Cecil College (Veterans Memorial Library, n.d.).

### **Problem Statement**

Currently, Cecil College does not have a formal IL program. The Veterans Memorial Library is mentioned in the Cecil College catalog as providing an essential part of the lifelong learning process (Cecil College, 2011). As the literature indicated, libraries and librarians are taking the lead in developing IL programs and promoting them to college administrators, faculty, and students. IL usually gains attention from college administrators when regional accrediting agencies like the MSCHE mention it as part of the accreditation process. Cecil College will undergo a periodic review in 2015 and a full self-study review in 2019-2020 (MSCHE, 2012).

Developing a full IL program at a community college needs the support of the teaching faculty. While many students are using the Internet and library resources to locate information, the students are not evaluating the information they locate, continue to have difficulty finding reliable sources, or fail to establish suitable criteria for evaluating credible sources (Karas, 2007). For Cecil College, data was gathered from teaching faculty to determine their knowledge of IL, to gauge how they view its importance, and to ascertain their observations of students' IL skills.

Librarians cannot develop and assess IL programs based solely on established standards without consulting with faculty, or vital information will be lost (Gullikson, 2006). Any resulting program would only engage students at a superficial level, whereas recognizing and incorporating faculty perceptions of IL would lead to different pedagogical approaches in the design of a program. The input from Cecil College teaching faculty, as well as evidence and facts compiled from a literature review, have provided the appropriate guidance to enhance the current IL instruction program and possibly establish a formal IL plan. Furthermore, the data compiled may indicate more appropriate instruction techniques and models needed to teach IL to the community college students.

To summarize, Cecil College has an active IL instruction program, but does not have an IL plan. Some of the components which will be considered to enhance the current program include limited staffing and resources, data collected from faculty, and a review of the current literature.

### **Key Questions**

The goal of this executive position paper is to strengthen the current IL instruction program at Cecil College. The following questions provided the central focus for this improvement plan and guided the examination:

1. How do Cecil College teaching faculty understand IL?
2. In what ways are the teaching faculty incorporating IL knowledge and skills into their courses?
3. In what ways, if any, are the teaching faculty collaborating with librarians to incorporate IL knowledge and skills into their courses?
4. What collaborative efforts between teaching faculty and librarians are documented in the scholarly literature and which collaborative efforts have been successful?

### **Summary**

In the past decade, a significant importance has been placed on library instruction and IL at community colleges across the country. Librarians responded by teaching IL skills, developing strategies to improve the methods students use to retrieve information, assessing their impact on student learning, and developing IL programs. Currently, Cecil College does not have an IL program. But guided by four key questions, this study will, in the end, provide recommendations, strategies, and activities needed to strengthen the current IL program at Cecil College. In the next chapter, the scholarly literature will be reviewed relating to IL, the information-seeking behavior of community college students, and faculty-librarian collaboration.

## **Chapter 2**

### **KEY ASPECTS OF INFORMATION LITERACY**

Information literacy is vital for producing lifelong learners and developing critical thinking skills among individuals. It is recognized as an essential skill set that must be incorporated into the curriculum of higher education institutes in order to graduate students who are information literate. A review of the literature in this chapter examines various definitions, models, and critiques of IL. In addition, this review also investigates students' information-seeking behaviors, and explores collaborative efforts between faculty and librarians to incorporate IL into the curriculum.

#### **A Scholarly Examination**

According to Johnston and Webber (2003), IL did not develop suddenly at the end of the 1980s. Librarians have played an important role in pushing the IL initiative in the United States. The most commonly cited IL statement was formulated by the American Library Association (ALA) Presidential Committee on IL in 1989:

To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. Producing such a citizenry will require that schools and colleges appreciate and integrate the concept of information literacy into their learning programs and that they play a leadership role in equipping individuals and institutions to take advantage of the opportunities inherent within the information society. Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use information in

such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand. (para. 3)

In 2000, the Association of College and Research Libraries (ACRL) further expanded on ALA's statement by synthesizing and formulizing key desirable behaviors that information literate students should exhibit. These include the abilities to: (a) determine the nature and extent of the information needed; (b) access needed information effectively and efficiently; (c) evaluate information and its sources critically and incorporate selected information into his/her knowledge base and value system; (d) use information effectively to accomplish a specific purpose; and (e) understand the economic, legal, and social issues surrounding the use of information and access and use information ethically and legally (ACRL, 2000, para. 2).

These ACRL standards place the student at the center of the IL process, as is evidenced by a long series of behavioral indicators and outcomes, which are influenced by the information science discipline and traditional library bibliographic instruction. The result is a "tick-the-box" approach, reducing a complex set of skills and knowledge to small, discrete units (Gullikson, 2006; Owusu-Ansah, 2005).

Both the ALA's and ACRL's statements and standards have been used the United States. In Australia, the development of an information literate person is introduced in primary school, rather than focusing only on students attending institutes of higher education. The Council of Australian University Libraries adopted the ACRL standards, but according to Johnston and Webber (2003), they added two additional standards: information literate persons recognize lifelong learning to be a continual process and they realize that participative citizenship requires everyone to be information literate. Furthermore, the information literate individual must expand, reframe, or create new knowledge by integrating prior knowledge and new

understandings as an individual or as a member of a group. In the United Kingdom, the Society of College, National, and University Libraries provides a progression model from basic to more sophisticated skills, which places much more emphasis on technology rather than library bibliographic instruction (Johnston & Webber, 2003).

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) closely follows the ALA and ACRL by defining IL as a set of skills which adults need to be effective in all aspects of their lives and integrated alongside problem-solving and communication skills (Catts & Lau, 2008). UNESCO states that storing and retrieving information are additional competencies people must possess. In addition, IL must be considered in a broader context which includes education, civil society, health, security, and work to enable people to move from dependence on knowledge brokers to become knowledge builders (Catt & Lau, 2008).

Information literacy is viewed in broad terms and seems impossible to identify specifically without excluding all other literacies, such as computer, media, visual, network, and library literacy or the role of pedagogy in creating authentic learning environments, influenced by constructivist learning (Breivik, 2005). Information literacy is best envisioned as a broad concept that encompasses critical thinking skills that provide humans, who are processors, managers, and users of information, with the ability to make critical decisions (Breivik, 2005; Bruce, 1999; Eisenberg, 2008). In the end, IL is exemplified by the ability to discover, retrieve, and use information.

### **Defining Information Literacy**

In 1974, Paul Zurkowski introduced the term “information literacy” to describe individuals who were trained and capable of using various tools or applications to find and use information to solve their work problems (Kapitzke, 2003). In 1989, the ALA

issued their definition of an information literate individual as possessing the skills to find, evaluate, and use information effectively to solve a particular problem or make a decision (Mackey & Jacobson, 2004). The definition provided both a conceptual and pragmatic approach to IL, and it also broadly described the goals of lifelong learning.

In 2000, the ACRL published *Information Literacy Competency Standards for Higher Education*, which articulated performance indicators and outcomes for assessing when students have successfully become information literate. The ACRL's standards focused on students' outcomes based on five information skill standards which included 22 performance indicators and 87 outcome measurements (see Appendix A). Among ACRL standards are students' ability to locate, evaluate, organize, and use information for specific needs, as well as the capability to think critically and communicate effectively. The ACRL's *Competency Standards* basically reiterate the ALA's initial definition, while including a measurable method to determine what constitutes an information literate student.

Many definitions have developed since 1989, but they all derive from the ALA's initial definition. Several definitions expand IL beyond library bibliographic instruction to incorporate skill-based learning, problem-based learning, and critical-based learning (Breivik, 2005). Information literacy is also considered a subset of critical thinking in some definitions. The initial definition of IL has evolved over time, but perhaps, as Owusu-Ansah (2005) states, IL is too huge and diverse to be confined to one single definition.

### **Six Models of Information Literacy**

Six major IL models have been designed and constructed based on the ALA's definition of IL. These models highlight core knowledge and skills students or

individuals must possess to be considered information literate. In addition, several of these paradigms build on previous standards and benchmarks and also include specifics pertaining to technology, information management, and critical thinking skills. The following six models are the most commonly used in higher education:

**ACRL Information Literacy Model.** The ACRL model (Figure 2.1) is divided into five major standards: (a) know the information needed, (b) access the needed information, (c) evaluate the gathered information, (d) use the information effectively to accomplish a purpose, and (e) understand the ethical/legal uses of information (ACRL, 2000). These are further broken down into 22 performance indicators and 87 measureable outcomes, which include the ability to articulate an information need, develop a research question, identify key concepts, and synthesize retrieved information with original thoughts to form new information. The model also distinguishes critical thinking and reasoning within its framework, but information technology is not interwoven within its indicators or outcomes. The model continues to be the foundation for many IL programs in institutes of higher education in the United States and Canada because it appears to be more appropriate for curriculum integration.

ACRL Information Literacy Competency Standards for Higher Education
<b>The information literate student determines the nature and extent of the information needed.</b>
<b>The information literate student accesses needed information effectively and efficiently.</b>
<b>The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.</b>
<b>The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.</b>
<b>The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.</b>

Figure 2.1 ACRL Information Literacy Model.

**Seven Faces of Information Literacy Model.** The Seven Faces of Information Literacy model (see Figure 2.2) was developed from work published by Bruce (1999). She concluded that information technology, sources, process, information management, knowledge construction, knowledge extension, and wisdom encompass the “faces” of IL. The model embeds the information process in a technological context, inseparable from information itself, and applies cognitive states, such as knowledge, understanding, and wisdom to describe IL circumstances. Bruce’s (1999) model emphasizes the individual perspective when it comes to finding and understanding sources, defining the structure and scope of an information problem, and synthesizing as well as creating knowledge. The model is rooted in the emergence of the information society, which Bruce (1999) characterized by the rapid growth in

the availability of information and the constant changes in technology which are used to disseminate access and manage information (Grafstein, 2007).

Seven Faces of Information Literacy
<b>Information Technology Experience</b>
<b>Information Sources Experience</b>
<b>Information Process Experience</b>
<b>Information Control Experience</b>
<b>Knowledge Construction Experience</b>
<b>Knowledge Extension Experience</b>
<b>Wisdom Experience</b>

Figure 2.2 Seven Faces of Information Literacy Model.

**Seven Pillars of Information Literacy Model.** The Seven Pillars model was developed in the late 1990s in the United Kingdom by the Society of College, National, and University Libraries. The model (see Figure 2.3) employs study skills, with students utilizing information acquisition tools, and conceptual skills, with students being aware how information is produced and used. The model identifies core skills such as recognizing information needs, identifying problem solving strategies, and evaluating information, but also includes information technology as a core component. The seven pillars model also ranks five levels of expertise ranging from novice to expert. With basic library skills and information technology skills as

the foundation for the seven pillars, these distinct skill sets form a theoretical framework which leads to information literate individuals.

Seven Pillars of Information Literacy
<b>The ability to recognize an information need.</b>
<b>The ability to distinguish ways of addressing an information gap.</b>
<b>The ability to construct strategies for locating information.</b>
<b>The ability to locate and access information.</b>
<b>The ability to compare and evaluate information obtained from different sources.</b>
<b>The ability to organize, apply, and communicate information to others in appropriate ways.</b>
<b>The ability to synthesize existing information and create new knowledge.</b>

Figure 2.3 Seven Pillars of Information Literacy Model

**UNESCO Information Literacy Model.** The UNESCO model has five stages for a person to become information literate. The model (see Figure 2.4) is comparable to the ACRL model in both skills and process, but includes information management as a key characteristic. The emphasis on managing information, such as storing, reusing, recording, preserving, and disposing, is not emphasized in other models, and is a reflection of UNESCO's mission. The model positions IL as distinctly separate from computer literacy or media literacy.

UNESCO Information Literacy Model
<b>Recognize information needs</b>
<b>Locate and evaluate the quality of information</b>
<b>Store and retrieve information</b>
<b>Make effective and ethical use of information</b>
<b>Apply information to create and communicate knowledge</b>

Figure 2.4 UNESCO Information Literacy Model.

**Big6™ Model.** The Big6™ model centers on the information problem-solving process and the skills needed to discover a solution. The model (see Figure 2.5), developed by Michael Eisenberg and Robert Berkowitz, unifies information and technical skills to assist students in comprehending the information problem-solving process so students connect the process with their lives (Eisenberg, 2008). The model is composed of six broad areas including task definition, information-seeking strategies, location and access, use of information, synthesis, and evaluation. The Big6™ model does not, however, delve into legal/ethical issues. This model was designed specifically for K-12 students and has been implemented in primary and secondary education curriculums world-wide, but it has also been adopted by a number of higher education institutions. Eisenberg and Berkowitz developed the model in response to information overload, which characterized the new information environment (Eisenberg, 2008). It is based on teaching and integrating information

searching skills as well as technology use skills, primarily as a method for enhancing information technology (Grafstein, 2007).

Big6™ Model
<b>Task Definition</b>
<b>Information Seeking Strategies</b>
<b>Location and Access</b>
<b>Use of Information</b>
<b>Synthesis</b>
<b>Evaluation</b>

Figure 2.5 Big6™Model.

**Information Fluency Model.** The Information Fluency model (see Figure 2.6), which incorporates relevant technology, critical thinking skills, and the ACRL standards was developed by the Associated Colleges of the South to characterize individuals who function with relative ease in a world of increasing information and changing technologies. By using appropriate technologies, critical thinking, and proper information-seeking behavior, individuals will become information fluent and be able to collect necessary information, employ critical thinking skills, synthesize information, and present those conclusions using a variety of research and multimedia tools. The aim of the model is to bring librarians, teaching faculty, and information

technology (IT) personnel together to collaborate and develop initiatives to address the impact of information and continual technological changes on higher education (Sharkey, 2006).

<b>Information Fluency Model</b>
<b>Recognition of a need for information</b>
<b>Formulation of a plan to obtain information</b>
<b>Discovery, identification, and retrieval of information</b>
<b>Evaluation and selection of information</b>
<b>Synthesis of knowledge or creation of new knowledge</b>
<b>Presentation or publication of that synthesis for an audience</b>

Figure 2.6 Information Fluency Model

**Similarities and Difference among IL Models.** Most of the models examined have similar characteristics in that they follow a linear process and focus on the skills needed to become information literate. The only exception is the Seven Faces model which focuses on broad concepts without determining the relationship between the faceted structures it utilizes. The ACRL model is based largely on skill acquisition and concept awareness which forms the basis of the model's performance indicators. The Seven Pillars, UNESCO, Information Fluency, and Big6™ models incorporated

many of the same skills and concepts found in the ACRL model, but not to the same degree and depth. However, the similarities ended with regards to technology and ethical issues related to IL.

The ACRL model has recognized that IL has been influenced by recent technological developments, and that fluency with information technology skills merely assists and supports IL. The most important IL skill in the ACRL model is critical thinking. The UNESCO model has incorporated technology through the use of information management skills which place emphasis on storing, recording, preserving, and disposing of information.

According to the Seven Faces model, the transition to electronic formats has had a significant impact on how individuals use information and, more importantly, how information is sought and retrieved. Similarly, the Big6™ model can be characterized as a process to the information environment by enhancing IT skills in an existing IL context. The Information Fluency model merged technology with critical thinking and IL concepts to form a collaborative paradigm between teaching faculty, librarians, and IT personnel.

Finally, the Seven Pillars model is designed to include IT skills as a core part of IL. Basic library/research skills and IT skills intersect to form the foundation of this model, which follows an individual's progression from novice to expert. As in the Seven Faces and Information Fluency a models, the Seven Pillars model has also emphasized the significant impact technology has had on IL. However, unlike the

ACRL model, the Seven Pillars and other models have scarcely made reference to ethical or legal issues regarding IL.

Finally, these models share additional characteristics that have kept them from being incorporated into the curriculum and have continued to keep IL regarded as a separate subject. According to Markless and Streatfield (2012), most models: (a) are not linked to the learning process as it is currently understood; (b) ignore or underplay reflection, iteration, trial and error, and different learning styles and strategies; (c) ignore peer interaction and the collaborative nature of much enquiry; and (d) use a language that does not resonate with academic staff and students nor reflect the language of the disciplines. These claims were supported by the literature regarding the information-seeking behavior of college students and some articles relating to faculty perceptions of IL.

### **Critiques of Information Literacy**

There is debate over what constitutes information literacy. Is it just bibliographic instruction, or is it a more theoretical concept used to describe students' research process and behavior? Information literacy advocates, including librarians, higher education institutions, and accrediting agencies prefer the latter, and view IL as the foundation for lifelong learning. Owusu-Ansah (2005) believed that debates over the definition of IL distract from IL education. His well-documented research indicates there is no real deviation from the original definition produced by ALA in 1989. The ALA definition describes IL as a set of abilities to identify an information need and then locate, evaluate, and use the retrieved information. The ALA's definition is utilized as a tool for teaching lifelong learning as well as a skill set for

social empowerment (Owusu-Ansah, 2005). Regardless, Marcum (2002) argued that different definitions have emerged as a result of increased skills and changes in learners' mindsets. Marcum (2002) contends that most education systems and libraries describe IL skills such as locating, accessing, evaluating, and using information in terms of printed sources and not incorporating emerging technologies in terms of gathering content and information transfer. Nevertheless, scholars, librarians, and academics feel the definition debate is appropriate and beneficial given that IL continues to evolve.

Some argue only librarians view IL as a crucial skill set that all individuals, in particular students, need, and it requires the intervention of librarians. To rectify a presumed deficiency among information seekers, librarians recognized an opportunity to participate in the education process (Owusu-Ansah, 2005). Kapitzke (2003) contended the term "information literacy" was created when library science advocates failed to have bibliographic instruction/library skills programming included as part of the core curriculum in higher education.

Marcum (2002) also believed IL skills which were currently being taught lack realistic objectives and will have a short "shelf life" because competency in the workplace is required, not just literacy. Marcum further contended that IL programs should strive to produce graduates who function in the workplace and are not simply familiar with tools, resources, research methods, and critical thinking skills geared toward academics. Kapitzke (2003) supported Marcum's argument by stating the IL framework is currently inadequate because it neglects the implication of new technologies.

Owusu-Ansah (2005) suggested librarians have marginalized themselves by concentrating on ACRL's Standard Four which assigns subject faculty the responsibility to teach students the effective use of information to accomplish a purpose. For many, IL instruction is overly focused on basic skills as opposed to fully encompassing visual, interactive, and cultural spheres currently emerging (Marcum, 2002).

### **Accrediting Agencies and Information Literacy**

Accreditation agency documents emphasize goal-based assessment models using mission-driven standards to define educational quality (Gratch-Lindauer, 2002). Accrediting agencies detail expected goals and objectives which academic programs and units should have in place to support the home institution. These are then used to evaluate the success of programs and units in achieving stated goals, and then to provide recommendations for improvements or modifications (Gratch-Lindauer, 2002).

The MSCHE accrediting agency made reference to IL in Standard 11 (Educational Offerings) and Standard 12 (General Education), and enumerated skills needed for students to exhibit competency (MSCHE, 2006). Gratch-Lindauer (2002) feels that the MSCHE's Standards have strengthened librarians' teaching role by connecting their expertise with information resources and research skills to students' learning experience. In addition, libraries and librarians contributed to institutional goals by developing learning objectives regarding the acquisition of IL skills. By assessing students' progress and achievement, librarians were able to demonstrate how the outcomes are used to improve student learning, even if the skills are not easily

acquired and cannot be applied in more than one context (Gratch-Lindauer, 2002; Mackey & Jacobson, 2004).

In addition, the MSCHE asserted that collaboration among librarians, faculty, and administrators was a “fundamental element” by establishing a framework with guidelines that fosters and encourages collaboration within an integrated IL program (Saunders, 2007). Supplemental documentation issued by MSCHE warned institutions about relying on single library instruction sessions for IL delivery which, according to Saunders (2007), implies that a deeper level of collaboration is expected. Accrediting agencies assert that IL should be a shared teaching responsibility, but librarians still have difficulty establishing collaborative relationships with teaching faculty (Saunders, 2007). Nevertheless, IL is integrated into a number of accrediting agencies’ statements regarding General Education outcomes, or aligned with related analytical skills, such as critical thinking.

### **Information-Seeking Behavior of College Students**

Information-seeking behavior has been studied since the 1950s, but researchers have focused on students’ behavior during the past twenty years (Weiler, 2005). Information-seeking behavior simply refers to the process we use to search for information and utilize the information once gathered.

According to Seamans (2002), librarians know very little about how first-year students obtain information, let alone if they use it effectively, making it difficult to design library instructional programs. This has an impact on how academic libraries provide services to college students. She also observed that student conducted a vast amount of research using the Internet, a method encouraged by high school teachers. Some students evaluate resources using relatively sophisticated methods, but rely

predominately on peers, who they view as experts, to validate the research information they have gathered. Seamans (2002) concluded that students approached research acquisition with a predetermined perspective, seeking supportive evidence. They rarely searched for opposing viewpoints or sought to explore a topic more broadly. However, she was unable to determine if this was a result of the assignments given or based on the research process they developed during high school. In addition, students rarely engaged in developing effective search sequences with Boolean operators to string keywords together. Many first-year students were also not concerned about using a critical approach when evaluating information retrieved for research.

Johnston and Webber (2003) feel an individual will experience changes throughout their lives which affect the type of information they need as well as the methods employed to access, evaluate, understand, and use information. In addition, economic, social, and cultural changes affect how students retrieve information and students' personal goals, as depicted in Figure 2.7.

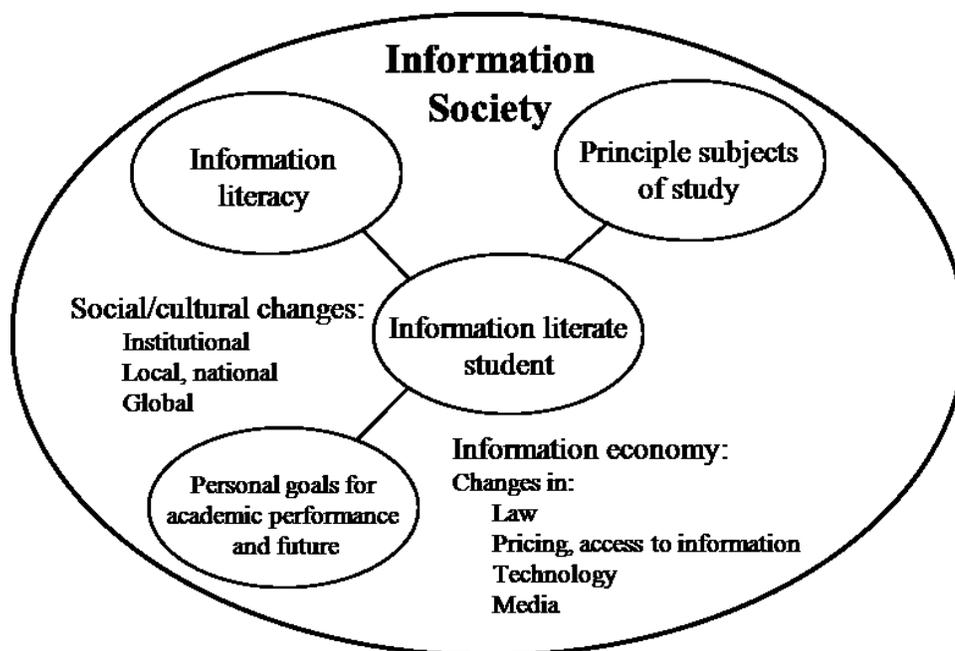


Figure 2.7 Information Literate Student in the Changing Information Society. Adapted from “Information literacy in higher education: A review and case study,” by B. Johnston and S. Webber, 2003, *Studies in Higher Education*, 28(3), p. 348. Copyright 2003 by Taylor & Francis Group.

According to Casper and Bernhisel (2006), students primarily turned to the Web for research and did not go farther. They seldom evaluated the credibility of Web sources and were unable to distinguish between scholarly and popular journals. In addition, they were unaware of when to appropriately cite their sources or acknowledge they need further guidance with their information gathering. Students also reported developing their research skills during their high school years or were self-taught (Casper & Bernhisel, 2006).

Head and Eisenberg (2010) found that many college students had difficulty starting the research process, especially defining a research inquiry. Over three-fourths (84%) of students reported “getting started” as the most difficult part of the

research process, followed by defining a topic (66%). A majority of students had developed an established research routine which included techniques and skills they initially learned in high school, but refashioned once they entered a higher education institution. Students were driven by familiarity and habit, using an established set of resources for a majority of their research, while occasionally using additional sources. According to Head and Eisenberg (2010), students reported being uncertain about assessing the quality of their own research. They used risk-averse strategies based on efficiency and predictability in order to manage and control the information available to them, while they showed less frustration when finding information for their personal lives. It is evident that students have developed research strategies to manage, control, and limit all the information they retrieve.

Head and Eisenberg (2010) also reported that students evaluated information they retrieved from the Internet, but made less effort to evaluate information retrieved from library resources. They looked at currency as the lead indicator of validity. Evaluating information was a collaborative process, with 61% turning to their friends, peers, and family members. In addition, 49% asked instructors for assistance, while only 11% asked librarians for assistance (Head & Eisenberg, 2010). A majority of students applied a blended approach, including self-taught methods, to evaluate the credibility of web-based content. Students believed they were adept at evaluating information and applying IL techniques to course-related research assignments. According to Head and Eisenberg (2010), students were most concerned with passing the course (99%) followed by finishing the assignment (97%), and getting a good grade (97%).

Weiler (2005) found motivation to be critical to students' information-seeking behavior. Time was a major motivating factor. Students based their information-seeking experiences on the amount of time they expended, and would accept inappropriate information or lower quality information if it took less time. She also concluded that students seek supportive evidence for their predetermined perspectives. In addition, she concluded students were concerned about information accuracy only if their instructor perceived it to be crucial. Not surprisingly, students were motivated, either intrinsically or extrinsically, to spend more time seeking information for their own personal or professional use (Weiler, 2005).

Ironically, Casper and Bernhisel (2006) found that students felt competent about their abilities to conduct library research as well as their computer skills, but their research on incoming college students indicated that many of them rated themselves higher than their abilities. Their research also found that students were confident with general IL skills, but at the same time, reported their skills for conducting research were not complete.

However, Gross and Latham (2007) concluded from their research that many students were unaware of their IL and computer skill deficit and were unlikely to seek to remedy this problem. Anecdotal evidence from librarians, including myself, provided corroborating evidence that students demonstrated inflated views of their IL skills. In addition, Gross and Latham (2007) reported that "library anxiety" also played a role in the lack of confidence students felt in their abilities to engage in information-seeking tasks. Library anxiety is the term used to describe the feelings of discomfort and stress students describe when they begin the research process and use an academic library (Mellon, 1986). Finally, their research supported the notion that

IL instruction at the K-12 level is inconsistent (Gross & Latham, 2007). Students are not entering college with adequate research skills, and some students may not acquire these skills before graduating.

Given's (2002) study of mature undergraduate students indicated that their information-seeking behavior differed from younger undergraduates. The real-life experiences of mature undergraduates, which contrast considerably with those of younger undergraduates, have a significant effect on their information-seeking behavior. Mature undergraduates tend not to use academic sources, since they find these resources problematic in solving their everyday information needs. They have established their own research behavior that compliments either their job-related information-seeking behavior or their everyday life information-seeking (Given, 2002).

Single-session instruction often has no effect on the types of sources that students used for research (Fry, 2009; Gandhi, 2004; Gross & Latham, 2007). However, some studies found that there was an increase in the students' confidence level while conducting research after a single-session instruction (Hsieh & Holden, 2010). Hsieh and Holden's own research indicated improved post-test scores from students after single-session instruction. In addition, they reported students valued library instruction sessions, which they contend counters the argument that single-session instruction is ineffective. However, their research did conclude that some topics were found by the students to be too complicated for meaningful coverage in a single-session (Hsieh & Holden, 2010).

Not surprisingly, students do not view libraries and librarians as part of their information-support network. Students do not often turn to librarians for advice or

guidance when trying to determine the quality of sources. Students do use library resources, but not librarian-related services (Head & Eisenberg, 2010). Head and Eisenberg (2010) believed library instruction would benefit from rethinking and reexamination, such as modifying sessions to emphasize the research process over finding research sources, topic development, and honing their research strategies. Evaluation, interpretation, and synthesis are key information competencies of the 21<sup>st</sup> century.

### **Information-seeking Behavior of Community College Students**

Gandhi (2005) found that a majority of community college students did not possess adequate library research skills. Her study at Valencia Community College in Florida affirmed previous student perceptions. Students saw no relevance from the information presented during library sessions to their specific research needs. Gandhi (2005) also discovered students were overwhelmed by the research process and rarely explored electronic resources beyond their ability to retrieve needed information. In addition, library sessions were not being designed for students' different technology skills and learning styles. She contended the lack of adequate research skills could seriously impede students' academic careers and hinder their ability to become lifelong learners.

Karas and Green (2007) identified several themes related to the information-seeking behavior of community college students. They lacked experience doing research, they predominately used Internet search engines, and they searched library databases, to a limited extent, for additional material. Students did not comprehend the need to verify the validity of information they retrieved, nor do they possess

strategies to properly evaluate sources, which were usually based on one or two surface quality criteria. Most students did not believe that validating resources was fundamental to their education, as their primary goal was completing the assignment. The authors (2007) further reported that information-seeking behavior was often dependent on students' majors, with students in the soft, pure, and life disciplines engaging in more information-seeking behavior. Most students, however, gathered information from familiar sources which they felt were easier and less time consuming to use, and did not branch out to other resources available to them. In addition, students rarely went to the library because they had access to online resources, and often ignored print materials altogether.

Karas and Green (2007) also described library anxiety played a significant role in the information-seeking behavior of community college students. Most students feared their lack of library and research skills would reflect negatively on them or would be perceived as a negative characteristic by their peers or instructors. Their fears were alleviated to some extent after single-session, multiple sessions, or computer-assisted library instruction, but students' research skills did not improve significantly. Students found the library intervention overwhelming, with too much information presented outside the context of their research needs. Finally, the authors also found students learned more when library interventions included hands-on activities.

Groce (2008) also found that most community college students had difficulty conducting research and obtaining information on their specific topics. Her research, which supports Gandhi (2005) and Karas and Green (2007), found students predominately used resources retrieved from Internet search engines, they did not

accurately evaluate their resources, and they rarely visited the library or used its resources. Students were unable to determine the difference between scholarly resources, such as peer-reviewed articles, and sources which summarized broad topics. In addition, students believed there was too much emphasis placed on learning search strategies without being connected to a problem-solving context and not enough time was given to skill practice or feedback from either librarians or teaching faculty. All of these issues combined to result in lower motivation among students. Groce's (2008) examination of nontraditional community college students found they were often distracted, rushed, and unprepared, and allocated little time to library research.

Groce (2008) found that traditional community college students were not reluctant to using technology, while nontraditional students had some difficulty using it correctly. Many students, whether traditional, nontraditional or returning students, were overwhelmed by library resources and the technological skills needed to utilize them correctly. In addition, off-campus students were not receiving adequate training about library resources from librarians, who, in some instances, were also responsible for teaching faculty how to use similar resources (Groce, 2008).

Fry (2009) recognized the difficulty in examining community colleges students because they have diverse experiences, learning styles, skills, and educational goals. In addition, these students are ethnically, culturally, and socioeconomically more varied than traditional college student populations, and they come to college with significant limitations such as reading level, technical skills, time commitments, language, and assorted ages. Similarly, Branch and Gilchrist's (1996) seminal article described the diverse information-seeking habits of community college students and, ten years later, Warren (2006) reported the student population had become further

diverse and their information-seeking behavior more difficult to generalize. However, Fry (2009) was able to identify similar characteristics shared by community college students in their information-seeking behavior.

Fry's (2009) examination of several studies found that community college students relied on information-seeking habits they developed before entering college. He concluded that students rarely retained information-seeking skills taught by librarians or teaching faculty, and seldom used library resources for their research needs because they did not connect library resources to the importance of their coursework. Fry (2009) pointed to one study in which almost 38% of students surveyed reported never using library databases, and over 44% of students reported never utilizing the library. This supports previous studies which reported that most community college students are unfamiliar with libraries, librarians, and the resources or services libraries provide.

Community college students feel confident in their abilities to conduct research, but fail to demonstrate these skills. Ironically, students report the more time they spend on conducting research; the less satisfied they are with the results retrieved. Students continue to have difficulty narrowing broad topics, recognizing their information needs, and developing research strategies for retrieving information. In addition, students are satisfied using non-authoritative results for their research. Understanding the information-seeking behavior of community college students could be beneficial for librarians and teaching faculty in developing strategies to teach research skills.

### **Information Literacy and Faculty-Librarian Collaborations**

The success of IL is related to faculty-librarian collaborations. The monumental advances in technology have multiplied the information available to students with the role of the librarians and faculty expanding incrementally (Brasley, 2008).

In her study of faculty-librarian collaboration, Gandhi (2005) asserted that librarians and teaching faculty could mutually reinforce IL skills by integrating IL components within specific courses, which helped to establish positive relationships as well as meaningful assignments for students. Classroom experiences that blended subject content with information research and evaluation skills could increase student comprehension. Gandhi (2005) referred to several studies that were conducted at Southeastern Louisiana University, Towson University, and Glendale Community College which reported positive experiences resulting from faculty-librarian collaborations, but this type of relationship remains unique rather than the norm.

Librarians have been proactive in developing strategies to establish campus partnerships that incorporate institutional values and missions. Developing collaborative partnerships with teaching faculty begins with single-session library instruction. Single-session instruction is the most prevalent format for teaching IL skills, but this approach has many disadvantages. According to Gandhi (2005), librarians have only one hour to assess students' prior IL knowledge and skills. Librarians usually present an enormous amount of information in a short time, which can be overwhelming for students who find the information irrelevant to their research needs. In addition, the single-sessions allow for only minimal or superficial collaboration with teaching faculty (Gandhi, 2005).

Faculty perceptions and attitudes toward librarians affect the collaborative process (Black, Crest, & Volland, 2003; Hopkins & Julian, 2008). This has an effect on students' attitudes toward IL instruction and the learning and teaching environment in the classroom (Hopkins & Julian, 2008; Reed, Kinder, & Farnum, 2007). Teaching faculty are reluctant to enter collaborative relationships with librarians for fear of losing valuable course time and control over content (Mackey & Jacobson, 2004; Reed et al., 2007). Without collaboration, librarians are unable to identify students' needs, are uncertain about how teaching faculty are integrating research skills into the students' assignments, and more importantly, are unable to show students how library resources are crucial to their coursework (Reed et al., 2007).

Information literacy instruction is often marginalized by some faculty who view it as a "library skill" as opposed to research skills (Johnston & Webber, 2003). They further asserted teaching faculty were mostly unaware of how to teach IL skills. Similarly, Borelli et al. (2009) argued teaching faculty know very little about how to teach IL skills because many of them lack IL knowledge and skills themselves.

According to McGuinness (2006), many teaching faculty feel students are responsible for becoming information literate by completing IL exercises, attending library-based instruction, participating in a research methods course, engaging in core skill modules, taking computer or library skills classes, receiving feedback, or obtaining general direction from faculty or librarians, who can recommend important sources. She also reported that teaching faculty believed that students develop IL skills based on their personal interests and motivation, which relied completely on students being proactive about learning these skills. McGuinness (2006) further

reported that faculty felt IL skills were acquired in other learning situations, such as students' social development, and that teaching such skills was not a priority.

Furthermore, convincing teaching faculty, department heads, deans, and key administrators that IL skills are essential to student learning continues to be a difficult mission, which usually falls to librarians to accomplish (Jenkins & Boosinger, 2003). Some administrators acknowledge that integrating IL into the curriculum can be achieved through positive and proactive collaborations between librarians and teaching faculty (England & Pasco, 2005). This collaborative effort would lead to more authentic learning. Community college administrators understand the importance of authentic learning, yet they often struggle to provide a continual two-way path between education and training, and between theory and practice (Eisenberg, 2008; England & Pasco, 2005). More importantly, collaboration between teaching faculty and librarians is considered by most accrediting agencies as a factor contributing to IL skills acquisition (Jenkins & Boosinger, 2003; Saunders, 2007).

Gutiérrez and Wang (2001) recommended IL be taught through a series of library sessions as opposed to a single-session. Students would value the library sessions because the information would be provided at the point of need. Their study found single-session instruction was not sufficient to significantly improve library or research skills, except in students who were already regular library users (Gutiérrez & Wang, 2001). This reinforces the argument that research skills need practice, and teaching faculty need to generate assignments that incorporate and require students to use library resources.

Hopkins and Julian (2008) reported that most library instruction programs have formalized relationships with English departments to provide IL instruction based on

integrated assignments. However, this was not the case with other subject-based courses, as students occasionally selected research topics unrelated to their majors, but received subject-specific library instruction. The authors believe successful faculty-librarian collaboration should begin with creating a standard curriculum, designing subject-based learning outcomes, and developing a plan to integrate library instruction into discipline-specific courses. This may also encourage librarians to focus their instruction sessions on course assignments and meaningful advanced research methods, thus avoiding the repetition of lower-level library skills (Hopkins & Julian, 2008).

Faculty-librarian collaborations can lead to effective research assignment design and library instruction tailored to particular courses. Students would learn how to use library resources more effectively, gain real-life experiences, obtain the opportunity for critical reflection, and, for a number of students, demonstrate less research anxiety (Bruce, 2002; Gandhi, 2005; Breivik, 2005; Borelli et al., 2009). In addition, Gandhi (2005) found that faculty-librarian collaborations reinforced positive relationships between students and librarians. Students actively engaged with faculty regarding content, and consulted librarians regarding research.

Eisenberg (2008) advocated a collaborative approach, which involves teaching faculty, librarians, and technology experts. He viewed teaching IL skills within the curriculum to be appropriate, but did not advocate adding more content. Eisenberg (2008) suggested curriculum mapping to identify relevant and appropriate placement of IL in the context of the subject area curriculum, as well as linking and integrating discipline-based topics, lesson plans, and assignments.

Black et al. (2003) asserted that building collaborative partnerships is so critical that librarians must reach out to teaching faculty, who typically operate from a culture defined by content focus, autonomy, time constraints, and resistance to change. In addition, they found that librarians can leverage their technological expertise to establish relationships with teaching faculty and increase integrating IL into course curricula. In addition, some librarians have developed faculty-focused workshops to enhance collaborative partnerships and promote library instruction programs.

Bruce (2002) found that librarians are moving from an information-retrieval centered-view toward an approach that encourages students' learning. Librarians now focus their expertise on emerging and communication-oriented technologies to promote IL. However, librarians' new focus must be grounded in learning and teaching pedagogy, according to Johnston and Webber (2003). They suggest that librarians are often criticized by academics for the library instructions programs they have developed and implemented because they are not based on established pedagogy or lack an assessment component. Teaching IL, however, can also contribute content to academic programs as faculty-librarian collaborations become more complex and important (Gratch-Lindauer, 2002).

Effective faculty-librarian collaboration efforts can lead to successful outcomes if they are planned prior to the course. Reed et al. (2007) described significant improvements in IL skills among students. They found that 85% of students were able to pass an IL test taken after library instruction, while only 29% were able to pass prior to library intervention. In addition, the authors reported that students viewed librarians as instructors who added depth and insight into the curriculum, and independently consulted with librarians about course work.

According to Reed et al. (2007), faculty noticed an improvement in assignments from the previous year, and also saw their workload reduced as students consulted more with librarians. Some students still had difficulty with IL skills, while others adhered to previously held views about IL due to mixed messages received from teaching faculty. According to Reed et al. (2007), collaboration was successful when focused on using databases, especially searching techniques, and library services. It also resulted in more students receiving IL instruction, better integration of librarians into the classroom, and an increase in faculty knowledge of IL content in their courses. Reed et al. (2007) warn, however, that collaboration does require a great deal of time, especially when librarians are involved in all aspects of course development.

Gullikson (2006) contended that there is little guidance available to librarians on which aspects of the ACRL standards to emphasize when collaborating with teaching faculty. After a thorough examination, (2006) concluded nine of the 87 outcomes were librarians' primary responsibility, while 53 were to be addressed by the course instructor. Furthermore, only 25 outcomes were considered to be collective tasks for faculty and librarians. Gullikson (2006) also reported that faculty had difficulty understanding the language of the outcomes, and complained about the repetition and wordiness used in the ACRL standards.

Interpersonal faculty-librarian relationships have led to customized IL instruction, with faculty supplying the content of the course, and librarians shaping the research questions, teaching the skills to discover the answers, and paving the way for collaborative instruction (Black et al., 2003).

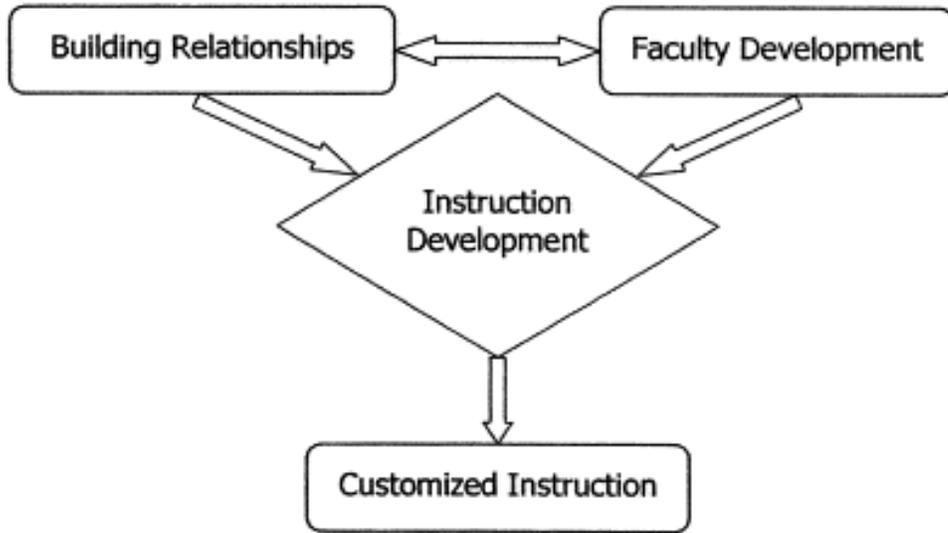


Figure 2.8 Librarian-Faculty Collaboration Model. Adapted from “Building a successful information literacy infrastructure on the foundation of librarian-faculty collaboration,” by C. Black, S. Crest, and M. Volland, 2001, *Research Strategies*, 18(1), p. 218. Copyright 2003 by Elsevier Science Inc.

As depicted in Figure 2.8, customized instruction results when librarians acknowledge that faculty have purview over the curriculum. Black et al. (2003) also found that librarians can avoid these negative perceptions by employing a number of strategies, including formal communication, campus involvement, or informal contacts.

Brasley (2008) believed librarians must align an instruction program to their institution’s educational goals and missions, and must work with teaching faculty to craft mutually agreed upon objectives. The author details a framework for collaboration:

1. creating a shared vision;
2. developing mutually agreed curricular/learning outcomes;
3. establishing a curriculum mapping project to (a) review the degree requirements, (b) analyze courses for existing IL and identify

- weakness, and (c) create a draft curriculum map identifying where IL exists in the curriculum and areas for potential collaboration;
4. identifying common courses for integrating IL; and
  5. establishing an assessment strategy with activities, ranging from direct, indirect, formative, summative, qualitative, quantitative, and diagnostic measures.

Brasley (2008) described effective models of collaboration (see Appendix B) that range from informal to programmatic, but they share common features for IL instruction. The Introduction model teaches freshmen basic or generic IL skills, while the General Education model integrates IL outcomes into General Education goals. The Learning Outcome model has librarians and teaching faculty collaborating to create activities, assignments, and learning outcomes intended for the discipline-based department. The Information Literacy Course model is designed to help students acquire IL competencies through a credit course or tied to a discipline-based course, while the Faculty Focus model emphasizes discipline faculty facilitating IL instruction through faculty-librarian training. Finally, the On-Demand model, which is the prevailing model in most libraries, results from faculty requests for IL instruction, which can lead to improved assignments and learning outcomes over time.

Einfalt and Turley (2009a) described a collaborative model which promotes a three-way interaction among teaching faculty, librarians, and skills advisors. The model is based on overlapping aims in IL (research) offered by the librarian, and academic literacy (academic skill support) supplied by the skill adviser. According to Einfalt and Turley (2009a), academic literacy involves knowledge, concepts, and skills that address study effectiveness and academic achievement. The focus is on the learning process with language being a key building block of knowledge, and writing

being a way of learning, expressing, and thinking. Like IL, academic literacy is a process-to-product approach with a genesis in constructivist learning theory.

Einfalt and Turley (2009b) explained the levels of a collaborative approach: cooperation, collaboration, and team teaching among faculty, librarian, and skills adviser. The authors content that interactions among the three participants involve support sessions, consultation advice, sharing information, and providing feedback within an institutional context. With students being central to this model, the goal is to engage them in both research and skill development. The authors also believed this model provided more potential for collaboration among all three participants. They also called for an end to remedial generic skills classes. Finally, Einfalt and Turley (2009b) feel their model yields a positive experience for first-year students by redefining the support provided.

Assessment is an essential part of the collaborative process. With the increased emphasis on accountability, there is a growing interest in developing methods to measure students' learning (Burkhardt, MacDonald, & Rathemacher, 2005). Radcliff, Jensen, Salem, Burhanna, and Gedeon (2007) described three levels of assessment to determine IL skill acquisition and retention. Classroom assessment, which librarians are most likely to be involved with, provides more feedback regarding student learning, but focuses on one class and is tied to course-related outcomes. Programmatic assessment centers on learning outcomes for a specific program or discipline, which may differ from institutional goals. Finally, institutional assessment views students' skills as a whole, which may involve testing students before they begin their first semester and during their last year (Radcliff et al., 2007).

Accrediting agencies like MSCHE look for evidence that IL skills are being integrated into the curriculum.

Gandhi (2005) asserted that prior knowledge is needed to assess students' IL knowledge and skills, and she advocated for using pre- and post-tests to verify that learning had been successful. Burkhardt et al. (2005) believed that quantitative and qualitative assessment provided a holistic approach to evaluate students' knowledge and skills, as well as to determine the effectiveness of an IL instruction program. Both approaches can assist librarians and teaching faculty in developing learning objectives, which can define what students need to comprehend during the learning and research process. The need for faculty-librarian collaboration is aptly summarized by Bruce (2002) who simply stated, "Information literacy education is not possible without partnerships" (p. 13).

### **Summary of Scholarly Examination**

Several important points materialized during the literature review that helped address some of the key questions which guided this improvement plan. First, the initial definition of IL, developed by the ALA in 1989, continues to be the basis for subsequent definitions which have been developed during the intervening years. Subsequent IL models have developed that are also grounded in the ALA's definition, but take into account information-seeking behavior, diverse learning styles, and rapid technological changes. Although criticisms continue over what constitutes IL, there has been no real deviation from the ALA's initial definition. Additional critiques contend that IL does not incorporate emerging technologies, lacks realistic objectives, and is viewed by only librarians as a crucial skill. Regardless, IL, as outlined by the

ALA, is included as a measurable standard by most higher education accreditation agencies.

Second, the literature review revealed that librarians are not aware of students' information-seeking behaviors, which have already been established during high school. Regardless of whether they attend a 2- or 4-year institution, college students establish their own research behaviors in high school and adjust those familiar habits when they enter college. They are confident with their research skills, yet they have little experience using scholarly resources and even less skill evaluating the accuracy of sources. Primarily, students use the Internet and familiar search engines to retrieve evidence that supports their predetermined perspectives. Most students are satisfied with their research skills and never seek to improve them. Similarly, many students exhibit a high level of confidence regarding their knowledge of technology, but they cannot demonstrate such skills. Lastly, there are additional factors, such as time, prior experience, educational goals, and everyday life, which strongly influence a student's information-seeking behavior.

Finally, faculty-librarian collaborations are essential to reinforce IL skills, but the literature implies these relationships are not widespread. Librarians are more proactive in developing collaborative partnerships, and typically begin this process through the single-session library instruction. However, the literature indicated mixed results for single-session instruction, though it continues to be the most popular method for teaching IL. Nevertheless, teaching faculty report receiving improved assignments, with students incorporating quality sources because they are using library resources more effectively, have less library anxiety, and show enhanced research skills. The literature also described several collaborative models that have been

effective in establishing faculty-librarian collaborative relationships. These partnerships, however, take an enormous amount of time and effort. Assessment is often tied to faculty-librarian collaboration, with librarians designing library instruction based on prior knowledge of students' research skills which can be used to create common learning objectives.

The literature review examined IL definitions and standards used in higher education as well as revealed the information-seeking behavior of community college students. In addition, this scholarly examination provided evidence that faculty-librarian collaborations are essential for IL to be effective. The information gathered from this section was incorporated into the methods used to examine IL at Cecil College.

### **Chapter 3**

#### **EXAMINING INFORMATION LITERACY AT CECIL COLLEGE**

This chapter examines Cecil College faculty perceptions of IL. Both quantitative and qualitative data were collected. In the first phase, a survey was used to record teaching faculty's knowledge of IL and document their opinions of students' IL skills. For the second phase, face-to-face interviews were conducted with several full-time and part-time adjunct faculty to gain additional insight about IL at Cecil College. The results, which will be reported and discussed in a subsequent section, will be drawn upon to develop recommendations which will be reported in the next chapter.

As previously stated, the goal of this improvement plan is to strengthen the current IL program at Cecil College. The following questions have provided the central focus for this improvement plan and guided this examination:

1. How do Cecil College teaching faculty understand IL?
2. In what ways are the teaching faculty incorporating IL knowledge and skills into their courses?
3. In what ways, if any, are the teaching faculty collaborating with librarians to incorporate IL knowledge and skills into their courses?
4. What collaborative efforts between teaching faculty and librarians are documented in the scholarly literature and which collaborative efforts have been successful?

## **Methodology and Data Collection**

### **The Survey**

A 23 question survey instrument was designed with questions adapted from Public Opinion Laboratory (see Appendix C). Public Opinion Laboratory developed the survey for Northern Illinois University (NIU) to collect information from teaching faculty regarding IL integration into the classroom and their assessment of students' skills. The NIU survey was conducted from February 2005 through March 2005. The results indicated that 59% of teaching faculty taught a course with at least one IL component, 75% of teaching faculty designed assignments to develop information gathering skills, 42% used graded assignments to assess students' IL skills, 41% utilized research papers, and 68% indicated some interest in collaborating with the University Libraries to develop IL components for their courses (Public Opinion Laboratory, 2005).

The survey distributed to Cecil College teaching faculty was divided into three sections (see Appendix D). The initial section comprised 11 questions which were designed to ascertain faculty knowledge of IL, their ability to integrate IL components into classroom, and collaboration efforts with librarians. Space was provided for faculty to make additional comments if they so desired. The second section had nine Likert-type items for faculty to rate their observations of students' IL skills. The scale was comprised of four categories where 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. Again, space was provided for additional comments. The third section had two questions to obtain demographic information regarding their faculty status and their teaching experience. An additional question was added which

asked participants if they were willing to participate in a follow-up face-to-face interview to discuss IL at Cecil College.

Prior to submitting the research protocol for review to the Instructional Review Board (IRB) of the University of Delaware, the survey, follow-up interview questions, and additional protocol materials were sent to Lorraine Martorana, Director of Library Services at Cecil College, and Dr. C. Dan Stoicescu, Director of Institutional Research at Cecil College, for review. The completed research protocol received IRB approval in March 2011. Dr. Stoicescu and Dr. David Linthicum, Dean of Academic Programs at Cecil College, were contacted soon after and notified that the survey could proceed. Dr. Linthicum distributed the survey through e-mail to full-time and part-time adjunct faculty.

The survey was sent electronically to 199 teaching faculty at Cecil College, 44 of whom were employed full-time, and 155 of whom were part-time adjunct faculty (MHEC, 2012). Librarians and administrators were not included in the survey to only collect teaching faculty perceptions of IL. However, librarians and administrators were interviewed later on in the data gathering process. Data collection occurred during a 32 day response period. Completed surveys were returned either via e-mail, or were printed out and sent through campus mail. A total of 23 faculty responded to the survey.

The decision to offer the survey to all 199 full-time teaching faculty and part-time adjunct faculty was made after calculating the sample size needed to produce statistically significant results. With an error level of 4.5% and a finite population size of 199, the sample size that was needed based on the confidence levels for achieving the specified error level were near the overall population size (Table 3.1). According

to statistical researchers, determining the sample size is among the most complex tasks researchers must undertake in order to ensure accuracy in the results reported and to minimize false conclusions (Gorman & Clayton, 2005; Robson, 2000; Sapsford, 1999).

Table 3.1 Sample Size based on Confidence Level and Margin of Error

Confidence Level	Margin of Error						
	3%	3.5%	4%	4.5%	5%	5.5%	6%
	Sample Size Needed						
90%	158	147	136	125	115	106	97
95%	168	159	149	140	131	122	114
99%	180	174	167	160	153	146	139

*Note:* Adapted from “The adequacy of response rate to online and paper surveys: What can be done?” by D. Nulty, 2008, *Assessment & Evaluation in Higher Education*, 33(3), p. 310.

With smaller populations, a larger percentage of the population needs to be surveyed to achieve the same level of accuracy that would result from surveying a smaller sample size from a larger population. Nulty (2008) contends that if the entire population is surveyed, the purpose is to establish the views of the entire population. Thus, in order to ascertain the knowledge and views teaching faculty have regarding IL at Cecil College, the decision was made to survey the entire population. Because the survey was delivered electronically via e-mail, there was no additional cost in money or time incurred by sampling the entire population of teaching faculty.

Nulty (2008) performed research on the adequacy of response rates among online and paper surveys. His research confirmed previous studies which concluded that response rates to online surveys are much lower than those obtained when

utilizing the traditional paper surveys. He contended that it is disconcerting to accept low response rates on any survey because the proportion of non-respondents may be too high for the researcher to be sure that those who responded are representative of those who did not respond. In addition, he asserted that it is reasonable to expect that any survey that samples a population will have some sampling error and bias (Nulty, 2008).

Nevertheless, by utilizing the “liberal conditions” established by Nulty (2008) in relation to acceptable sampling error and established confidence levels, a lower response rate is acceptable when sampling a small population. The problem, however, is not the response rate to the survey, but that the survey results may suffer from systematic bias which will affect any summative judgment regarding the sampled population. With this in mind, if the total population is 200, the total response rate required is 12%, and the required number of respondents needed is 23. This would be under Nulty’s liberal conditions with a 10% sampling error and an 80% confidence level (Nulty, 2008). As stated previously, the return rate for the survey distributed to Cecil College teaching faculty was 11.6%.

The analysis of the survey distributed at Cecil College focused on 12 survey questions that produced the most relevant quantitative data. Specifically, survey questions which addressed faculty knowledge of IL (Q1, Q2, & Q3), collaborating with college librarians (Q4 & Q7) and assessing students’ IL skills (Q11, Q14, Q16 & Q19) were examined. The open-ended responses were also summarized and categorized. A summary of the findings are presented later in this chapter.

## **The Interviews**

Follow-up interviews were conducted with six individuals randomly selected from survey participants who indicated they were willing to participate in a follow-up interview. In addition, two librarians, and two administrators were also interviewed to obtain their perspectives on IL at Cecil College. The main purpose of the follow-up interviews was to gather additional information about teaching faculty's knowledge and perceptions of IL. The interviews were also conducted to gain additional data about Cecil College students' research skills and collaborative efforts with college librarians.

Face-to-face interviews were conducted with those teaching faculty who indicated they were willing to further discuss IL at Cecil College. Each interview lasted approximately 45 minutes. An interview protocol was developed consisting of an e-mail request for an interview, a consent form, an interview script, and interview questions to ensure the interviewees were presented with uniformed queries (see Appendix E). When appropriate, follow-up questions were also asked. The interviews were recorded with the permission of the interviewees, and they were assured that their identities would remain confidential. Each interviewee was also reminded they were free to withdraw consent and discontinue the interview at any time without penalty or prejudice. All interviews were conducted in a private room or a private office at Cecil College.

The recorded interviews were transcribed immediately upon completion and categorized into phrases and statements according to themes and categories. During transcription, all identifiable information was stripped to protect the privacy of participants. The information was stored in a password-protected Excel spreadsheet.

The data gathered during the interviews will be summarized and presented in the findings.

### **Analyzing the Results**

The following analysis is based on survey responses combined with results from interviews conducted with teaching faculty at Cecil College. Comments provided through the survey as well as during the interviews afforded a vital insight into faculty perceptions, and both will be included as appropriate to explain the data.

As mentioned, there was some concern that the return rate of 11.6% was low and the results would be deemed to be insufficient to yield reliable results. However, when combined with comments from the interviews conducted with faculty, the patterns and trends in the survey data combined with data obtained from the scholarly literature, it was determined there was sufficient information to make informed recommendations. It should be noted that by using traditional statistical research methodology, 131 results were needed for the survey to achieve a 95% confidence level with a 5% error level (Nulty, 2008; Sapsford, 1999).

The next section will present a descriptive analysis of the participants' familiarity with IL, and will examine their perceptions of Cecil College students' IL knowledge and skills. In general, the teaching faculty at Cecil College hold a mixed awareness of IL.

### **Defining Information Literacy**

The majority of teaching faculty surveyed were able to define IL. They were not provided with an IL definition, but were simply asked if they could define IL

based on their own knowledge and familiarity with the concept. Of those surveyed, 61% believed they could define IL, while 39% were not able to do so.

Immediately following the initial question, participants were provided with several phrases and prompted to determine which statements they believed best describe IL. The statements were based on the ACRL Standards, but were reworded using conversational language. Additional options were provided if participants were inclined to select all of the statements, none of the statements, or to identify their lack of knowledge regarding IL.

The results confirmed that established IL definitions are not well known by Cecil College faculty. Only five respondents (22%) identified all the statements as indicative of IL. No individual indicated that none of the statements described IL or that they had no knowledge of the concept. Surprisingly, no respondent selected the first statement, “Knowing what you need to know,” which corresponds to ACRL Standard One, which is considered to be the first step taken by an information literate individual.

Nevertheless, as indicated in Figure 3.1, Cecil College faculty selected three statements to best describe IL. Being able to effectively and efficiently access or “knowing where to find answers” was identified by 23% as best defining IL. The ability to “seek assistance” may have led some survey respondents to inadvertently believe reference was being made to the library and its resources. In follow-up interviews, several interviewees made comments which equated IL with library research skills. One interviewee defined IL as “...students being able to use library resources and do research, but I do think it expands beyond that to be able to use the Web to do the same kind of research.” An adjunct faculty spoke of having the

librarian come to their English 101 classes, but did not invite a librarian to their English 102 classes because, “I feel that [the students] have received library training already, and if they have any questions, they can go ask at the library or they can ask me.”

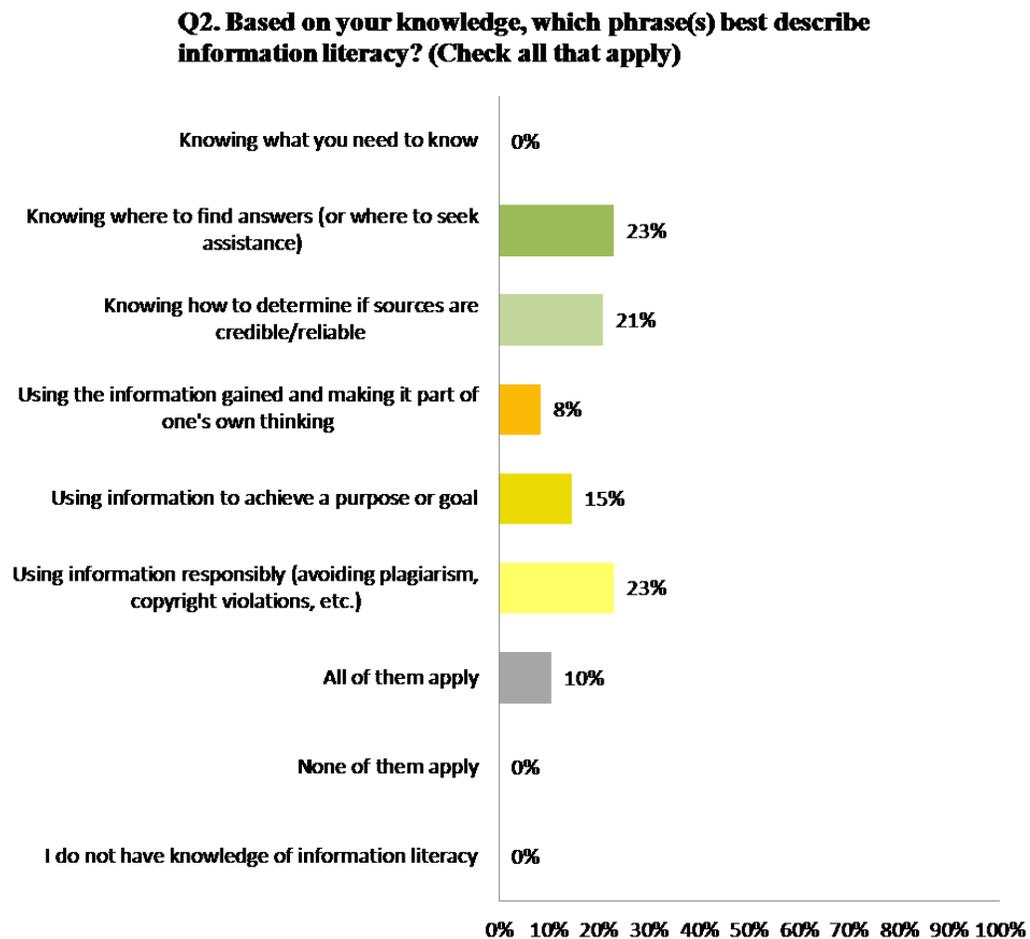


Figure 3.1 Describing Information Literacy

In addition, the ability to evaluate the credibility and reliability of sources (see Figure 3.1) was selected by 21% of respondents as best characterizing IL. In follow-up interviews, several teaching faculty believed this to be a crucial skill but admitted their students were weak at evaluating the reliability, validity, and accuracy of the information they retrieve and use in their research. Two interviewees mentioned incorporating a unit on evaluating sources for their students. One adjunct faculty stated, “I show them how to evaluate sources, while the librarian is showing them what sources to use.” The follow-up interviews revealed that some Cecil College teaching faculty show their students more in-depth research and web evaluative skills than those taught during library sessions.

Finally, using information ethically and legally, and avoiding plagiarism and copyright violations was perceived by 23% of respondents to best describe IL (see Figure 3.1). According to several interviewees, academic dishonesty and integrity are parallel to IL knowledge and skills. Cecil College’s academic dishonesty policy could be used to define IL, according to one interviewee, while several others interviewed understood IL to be already acknowledged in this policy. In several follow-up interviews, a number of teaching faculty stressed the need to include plagiarism in any definition of IL. One interviewee expressed frustration with students who inadvertently plagiarize by throwing their hands up in the air and stating, “It’s about getting them to understand... but they think they have a handle on it. They look at you cross-eyed when I ask them where they got the sources, and they say online... but where online!”

### Teaching Information Literacy at Cecil College

The majority of survey respondents (86%) believed that IL concepts, in some form, are being taught at Cecil College, while 14% were not aware these concepts are being taught on campus (see Figure 3.2). Approximately 24% of respondents are teaching IL in their classrooms (see Figure 3.2). Participants were asked to identify courses that included any IL components, and several identified English 101, nursing, physical science, and business. However, as previously mentioned, the IL component may take the form of a unit on evaluating resources or avoiding plagiarism. In addition, librarians' efforts at teaching IL are noticed by only 38% of respondents (see Figure 3.2). Two respondents, however, wrote some insightful comments. One respondent was unaware that librarians could assist with integrating IL components into the classroom, while the other wrote s/he did not realize librarians at community colleges taught such skills.

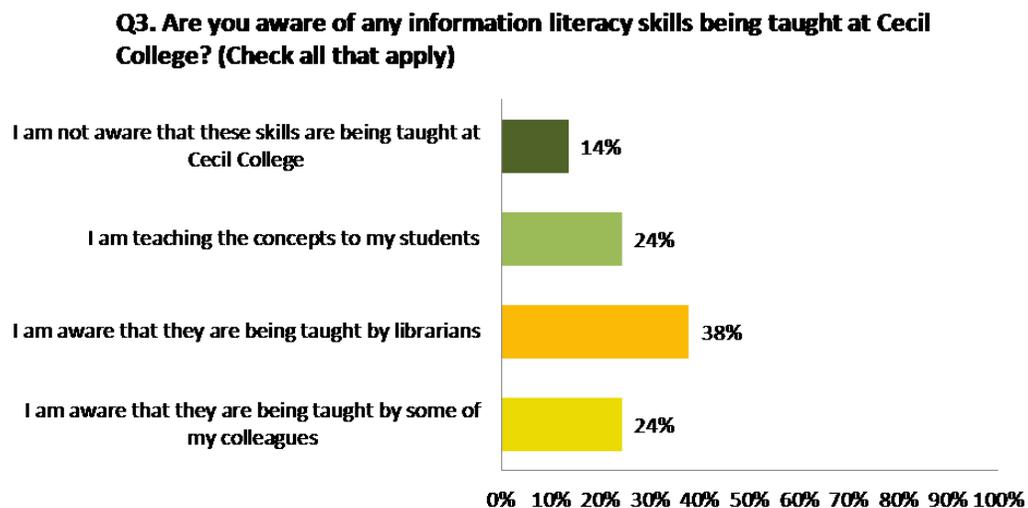


Figure 3.2 Teaching Information Literacy Skills

During the 2011-2012 academic year, the Librarian for Instruction, Information Technology, and Systems Administration conducted 41 instruction sessions, with 533 student being taught IL skills (Veteran Memorial Library, n.d.). However, almost two-thirds of faculty respondents reported never having discussed the possibility of integrating IL components into their course curriculum with a librarian. Only 35% of respondents reported having such discussions with college librarians, contrary to recent national trends. The Primary Research Group (2009) reported that 57% of faculty in the United States had IL integration discussions with librarians. The data suggested that teaching faculty at smaller institutions were more likely to have those conversations with librarians.

As Figure 3.3 illustrates, data gathered from the survey indicates that some faculty (32%) are designing assignments to cultivate their students' information gathering skills, or developing coursework to promote students' information evaluative skills (19%). Although there is still a reliance on librarians to teach IL skills (19%), the teaching faculty are comfortable providing lecture-type instruction about research skills (17%).

**Q7. Do you use any of the following methods to teach information literacy in your course(s)? (Check all that apply)**

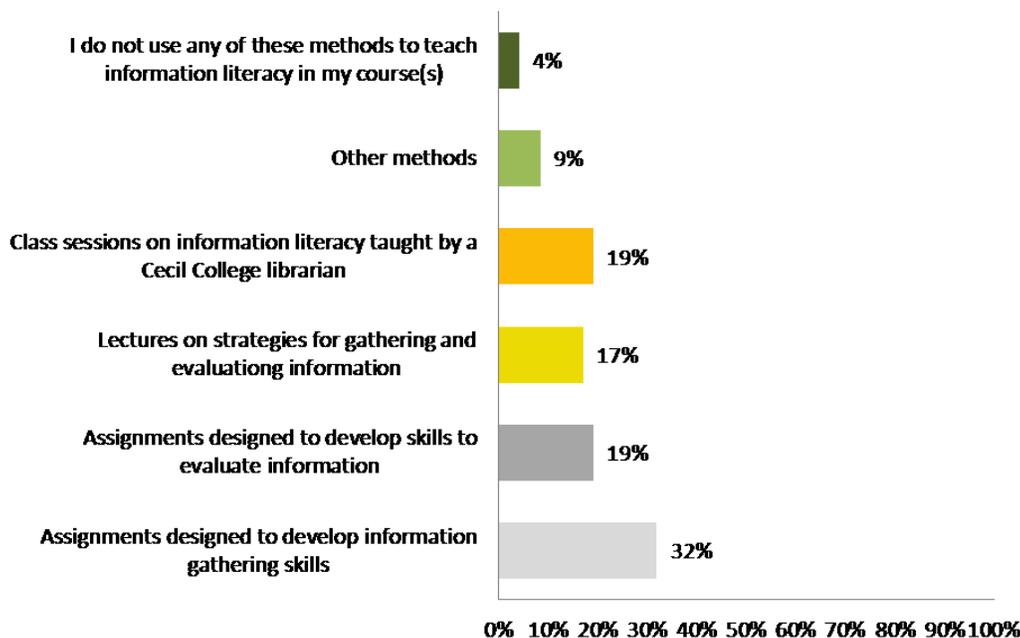


Figure 3.3 Methods Used to Teach Information Literacy

A few teaching faculty (10%) used “other methods” to teach IL, while only four percent did not employ any method mentioned. No respondent, however, provided examples of “other methods” they are using in their classroom. Different methods may be used by teaching faculty to teach IL at Cecil College, but there is no indication students are learning these skills. The Primary Research Group (2009) study also reported that teaching faculty at community colleges were incorporating IL teaching in their classrooms in some form.

Few respondents (9%) believe they are solely responsible for teaching students IL skills, while many (30%) consider the English faculty responsible for providing IL instruction (see Figure 3.4). Among the faculty respondents, 22% believe librarians

should be responsible for teaching IL skills, while 13% believe individual discipline departments should teach IL. Only 26% of respondents indicated that collaborative teaching between faculty and librarians is the desired approach, although it was mentioned in several follow-up interviews.

One interviewee voiced the opinion, “I think we are all responsible, every single teacher on campus is responsible.... But it has to be a joint venture between librarians and faculty.” During another interview, one respondent captured the belief that other interviewees had by saying, “I think a collaborative environment would be good for teaching, but I would favor it being part of the core curriculum, begun early and immediately.”

**Q11. Who should be responsible for providing information literacy instruction to students at Cecil College?**

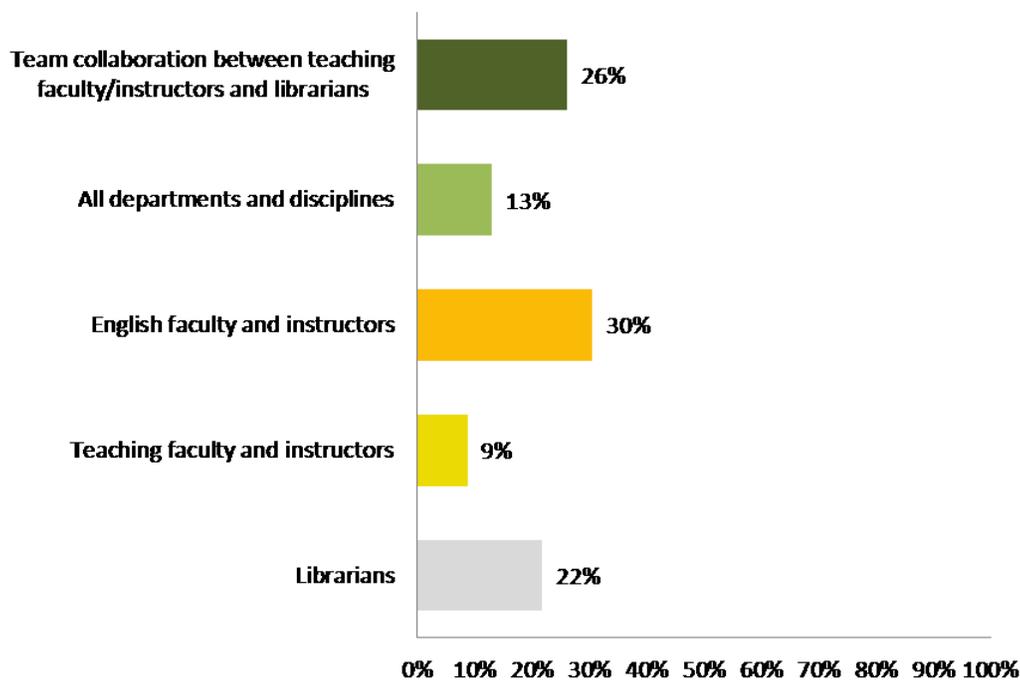


Figure 3.4 Responsibility for Teaching Information Literacy

**Cecil College Students and Information Literacy**

There is no comprehensive assessment tool used at Cecil College to measure students' IL skills. Currently, librarians use the "one-minute paper" assessment tool (see Appendix F), which provides a quick, simple method to collect responses on student learning after receiving the library's single-session instruction. Another method to gauge students' skills is to gather data from teaching faculty observations.

The analysis of three questions pertaining to Cecil College students' IL skills provides a glimpse of their abilities. Figure 3.5 shows that most respondents surveyed believe students are able to locate and retrieve information needed to complete course assignments (52%). This was substantiated by several comments during the follow-up

interviews, but several statements indicated that students only seek information to support their initial opinions or hypotheses. Students are not seeking alternative arguments or theories, and rarely include print sources or scholarly information that is not current, according to those interviewed. This observation is supported by the scholarly literature (Casper & Bernhisel, 2006; Head & Eisenberg, 2010; Seamans, 2002; Weiler, 2005). One interviewee disagreed that students were able to find reliable information, and remarked that library resources were limited for their students' needs. The interviewee admitted accessing other databases to provide articles to students that were more relevant to their research topics.

**Q14. Cecil College students are able to effectively locate and retrieve information (databases, Internet, library, etc.) needed to complete course assignments.**

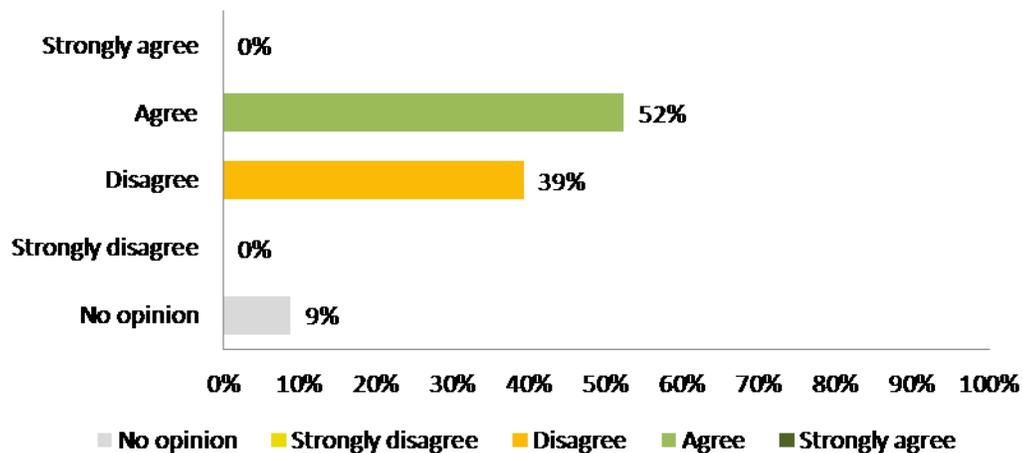


Figure 3.5 Students Ability to Locate and Retrieve Information

Cecil College students may be capable of locating and retrieving information, but they are not able to effectively evaluate the accuracy or validity of the information

they obtain (see Figure 3.6). This sentiment was echoed in several follow-up interviews as well as the survey data. A few teaching faculty indicated they teach source evaluation in their classrooms, but do not call on librarians to teach evaluation skills. However, librarians often encounter students with assignments that refer to sources no longer available at the library, or that have been replaced with more appropriate resources, or that were never available. According to Cecil College librarians, they also encounter students who are instructed to use an index to find relevant sources, but are unfamiliar with or do not completely grasp the concept of an index. In any event, 57% of those surveyed disagree with the premise that Cecil College students are able to evaluate the credibility and validity of information.

**Q16. Cecil College students are able to effectively evaluate the accuracy and credibility of the information they retrieved for an assignment.**

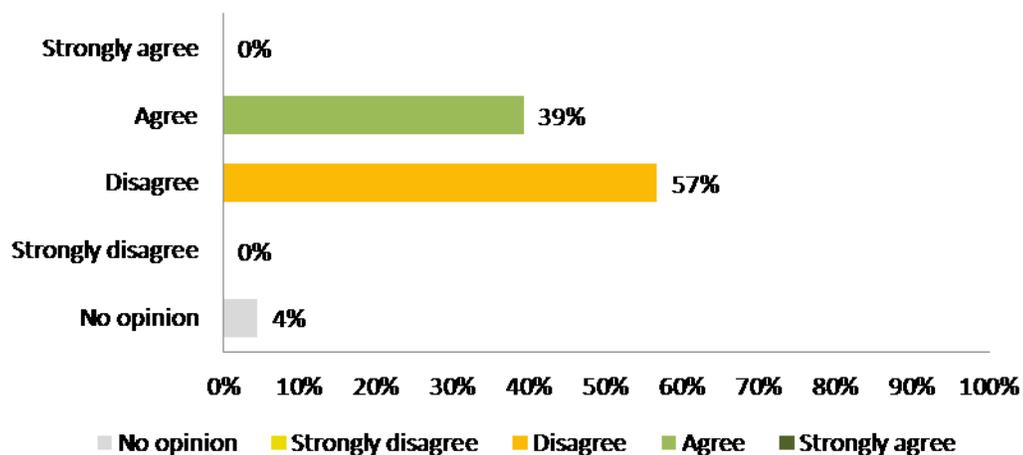


Figure 3.6 Students Ability to Effectively Evaluate Information

Finally, the survey concluded by seeking an overall assessment of the IL skills of Cecil College students (see Figure 3.7). Students' abilities were considered sufficient by 39% of respondents, while 48% disagreed that students' skills were sufficient.

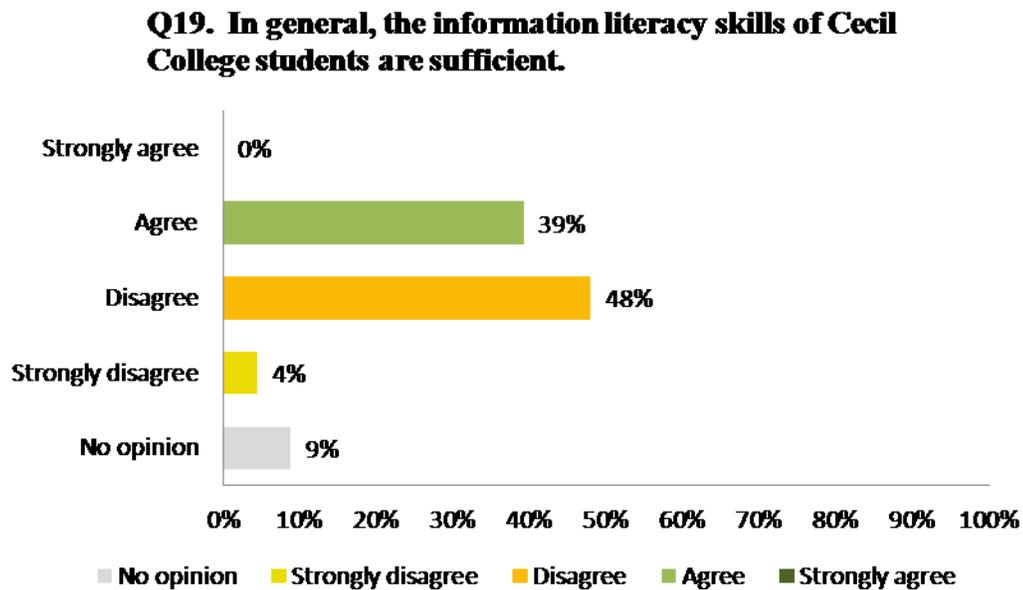


Figure 3.7 Information Literacy Skills of Cecil College Students

Again, follow-up interviews provided vital insight into students' IL abilities. Those interviewees who self-identified as English instructors believe students leave their classes with some IL skill level, but they are not sure if those IL skills are reinforced in other courses. According to one interviewee, “[The students] are not doing great, but they’re working on it.” One respondent who strongly disagreed wrote, “Rarely do I have a successful final research paper. Information literacy and critical literacy are too new to students and they need more practice.” It was clear

from written comments and follow-up interviews that students entering Cecil College have low IL skills, but gain some skill level while they are enrolled. Whether the students are information literate when they graduate is uncertain.

### **Findings**

This study revealed contradictions regarding IL among the teaching faculty at Cecil College, including their knowledge, teaching methods, and assessment of students' abilities. Although the response rate was a concern, the data gathered from follow-up interviews reinforced the survey results and supported similar findings described in the study by Borelli et al. (2009) which found faculty are unable to teach IL skills because they lack IL knowledge themselves. As mentioned in the literature review, it is imperative that Cecil College understand the teaching faculty's perceptions of IL before developing curricula and programs that include IL instruction.

Three themes emerged from analyzing the survey results and studying the follow-up interviews. First, there was no uniform definition of IL. The respondents viewed IL differently, placing equal emphasis on the ability to find information and the ability to cite sources. However, follow-up interviews revealed that the ability to evaluate the credibility of sources was of great importance and was synonymous with being information literate. This is consistent with the findings reported by Gullikson (2006).

Second, a collaborative effort between faculty and librarians may be necessary to ensure that the teaching of IL at Cecil College will be successful. Although a majority of respondents believe the English faculty should be responsible for teaching

IL, they also feel librarians should be part of the collaborative process to teach students IL skills. Various statements supporting librarian and faculty collaboration were mentioned throughout the follow-up interviews with faculty, librarians, and administrators. Librarians are viewed to be available to introduce students to library resources and how to use them effectively, but they are not brought into the classrooms to teach source evaluation or critical thinking skills. Furthermore, librarians are not approached by faculty to discuss integrating IL into the classroom. This is also consistent with results reported by Black et al. (2003), Mackey and Jacobson (2004), and Reed et al. (2007). The survey results, along with several remarks made during the follow-up interviews, indicate teaching faculty would be receptive to such collaborative partnerships.

Finally, Cecil College students lack IL skills. Results from the survey indicate that students had relatively little difficulty retrieving information, but students cannot distinguish the credibility of sources they use for research. The survey results are supported by the literature which reported that a majority of community college students did not have adequate IL skills upon entering college (Gandhi, 2005; Groce, 2008; Karas & Green, 2007). Again, the follow-up interviews confirmed these assertions. Students' IL abilities upon entering Cecil College are low or inadequate. Information literacy skills are primarily taught to students during English composition courses (ENG 101), which may include a library instruction session, with reinforcement in subsequent classes (ENG 102) if a student is required to take the class. It is unclear, however, if those skills and abilities are continually emphasized in other courses and disciplines. Therefore, students may not be graduating from Cecil College possessing IL skills.

### **Interview Highlights**

For this study, survey data was supplemented by interviews with a number of Cecil College faculty, librarians, and administrators. A question at the end of the survey asked respondents if they were willing to participate in a follow-up interview and eleven respondents indicated their willingness to participate. Six were randomly selected and contacted to schedule a follow-up interview. The interviews were structured to elicit qualitative data to supplement the survey results. The interviewees were also provided with an opportunity to have a candid discussions regarding IL. Librarians and administrators were also interviewed to seek their knowledge of IL and their input on possible recommendations for establishing an IL program at Cecil College. To ensure the interviewees' anonymity, pseudonyms were created for each participant.

### **Selected Interviews**

Although Cecil College librarians and administrators were interviewed, the interviews conducted with several teaching faculty provided more in-depth comments and perceptions on IL and students' abilities. The primary purpose for these interviews was to gather additional information to supplement the survey results. Each participant has been provided with a pseudonym to protect their identities and assure confidentiality. A summary of selected interviews follows.

**Chris.** Chris is a full-time professor in the Department of English who has been working for Cecil College for more than five years. She currently teaches sections of ENG 101 and ENG 102. Chris believes that students do not understand that IL is a process, and she believes this is common among most students. According

to Chris, “Students don’t equate [IL] to their own process since it doesn’t affect their life... They only see research as an academic process and don’t see its application in real life.” In addition, Chris discussed the difficulty she encounters while trying to convince students that research skills and IL skills are transferable to their personal lives and future careers.

With regard to teaching IL skills, Chris believes it should be integrated throughout the entire curriculum, especially collaborative efforts between librarians and teaching faculty. However, she does understand why teaching these skills fall to the English department, because IL accompanies teaching critical thinking and analytical skills. According to Chris, “The problem is that all the other disciplines tend to say, ‘That’s the English department’s job to bring in the library.’” But Chris also believes the students are missing out on reinforcement of their IL skills being reinforced.

**Fran.** Fran is a part-time adjunct instructor working with the Department of English. She has been working for Cecil College for less than five years, and she teaches ENG 101 and ENG 102. Fran feels her students are acquiring IL skills in her classes, but is concerned they are not learning them in other classes. She teaches first or second year students who either have difficulty conducting research, evaluating and citing sources, or writing critically. However, they are learning “step by step” she states with a smile. “The students are supposed to have these skills when they enter Cecil, but I know they don’t have them coming in and I question how much they leave with.”

Fran believes IL should be stressed as an interdisciplinary skill at Cecil College and not identified or associated with only one department. For Fran,

developing a separate IL class might be a solution because she believes there is an overwhelming amount of material to cover in both introductory English courses. “A separate class completely focused on IL would be ideal, because, right now, it’s competing with [the] writing and analytical skills we’re trying to teach them.” She also believes the library is essential for teaching IL, but does not believe the library should be held solely responsible for educating the students or faculty.

**Pat.** Pat is a part-time adjunct instructor also working for the Department of English. She has been working at Cecil College for more than five years, and she also teaches ENG 101 and ENG 102. Pat defines IL as the ability to understand how to conduct research. However, she believes that students need help developing topics to better comprehend the resources they need as well as the types of sources they need. Pat believes she is accountable for teaching IL as an English instructor. She states, “I hold myself responsible for giving [students] direction and teaching what IL is. It’s just knowledge in a different way.” She also feels every instructor on campus is responsible for teaching IL, including librarians and administrators, especially because they set campus policy.

Pat believes all academic disciplines need to instruct students on the differences between scholarly and non-scholarly information within the context of new technology, the Internet, and social media. More importantly, she feels strongly about teaching students how to distinguish between facts and opinions, which she believes baffles students. In her classes, Pat demonstrates to her students how facts, even though based on research, can be used to skew arguments to support a writer’s position. In addition, she contends that teaching faculty need to understand IL better

so they can teach their students and “take it step-by-step, so they students understand it better and know how to evaluate [information] better.”

**Tom.** Tom is a part-time instructor in the Social Science Department. He has been with the department for less than five years. He has taught at other community colleges and at four-year institutions. For Tom, technology has changed how his students conduct research and he spends class time informing students how to use the Internet and the library databases to find articles that are scholarly or peer-reviewed. Tom said:

I know English is doing some teaching and you hope some of it resonates with the students and hope they can apply it later in your class, but, other than that, you don't get to spend a lot of time discussing [research].

Tom indicated has not had many conversations with colleagues about teaching IL, but he was certain that research skills are being taught throughout campus. He could not support his assertion, however.

Tom was also steadfast that single-session library instruction was not very effective for teaching IL skills, and works best in conjunction with other courses. He discusses IL skills with his students because there is an overabundance of information for the students to absorb in one sitting, and students miss other valuable information if they are absent during those library sessions. Tom states, “My method is to teach, model, have [the students] practice, and then reflect about what kind of information they retrieved. I even do some reflection at the end of the semester to see what worked and what didn't.” Furthermore, he feels students have a handle on IL skills, but these abilities can be easily lost if not reinforced in other courses. For Tom, this was definitely a concern.

### **Additional Comments**

During the follow-up interviews, the interviewees also discussed various topics that the survey was not able to capture. For instance, several interviewees, including librarians and faculty, felt administrators lacked an understanding of IL, but “proceed as if they do.” They also contend that IL has not been a priority at Cecil College, possibly due to the various transitions that have occurred within the library, among the faculty, and at administrative level, which have resulted in IL being forgotten or put on the backburner. In addition, several interviewees blamed budget reductions as a possible reason an IL program has not been developed at Cecil College. One interviewee suggested abandoning the whole IL definition and establishing a “building block” strategy for conducting research, with the student being able to construct a research structure depending on any topic. A “building block” strategy might exist for conducting business research or might exist for researching statistics or might exist for seeking data on petrochemicals, all leading to “building” a research structure/strategy.

The follow-up interviews also provided insight into current trends at community colleges. Several interviewees mentioned developing learning communities in which an instructor would teach a specific subject, an English instructor would teach students proper writing techniques and style, and a librarian would teach research methods and skills. This approach might provide a more comprehensive strategy for incorporating IL throughout the curriculum, but several interviewees felt some instructors would be hesitant about yielding class time to either English faculty or a librarian

### **Common Themes Revealed**

During the interview sessions and later analysis of the transcripts, there were certain common themes that were evident. They are presented in Table 3.2.

Table 3.2 Common Themes from Follow-up Interviews

<b>Themes</b>	<b>Explanation</b>
Students enter college lacking IL skills	Students lack proper IL skills; students have difficulty with research and developing topics; students need help determining sources needed
Students do not equate IL skills with life skills	Students do not view IL as a process; students view IL as an academic practice; IL is not related to their everyday research; students do not see IL as a transferable skill set
IL skills are not being reinforced	Students may have IL skills, but they are not reinforced in other courses; students do not practice IL skills; English courses and Library responsible for teaching IL skills
Integrating IL into the college curriculum	Students would practice IL skills; IL skills reinforced in other disciplines; scaffold learning to teach IL; establish building blocks
Faculty need a better understanding of IL	Faculty are unaware of IL skills; faculty could teach or reinforce IL skills if they understood them; responsibility for IL instruction would not fall solely to librarian or English faculty
IL is not a priority at Cecil College	IL not understood by administration; budget reductions affected hiring and priorities
Establishing learning communities	IL would be integrated; collaboration between discipline faculty, English faculty, and librarians
Library instruction not effective	Single-session instruction not effective; information overload for students; students do not understand significance; librarians should not be solely responsible for teaching IL

Overall, the themes that were detected in the interviews were consistent with what was stated in the literature. There were, however, slight inconsistencies. The teaching faculty differed on whether students arrived at Cecil College with adequate IL skills. While several felt they did not, a few believed students did arrive with some IL skills, but they were lost because these skills were not reinforced in courses outside the English department.

Another theme that had conflicting reactions was teaching faculty awareness of IL. There was no consistent belief that teaching faculty lacked understanding of IL concepts, but there was some disparity regarding their level of understanding. Several interviewees felt that teaching faculty could teach students IL skills if they had a better understanding. They also felt this would alleviate the English faculty and librarians from having sole responsibility for IL instruction at Cecil College.

With regard to library instruction, a few teaching faculty stated that it was not effective for their students. They felt there was too much information given for students to absorb and the students sometimes had no context to attach any significance to learning about IL. Most agreed this was not the fault of the librarians, but the inability of students to see IL as an essential skill. In general, the interviewees had positive comments regarding library services or their interactions with library staff.

Integrating IL into the curriculum was another common theme that surfaced during the interviews. Several teaching faculty believed this would benefit students because IL skills could be reinforced by having the students practice these skills in multiple courses or in various disciplines. While a few mentioned that IL skills could be connected to student learning by using a scaffold approach or creating “building

blocks,” a few interviewees discussed creating learning communities to encourage student learning. They believed this approach would be more beneficial because students would receive content from discipline faculty, while English faculty would reinforce critical/analytical writing skills and the librarians would provide advanced research skills. However, most interviewees felt teaching faculty would be reluctant to relinquish classroom time for IL instruction or collaborating with faculty outside their discipline.

Another common sentiment articulated throughout the interviews centered on IL not being viewed as a priority at Cecil College. Many felt the college administration did not understand IL in terms of student learning or attributed budget reductions for IL declining as a priority. However, the administrators that were interviewed indicated IL was a significant concern at Cecil College.

Two major themes were consistent throughout the interviews. The first was that all of the interviewees agreed that IL skills were not being reinforced and practiced in the courses taught at Cecil College. Several acknowledged teaching or practicing IL in their classes, but they believed it was not consistently done across campus. No interviewee could confidently name an instructor or course where IL is being reinforced besides their own. The second major theme addressed the inability of students to view IL as essential skills that are transferable to everyday life. It was apparent that several interviewees were frustrated. The consensus was that students do not see the need for IL/research skills outside college or, more importantly, in the workplace.

Unexpectedly, neither learning outcomes nor assessment were mentioned during these follow-up interviews. Several interviewees mentioned course-centered

assessment, such as research papers, bibliographies, or quality sources as their guide for measuring students' IL abilities.

Finally, it was clear that the interviewees were enthusiastic about education. They all felt equally responsible for teaching students to become information literate, but they were frustrated about not being able to convince students of the importance of IL. One interviewee, Chris, had a unique insight into this predicament: "If we don't use the word knowledge and explain how it relates to them, then I think we risk the students being overwhelmed by the information. Information needs to be equated to knowledge..."

## Chapter 4

### RECOMMENDATIONS

This executive position paper now presents recommendations for strengthening the current IL instruction program at Cecil College based on data gathered from the literature review, survey results, and interviews with teaching faculty, librarians and administrators. The recommendations are intended to assist Cecil College in enhancing its current instruction program to produce students who are information literate, critical thinkers, and lifelong learners.

As detailed in previous chapters, there is a perception among the teaching faculty that Cecil College students lack adequate IL skills. Currently, IL skills are taught to students during English composition courses, but it is uncertain if those skills are reinforced or emphasized in other coursework or if the students are information literate when they graduate from Cecil College.

This study has focused on improving the IL abilities of Cecil College students as well as increasing faculty-librarian collaboration and enhancing the teaching faculty's knowledge of IL.

#### **Cecil College Information Literacy Model**

I developed a pyramid diagram to represent the six stages I have recommended for strengthening IL instruction at Cecil College. The Cecil College Information Literacy Model (see Figure 4.1) begins with a definition of IL unique to Cecil College, followed by establishing measurable outcomes, conducting library instruction and

course intervention, increasing faculty-librarian collaboration, organizing learning communities, and adopting instruments to measure student learning.

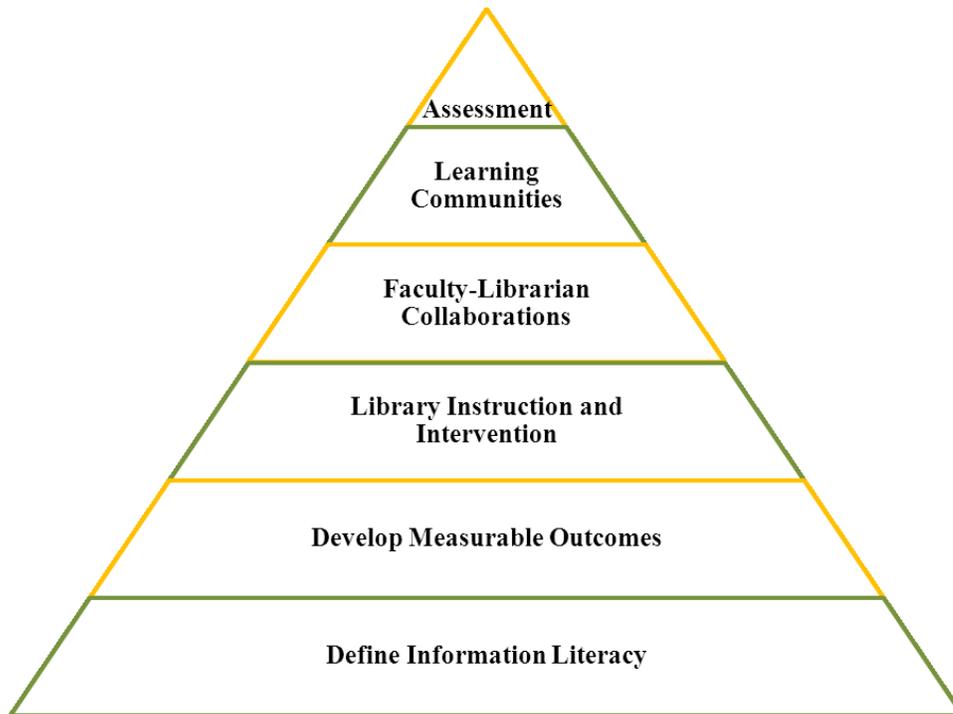


Figure 4.1 Cecil College Information Literacy Model

### **Recommendations**

#### **Define Information Literacy**

First, a definition of IL needs to be developed which reflects the needs of the college and its students. Several IL definitions require individuals to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (ACRL, 2000). These definitions can be used as the basis for initial IL discussions among faculty, librarians, and administrators. The importance of critical thinking needs to be added to an IL definition for Cecil College to ensure

information literate individuals are proficient in the abilities to critically reflect upon and evaluate their own research, the sources used, the information retrieved, and the end product produced. Critical thinking skills must also be included to meet the requirements for English composition courses. Computer or technology literacies, which have their own distinctive abilities and skills, should not be included, but rather aligned with any IL definition for Cecil College.

As indicated by the survey results, the teaching faculty had a divergent concept of IL. The respondents placed significant importance on effectively and efficiently locating information, which conforms to ACRL Standard 2. They also placed nearly equal importance on students' ability to evaluate credible sources, which corresponds to ACRL Standard 3. ACRL Standards 1 and 4 were not considered part of their view of IL. However, several respondents defined IL in terms of avoiding plagiarism.

One theme that emerged from the follow-up interviews was the need for teaching faculty to have a better understanding of IL in order to reinforce these skills across the curriculum. It is evident that teaching faculty lacked a clear understanding of IL as defined by defined by ACRL which continues to be the basis of many IL instruction programs in higher education, including Cecil College.

As discussed in the literature, it is vital for teaching faculty to be involved in discussions aimed at establishing an IL definition (Gullikson, 2006). Not only will this ensure teaching faculty support for a campus-wide definition, but they will also view IL in terms of developing critical thinking abilities, teaching evaluative skills, and discussing plagiarism. Administrative cooperation at Cecil College is also essential for a campus-wide definition, and subsequent initiative, to gain support and become fully established. However, as indicated by the follow-up interviews, IL is not perceived to be a priority at Cecil College. Nevertheless, librarians must have a role in determining a new IL definition as they are the experts on the subject, and can lead discussions on the latest trends and best practices that have been successful at other community colleges. By including input from faculty, librarians, and

administrators, the local needs of the college and students will be addressed and the foundation will be set for an IL plan.

A campus-wide committee established by either the Faculty Senate or appointed by the Vice President for Academic Programs would be the appropriate vehicle for establishing a standardized definition of IL. For instance, a student might have to demonstrate the following abilities to be considered information literate at Cecil College:

1. define and construct appropriate research questions and identify the information needed;
2. demonstrate effective search strategies;
3. identify appropriate resources based on the scope, nature and intent of information needed;
4. locate resources from either an digital, online or physical environment;
5. extract information from appropriate print, online or multimedia resources;
6. critically evaluate information using multiple and appropriate criteria for a variety of formats;
7. comprehend the organization of information and the research process;
8. understand issues regarding intellectual property and copyright;
9. cite sources in an acceptable format; and
10. possess the knowledge to support lifelong learning (ACRL, 2000; Bruce 1999; Bruce, 2002; Catts & Lau, 2008; Eisenberg, 2008; Grafstein, 2007; Sharkey, 2006).

A final IL definition for Cecil College that has been agreed upon by all constituents could be used by academic departments, deans, chairs, and teaching faculty to formulate the benchmarks and strategies need to ensure the students are becoming information literate. In fact, Cecil College can examine Delaware County

Community College (2004) and Chesapeake College (2013) as examples of IL being locally defined.

Cecil College may further wish to prioritize these conditions based on data collected from the survey and literature review to facilitate the understanding of IL by the teaching faculty according to the following grouping: Group 1 (Condition 1, 4, 6, 9); Group 2 (Condition 2, 3, 5, and 8); and Group 3 (Condition 7 and 8). Group 1 could be implemented initially, followed by Group 2 and Group 3. This would correspond with existing beliefs that teaching faculty currently have regarding IL.

### **Develop Outcomes**

Second, Cecil College needs to establish and develop measurable learning outcomes that can be utilized to report on the impact of IL instruction on Cecil College students. Learning outcomes can be designed to provide direction for IL instruction and the methods to build a student's IL skills and abilities. Furthermore, they can provide a progressive structure to build a student's research competency and critical thinking skills. As indicated by the survey results, teaching faculty felt Cecil College students lacked IL skills, especially the ability to evaluate credible sources to use in their research. The follow-up interviews confirmed this view of Cecil College students. Additionally, the feeling that IL skills learned at the freshman level are not reinforced or practiced throughout the curriculum was a recurring theme also identified in the follow-up interviews. Developing learning outcomes could reverse this situation.

More specifically, the outcomes can support the strategic goals of the institution and be aligned with the initiatives discussed in the *Cecil College Strategic Plan 2010-2015* (2010b), which includes a strong emphasis on student completion. In

addition, these outcomes can be developed to reflect the recommendations formulated for Cecil College by MSCHE, such as implementing other qualitative methods for assessing student achievement of learning outcomes. They must, however, be adopted by academic departments with clear and consistent student learning outcomes defined at the program and course levels (Cecil College, 2010b).

These measurable outcomes need to be designed to demonstrate the effectiveness of the IL instruction on student learning and eventually provide measurable data for improvement. More importantly, the results from measurable outcomes can be used by Cecil College administrators, teaching faculty, and librarians for determining priorities with regard to instruction, training, resources, and success. The results can also be used to communicate the benefits of IL. The aim must be to develop appropriate measurable outcomes that can later be assessed.

The learning outcomes must clearly describe the goals and measurable objectives that Cecil College students are expected to learn. Cecil College can look at the New Jersey Institute of Technology's Institute Information Literacy Plan (Information Literacy Subcommittee, 2009) or the Hoover Library Information Literacy Plan (Stricklett & Jones, 2011) for examples of clearly defined learning outcomes. Both institutions have enumerated and defined IL outcomes with detailed descriptions and objectives that are easily understood by students, teaching faculty, and librarians.

Hoover Library has developed graduated learning outcomes that are based on a sequence of library research and IL skills that further expand the basic concepts presented at the freshman level and conclude during the senior seminar or capstone course. The New Jersey Institute of Technology (NJIT) has defined eight IL outcomes

and embedded them in the required courses for each major and academic department. The overall goals of these two IL plans are based on introducing IL at the freshman level and introducing more complex research and library skills, such as advanced search strategies, higher resource evaluation, and more sophisticated critical thinking, as students advance through the curriculum. Upon developing outcomes, they must align with course objectives, department goals, and institutional priorities (Radcliff, 2007). The outcomes must also be measurable so that they can be assessed. Academic departments will need to develop their specific learning outcomes, with faculty and librarians collaborating to establish these outcomes. Curriculum mapping can be used to determine the appropriate placement of IL within a subject discipline curriculum and can be used to establish discipline-specific learning outcomes (Brasley, 2008; Eisenberg, 2008; Hopkins & Julian, 2008). This method ensures a strong faculty commitment that the outcomes are learned in the classroom, especially since the academic departments can play a key factor for motivating student success (Rockman, 2004). As a result, the Hoover Library and NJIT IL plans emphasized the importance of collaboration between various academic and administrative units for successful integration of IL and identified key stakeholders by stating their responsibilities at the library, academic, and institutional levels.

### **Library Instruction and Intervention**

Third, Library Services, which includes the Veterans Memorial Library, librarians and library staff, need to move away from traditional library services and focus more on IL instruction as suggested in the literature (Eisenberg & Head, 2010). Currently, the library's mission is to support teaching and learning at Cecil College. Library Services needs to focus more on becoming an environment that fosters

creativity, discovery, critical thinking, and instruction (Bruce, 2002). Not only will this be consistent with the move to a campus-wide IL program, but it will also promote the institution goals for student success.

The library needs to promote IL to faculty, students, and the community as a core competency for lifelong learning. The survey results revealed that several respondents were either unaware librarians could assist with integrating IL components into their classroom or did not realize librarians were capable of teaching IL skills. In addition, two-thirds of the respondents reported never having discussed integrating IL elements with a librarian at Cecil College. It is evident that librarians are not viewed as instructors by teaching faculty.

To reverse this trend, librarians at Cecil College need to become more visible as teaching librarians. This could be accomplished by involvement in developing measurable learning outcomes to foster a strong campus-wide consensus. In addition, the librarians will have to work collaboratively with faculty to integrate IL components into course curricula and academic departments' learning outcomes. Accomplishing this will require faculty-focused initiatives, such as workshops, conference sessions, online webcasts, or professional readings to embed IL concepts into their classes and assignments (Black et al., 2003).

As previously mentioned, the librarians can recommend and advise academic departments and administrators regarding successful strategies and best practices for implementing IL that have been incorporated successfully at other community colleges. Further information on developing campus-wide IL programs can be obtained from two ACRL documents: *Characteristics of Programs of Information*

*Literacy that Illustrate Best Practices* (2012) and *Guidelines for Instruction Programs in Academic Libraries* (2011).

Nonetheless, Library Services needs to concentrate their efforts on IL instruction. The findings from the survey indicated that several teaching faculty are designing assignments to foster students' IL skills or nurturing students' evaluative skills. However, there is still a reliance on librarians to teach IL using the single-session instruction model. Unfortunately, the literature reported single-session instruction demonstrates research skills without any real connection to the curriculum or course materials, providing a vast amount of IL content which students often fail to retain (Kapitzke, 2003; Marcum, 2002; Sunders, 2007). The follow-up interviews corroborated this assertion. During these interviews, some participants felt their students were overwhelmed by the information presented during the single-session instruction. In addition, the single-session also does not account for students' various learning styles or experiences. Therefore, the library should begin moving away from single-session instruction and concentrate on library sessions that enhance students' research skills.

Sessions focused on IL could also be given to teaching faculty, who in turn could better instruct their students and reinforce these research skills. A number of participants in the follow-up interviews believed this could help to reinforce IL skills beyond the single-session instruction, but only if the teaching faculty had a solid understanding of IL. This could be accomplished by developing IL workshops designed specifically for teaching faculty. The scholarly literature discusses students being more receptive to IL instruction if there is a connection made with course assignments and eventually course grades (Maybee, 2006; Weiler, 2005; Seamans,

2002). Librarians need to add various active learning components, such as financial, medical, personal, or workplace so students can learn to apply or connect IL skills to the students' everyday life information-seeking behavior outside the academic environment (Given, 2002).

Library Services could also develop student-centered workshops or "labs" or mini-instruction sessions that engage students in developing their IL skills (Gandhi, 2004). These sessions could be designed around various topics, such as examining a particular database, searching the Web more efficiently, discussing citation styles, or providing hands-on research experience. Librarians must also develop or adopt self-paced online tutorials, Blackboard modules, or streaming video seminar that focus on IL skills for students, which is consistent with the "retention strategies" stated in the college's Strategic Enrollment Management Plan 2013-2015 (Cecil College, 2013). However, there are several customizable online tutorials that Library Services could utilize at no cost. These include TILT (Texas Information Literacy Tutorial) from the University of Texas, OASIS (Online Advancement of Student Information Skills) from San Francisco State University, and Go for the Gold from James Madison University (Lawrence, 2007). Libraries have utilized these tutorials entirely or adopted partial content to accommodate their individual needs.

Currently, the library provides online guides to assist students' research and affords another mechanism to promote IL. Working collaboratively with full-time teaching faculty and part-time adjunct faculty, the librarians could develop more effective library and research-based assessment tools to measure learning outcomes. In addition, Library Services could partner with Cecil County Public School high

school teachers to offer basic IL workshops or in-service training to enhance their knowledge of IL and improve their students' college readiness.

The role of the current instruction librarian (Librarian for Instruction, Information Technology, and Systems Administration) may need to be restructured to focus on instructional design. A librarian with instructional design experience or responsibilities could work closely with teaching faculty and technology staff to promote information and technology literacies. In addition, an additional instruction librarian may need to be recruited to handle any increase in library instruction. At this point, however, recruiting an additional librarian is not a priority.

Finally, Library Services may need to be placed under Academic Programs and report to the Dean of Academic Programs to better align library services with an academic and instruction focus. Currently, Library Services is under Student Services and Institutional Effectiveness, which includes admissions, athletics, financial aid, and registration, and reports to the Vice President of Student Services and Institutional Effectiveness. Reporting directly to the Dean of Academic Programs would afford Library Services parallel relationships with the academic departments, along with their faculty, to solidify collaborative relationships and develop new ones.

### **Faculty-Librarian Collaborations**

Fourth, collaborative partnerships need to increase between librarians and teaching faculty. These efforts are crucial and will benefit students' learning in addition to being advantageous to both teaching faculty and librarians. Faculty-librarian collaboration promotes curricula that fosters IL and embeds these concepts into courses and assignments. In addition, collaboration between these two groups

will increase librarians' connections with students and lead to improved IL knowledge across campus.

As reported previously, the survey results revealed a lack of collaboration between teaching faculty and librarians, with several respondents reporting that they never discussed integrating IL elements with a librarian. Moreover, any collaborative effort between teaching faculty and librarians was limited and was usually done through single-session instruction. As indicated by the follow-up interviews, librarians are brought to the classroom to introduce students to library resources and how to effectively use them, but are not involved in teaching effective source evaluation methods. Ironically, several interviewees believed librarians should be part of the collaborative process.

By working collaboratively with librarians and their IL knowledge and expertise, it will be easier for teaching faculty to integrate IL components into their courses. Librarians can also provide instructional design assistance to teaching faculty who may be reluctant to integrate IL into their classrooms. As previously reported, one theme that emerged during the follow-up interviews was integrating IL into the curriculum to assist in reinforcing IL skills among students. In addition, collaboration can also take the form of librarians providing assistance in assessing students' progress toward becoming information literate. Developing collaborative partnerships will display the pragmatic and potential contributions librarians can make to the teaching and learning process.

For instance, librarians can assume a more active role with teaching faculty to design assignments that encourage IL. Many researchers have reported that some teaching faculty notice their students are producing better quality assignments and

research papers (Hsieh & Holden, 2010; Karas & Green, 2007; Weiler, 2005) after collaborating with librarians. Some teaching faculty have also reported spending less time advising students on the research process and focusing more on teaching critical thinking skills or content-specific material (Borelli et al., 2009; Gandhi, 2005). In some cases, students view librarians as collaborators in the research process, designing strategies for obtaining information and provide advice on managing the results obtained (Donhan & Green, 2004; Einfalt & Turley, 2009a, Reed et al., 2007). Nevertheless, librarians' confidence in designing learning activities would increase as they continue to collaborate with faculty to foster student-centered learning (Badke, 2005; Brasley, 2008).

More importantly, faculty-librarian collaboration needs to develop to ensure IL concepts are reinforced in the classroom through the use of active learning assignments or by creating active learning environments (Gandhi, 2005). Proactive collaboration between teaching faculty and librarians can be as basic as simply engaging in regular communication to ensure that appropriate library resources are available for students' assignment and research needs (Black et al., 2003). In addition, MSCHE's accreditation standards strongly encourage faculty-librarian collaborations, as well as assessing these partnerships using measurable outcomes (MSCHE, 2006; Saunders, 2007). With Cecil College slated to undergo accreditation in 2015, faculty-librarians collaboration can become the catalyst for strengthening IL instruction campus-wide. The collective expertise of teaching faculty and librarians can enhance student learning by collaborating to strengthen IL concepts and skills and make them transferable beyond the academic environment (Brasley, 2008; Donham & Green, 2004; Gandhi, 2004).

Initially, faculty-librarian collaboration must begin with the English composition courses which are required for all Cecil College students (Hopkins & Julian, 2008). Several English faculty interviewees confirmed this is the preferred method for introducing students to IL. The course (ENG 101) is designed to teach students writing and critical thinking skills, with some IL skills. Librarians can collaborate with the teaching faculty to develop library sessions in accordance with course objectives, as well as design active learning exercises that align with students' assignments. At the conclusion of the course, the students would have a basic understanding of IL to build upon in other courses and comprehend the role of the library in their research. This could be accomplished through a number of assessment instruments, including administering pre- and post-tests immediately before and after a library session.

In addition, faculty-librarian collaborations could lead to more than one library session during an ENG 101 course. As several interviewees confirmed, the common practice is to bring in a librarian only to teach "library skills." Nevertheless, an initial session could instruct students with basic IL skills, with the secondary session focusing on evaluating retrieved information and appropriate citation techniques. The collaborative process would be similar for subject-specific courses, but tailored to meet the learning outcomes, assignments, and instructional needs of the specific course. The library sessions would also be a faculty-librarian collaborative effort to teach students appropriate research strategies for the students' level of knowledge and expertise.

Faculty-librarian collaboration can also involve teaching faculty in the development of the library's print and electronic collection. This interaction can result

in keener faculty awareness of library resources and better communication with librarians, leading to stronger collaborative partnerships. In addition, professional development programs could be developed to familiarize teaching faculty and librarians with emerging technologies and current trends in undergraduate education (Black et al., 2001; Donham & Green, 2004). By collaborating teaching faculty and librarians can forge alliances to engage in and influence the decision-making process (Badke, 2005; Black et al., 2001; Brasley, 2008).

Collaborative efforts must also involve college administrators. Establishing faculty-librarian-administrator collaboration would help secure financial resources to sustain any IL initiative. This would reverse the current belief that administrators do not understand the importance of IL as discussed in several follow-up interviews. As a possible result, this partnership could help obtain vital support from academic departments, departmental chairs, and department faculty to ensure the success of IL on campus.

Finally, Cecil College can seek to establish an alternative collaborative environment by adopting a three-way collaborative model (see Figure 4.2) developed by Einfalt and Turley (2009a), which places students at the center, supported by faculty, librarians, and skills advisers. The interaction among the three participants involves support sessions, consultation guidance, sharing information, and providing essential feedback within the institutional environment (Einfalt & Turley, 2009a). The model aims to provide a better learning experience for students by redefining the support provided to them.

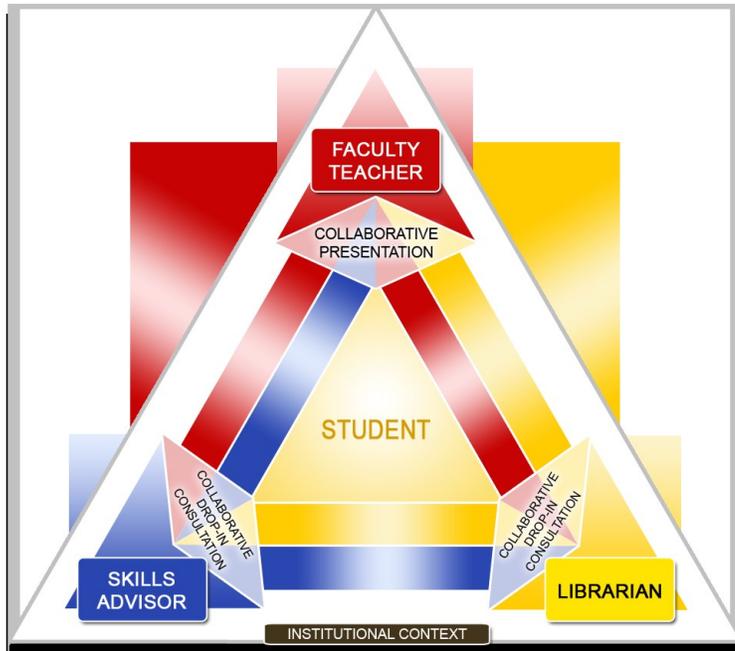


Figure 4.2 Einfalt and Turley Model. Adapted from “Engaging first year students in skill development: A three-way collaborative model in action,” by J. Einfalt and J. Turley, 2009, *Journal of Academic Language and Learning*, 3(2), p. A-107.

Students entering Cecil College may not possess the advanced technological skills needed to succeed academically. To help them gain these skills, a modified version of the Einfalt and Turley (2009a) model would replace the skill adviser with an information technology (IT) staff member as part of the collaborative process (see Figure 4.3). Information technology staff would join teaching faculty and librarians to enhance students’ success. IT staff could offer students technological advice, share technology information, and provide technical support outside the classroom, while providing similar support to teaching faculty and librarians within the classrooms.

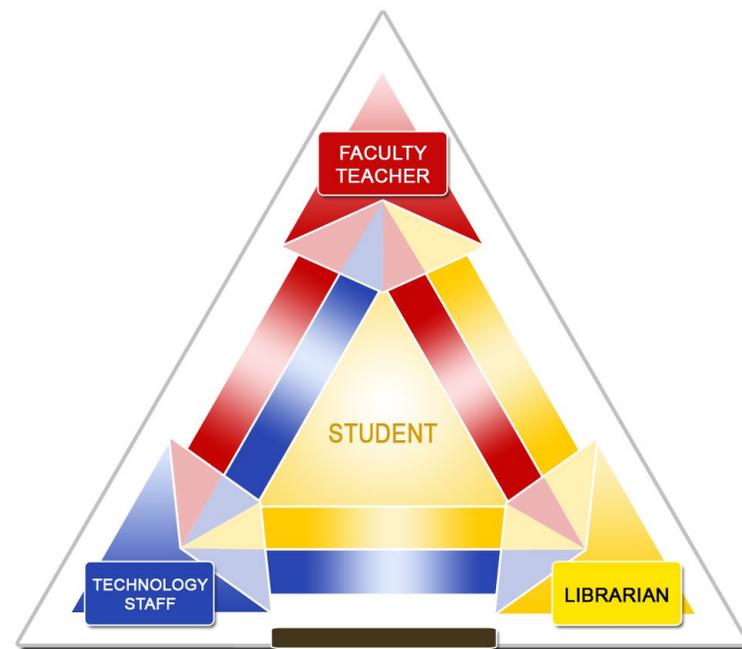


Figure 4.3 Faculty-Librarian-IT Collaboration Model. Adapted from “Developing a three-way collaborative model to promote first year student engagement and skill support,” by J. Einfalt and J. Turley, 2009, *E-Journal of Business Education & Scholarship of Teaching*, 3(2), p. 44.

A faculty-librarian-IT collaboration may necessitate additional funding, resources, and staffing. This alternative collaborative relationship, however, could be beneficial to strengthening IL instruction and ensuring student are information literate.

### **Learning Communities**

Fifth, collaboration across the curriculum can lead to the development of learning communities at Cecil College. Learning communities engage in cross-subject learning and change the manner in which students experience learning (Tinto, 2003; Warren, 2006). Jacobson (2005) has described learning communities to be a collection of courses that are linked together by overarching themes and are taught by

teams of interdisciplinary instructors to cohorts of students. He further believes that community colleges are ideal for the development of team learning networks that bring instructors together for structured peer-learning and improved partnerships across organizations. Collaboration is fundamental to successful learning communities, with students working collaboratively with other students, teaching faculty, IT personnel, and librarians.

During the follow-up interviews, a few participants mentioned establishing learning communities as the possible solution to IL skills not being reinforced or practiced across the curriculum. The concept of learning communities was rarely mentioned in the literature, but several interviewees acknowledged they were aware of the concept being implemented at other community colleges.

Learning communities at Cecil College would require the need to develop new competencies for each learning community which could relate to learning outcomes associated with IL. Developing learning communities at Cecil College would also make it possible to integrate academic courses, occupational skills, and IL content. At Cecil College, learning communities may develop within each academic discipline. Within these learning communities, discipline faculty would supply the subject content while an English instructor would provide the technical writing elements. English instructors could modify the course content to instruct students to write for a specific academic discipline.

In addition, the English instructor and librarians would provide instruction on subject-specific resources, developing techniques to evaluate sources, and appropriate citation methods. Information literacy concepts and critical thinking skills could be reinforced by including English instructors and librarians in these learning

communities. Furthermore, learning communities could also be formulated for the specific needs of student sub-groups, such as developmental clusters or returning students (Jacobson, 2005).

In addition, learning communities could be useful at integrating students into the academic and social life of Cecil College, regardless of whether they are first-year, first-generation, or returning students. These learning communities could also lead to increased retention rates among these groups, which remain a strategic objective for the college (Cecil College, 2013). The Community College of Baltimore County (CCBC) has been successful in establishing learning communities and reported students being more engaged and successful learners (Community College of Baltimore County, 2007). Learning communities become especially beneficial for community college students who do not have residence halls for community-building, who frequently take classes part-time, or who have life demands outside of the institution. Furthermore, increased professional development, improved classroom techniques, and shared knowledge have been reported as results from learning communities (Jacobson, 2005). CCBC (2007) also reported similar results from the connections formed between students and faculty. These connections have benefited the students in attaining CCBC's general education goals, which include the development of IL skills. Moreover, learning communities, as described by Jacobson (2005), have also led to new peer-learning opportunities and improvements to existing programs that connect secondary schools, colleges, businesses, and community organizations.

According to Tinto (2003), learning communities can also promote cognitive development among students by increasing their own knowledge and involving them

in constructing new knowledge. Tinto (2003) also believes that students, faculty, and librarians would develop shared knowledge and shared responsibility by participating in learning communities. Much evidence suggests that learning communities enhance student learning, but they also require significant commitment, effort, and time from the faculty and librarians (Jacobson, 2005; Tinto, 2003; Warren, 2006). Jacobson (2005) also believes community colleges can drive the development of coherent and effective education, and learning communities, if executed well, can lead to higher academic achievement. Finally, developing learning communities at Cecil College aligns with the core values and strategic objectives which are outlined in its 2010-2015 Strategic Plan (Cecil College, 2010b).

### **Assessment**

Finally, assessment is a crucial component of any IL instruction program. Cecil College needs to engage in more meaningful assessment at the institutional level to determine the effect current IL instruction has on student learning. The follow-up interviews lacked discussion regarding campus-wide assessment, but were focused on assessment in the classroom. It was evident teaching faculty are conducting formal and informal assessments of students' IL skills. The methods they employ include research papers, annotated bibliographies, or the credibility of sources. However, there was no consistency among the interviewees regarding which method they use for assessment.

Reviewing assessment data can provide both qualitative and quantitative data on improving an IL program. As previously reported, MSCHE's recommendations for Cecil College suggest the institution seek qualitative measures to determine if students are achieving established learning outcomes. An examination of MSCHE

accreditation standards placed emphasis on goal-based assessment models to determine the quality of education students receive (Gratch-Lindauer, 2002).

Though limited, the survey results can provide an assessment of students' IL skills in the classroom. A majority of respondents suggested students were capable of locating information for class assignments and a slightly equal number indicated that students were unable to evaluate the accuracy and credibility of the information they retrieved. A majority of respondents also believed the IL skills of Cecil College students are insufficient. As discussed earlier, teaching faculty are assessing students' skills using a combination of in-class assignments or activities, which could be dependent on the course, and basing their assessment on how well students performed, which is also dependent on the instructor's own IL skills. It is evident that the assessments of students' IL skills may not be consistent.

Cecil College can either develop or adopt existing assessment tools and customize them to reflect locally established outcomes. Assessment tools could include pre- and post-tests, e-portfolios, and online tutorials and quizzes. Existing methods, such as evaluating course assignments, annotated bibliographies and research assignments, should continue to be used to assess students in the classroom.

Regardless of the assessment methods or tools utilized, the following questions (Delaware County Community College, 2004) must be addressed by the assessment process:

1. What is to be assessed?
2. How will it be measured?
3. How much measurable change has resulted from the intervention?

The purpose of assessment will be to examine and evaluate the current IL instruction program. Like any assessment process, which would include assessment of student learning outcomes, the data collected and analyzed will provide valuable information about the IL instruction program's effectiveness on student learning outcomes. Assessment, however, could be considered a low priority until learning outcomes have been established and after a campus-wide definition of IL has been established.

### **Conclusions**

This study was hindered by a low return rate to the survey administered to the teaching faculty at Cecil College. The results may not entirely describe the perceptions, understanding, and awareness of IL by Cecil College faculty. However, the data collected from the survey, the follow-up interviews, and the literature review contributed to identifying recurring themes that provided the context for the recommendations presented in this executive position paper.

A recent article described the collaboration between librarians and discipline faculty to develop and teach several one-credit seminars for freshmen at Bronx Community College. In the article, Sanabria (2013) described the commitment the institution had to immediately include the library in making IL a strong course component, which is reflected in general education proficiencies. The aim was to increase retention among freshmen and increase their GPAs. After one year, freshman students who participated in these seminars showed significant increases in their average GPAs and the preliminary data revealed an encouraging retention rate.

These positive collaborative results and improvements in retention rates provide some qualitative and quantitative support regarding successful faculty-

librarian collaborations, the importance of administrative support, and prioritizing IL at the institutional level. In addition to the educational institutions previously mentioned in this chapter, I have provided further examples of successful and robust instruction programs reported in the literature (Gandhi, 2004; Lawrence, 2007), namely, Roxbury Community College, Valencia College, James Madison University, SUNY Ulster, and the University of Colorado at Colorado Springs.

Finally, a strengthened instruction program will benefit students' IL knowledge and skills which they will need to discover, retrieve, evaluate, and use information in the 21<sup>st</sup> century. Librarians, teaching faculty, and administrators can view the Cecil College Literacy Model as a guide to prioritize and act. Initially, develop a localized definition of information literacy and formulate appropriate outcomes that tie into the institutional mission. Secondly, increase library instruction and intervention throughout the college curriculum and cultivate faculty-librarian collaborative relationships. Finally, form learning communities and adopt appropriate assessment tools to assess the students' information literacy skills and evaluate their success. In the end, students will be able to think critically and evaluate the validity of the abundance of information they encounter regularly. Ultimately, these abilities and skills will ensure that these students will be lifelong learners.

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## Appendix A

### ACRL INFORMATION LITERACY STANDARDS

#### Information Literacy Competency Standards, Performance Indicators, and Outcomes

##### Standard One

The information literate student determines the nature and extent of the information needed.

Performance Indicators:

1. The information literate student defines and articulates the need for information.

*Outcomes Include:*

- a. Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information need
  - b. Develops a thesis statement and formulates questions based on the information need
  - c. Explores general information sources to increase familiarity with the topic
  - d. Defines or modifies the information need to achieve a manageable focus
  - e. Identifies key concepts and terms that describe the information need
  - f. Recognizes that existing information can be combined with original thought, experimentation, and/or analysis to produce new information
2. The information literate student identifies a variety of types and formats of potential sources for information.

*Outcomes Include:*

- a. Knows how information is formally and informally produced, organized, and disseminated
  - b. Recognizes that knowledge can be organized into disciplines that influence the way information is accessed
  - c. Identifies the value and differences of potential resources in a variety of formats (e.g., multimedia, database, website, data set, audio/visual, book)
  - d. Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)
  - e. Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline
  - f. Realizes that information may need to be constructed with raw data from primary sources
3. The information literate student considers the costs and benefits of acquiring the needed

information.

*Outcomes Include:*

- a. Determines the availability of needed information and makes decisions on broadening the information seeking process beyond local resources (e.g., interlibrary loan; using resources at other locations; obtaining images, videos, text, or sound)
  - b. Considers the feasibility of acquiring a new language or skill (e.g., foreign or discipline-based) in order to gather needed information and to understand its context
  - c. Defines a realistic overall plan and timeline to acquire the needed information
4. The information literate student reevaluates the nature and extent of the information need.

*Outcomes Include:*

- a. Reviews the initial information need to clarify, revise, or refine the question
- b. Describes criteria used to make information decisions and choices

## **Standard Two**

The information literate student accesses needed information effectively and efficiently.

### **Performance Indicators:**

1. The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.

*Outcomes Include:*

- a. Identifies appropriate investigative methods (e.g., laboratory experiment, simulation, fieldwork)
  - b. Investigates benefits and applicability of various investigative methods
  - c. Investigates the scope, content, and organization of information retrieval systems
  - d. Selects efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system
2. The information literate student constructs and implements effectively-designed search strategies.

*Outcomes Include:*

- a. Develops a research plan appropriate to the investigative method
- b. Identifies keywords, synonyms and related terms for the information needed
- c. Selects controlled vocabulary specific to the discipline or information retrieval source
- d. Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books)
- e. Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters
- f. Implements the search using investigative protocols appropriate to the discipline

3. The information literate student retrieves information online or in person using a variety of methods.

*Outcomes Include:*

- a. Uses various search systems to retrieve information in a variety of formats
- b. Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration
- c. Uses specialized online or in person services available at the institution to retrieve information needed (e.g., interlibrary loan/document delivery, professional associations, institutional research offices, community resources, experts and practitioners)
- d. Uses surveys, letters, interviews, and other forms of inquiry to retrieve primary information

4. The information literate student refines the search strategy if necessary.

*Outcomes Include:*

- a. Assesses the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized
- b. Identifies gaps in the information retrieved and determines if the search strategy should be revised
- c. Repeats the search using the revised strategy as necessary

5. The information literate student extracts, records, and manages the information and its sources.

*Outcomes Include:*

- a. Selects among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments)
- b. Creates a system for organizing the information
- c. Differentiates between the types of sources cited and understands the elements and correct syntax of a citation for a wide range of resources
- d. Records all pertinent citation information for future reference
- e. Uses various technologies to manage the information selected and organized

### **Standard Three**

The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

#### **Performance Indicators:**

1. The information literate student summarizes the main ideas to be extracted from the information gathered.

*Outcomes Include:*

- a. Reads the text and selects main ideas
  - b. Restates textual concepts in his/her own words and selects data accurately
  - c. Identifies verbatim material that can be then appropriately quoted
2. The information literate student articulates and applies initial criteria for evaluating both the information and its sources.

*Outcomes Include:*

- a. Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias
  - b. Analyzes the structure and logic of supporting arguments or methods
  - c. Recognizes prejudice, deception, or manipulation
  - d. Recognizes the cultural, physical, or other context within which the information was created and understands the impact of context on interpreting the information
3. The information literate student synthesizes main ideas to construct new concepts.

*Outcomes Include:*

- a. Recognizes interrelationships among concepts and combines them into potentially useful primary statements with supporting evidence
  - b. Extends initial synthesis, when possible, at a higher level of abstraction to construct new hypotheses that may require additional information
  - c. Utilizes computer and other technologies (e.g. spreadsheets, databases, multimedia, and audio or visual equipment) for studying the interaction of ideas and other phenomena
4. The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information.

*Outcomes Include:*

- a. Determines whether information satisfies the research or other information need
  - b. Uses consciously selected criteria to determine whether the information contradicts or verifies information used from other sources
  - c. Draws conclusions based upon information gathered
  - d. Tests theories with discipline-appropriate techniques (e.g., simulators, experiments)
  - e. Determines probable accuracy by questioning the source of the data, the limitations of the information gathering tools or strategies, and the reasonableness of the conclusions
  - f. Integrates new information with previous information or knowledge
  - g. Selects information that provides evidence for the topic
5. The information literate student determines whether the new knowledge has an impact on the individual's value system and takes steps to reconcile differences.

*Outcomes Include:*

- a. Investigates differing viewpoints encountered in the literature
  - b. Determines whether to incorporate or reject viewpoints encountered
6. The information literate student validates understanding and interpretation of the information

through discourse with other individuals, subject-area experts, and/or practitioners.

*Outcomes Include:*

- a. Participates in classroom and other discussions
  - b. Participates in class-sponsored electronic communication forums designed to encourage discourse on the topic (e.g., email, bulletin boards, chat rooms)
  - c. Seeks expert opinion through a variety of mechanisms (e.g., interviews, email, listservs)
7. The information literate student determines whether the initial query should be revised.

*Outcomes Include:*

- a. Determines if original information need has been satisfied or if additional information is needed
- b. Reviews search strategy and incorporates additional concepts as necessary
- c. Reviews information retrieval sources used and expands to include others as needed

#### **Standard Four**

The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

#### **Performance Indicators:**

1. The information literate student applies new and prior information to the planning and creation of a particular product or performance.
2. *Outcomes Include:*
  - a. Organizes the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards)
  - b. Articulates knowledge and skills transferred from prior experiences to planning and creating the product or performance
  - c. Integrates the new and prior information, including quotations and paraphrasings, in a manner that supports the purposes of the product or performance
  - d. Manipulates digital text, images, and data, as needed, transferring them from their original locations and formats to a new context
3. The information literate student revises the development process for the product or performance.
4. *Outcomes Include:*
  - a. Maintains a journal or log of activities related to the information seeking, evaluating, and communicating process
  - b. Reflects on past successes, failures, and alternative strategies
5. The information literate student communicates the product or performance effectively to others.
6. *Outcomes Include:*
  - a. Chooses a communication medium and format that best supports the purposes of the product or performance and the intended audience
  - b. Uses a range of information technology applications in creating the product or

- performance
- c. Incorporates principles of design and communication
- d. Communicates clearly and with a style that supports the purposes of the intended audience

### **Standard Five**

The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

#### **Performance Indicators:**

1. The information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology.
2. *Outcomes Include:*
  - a. Identifies and discusses issues related to privacy and security in both the print and electronic environments
  - b. Identifies and discusses issues related to free vs. fee-based access to information
  - c. Identifies and discusses issues related to censorship and freedom of speech
  - d. Demonstrates an understanding of intellectual property, copyright, and fair use of copyrighted material
3. The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources.
4. *Outcomes Include:*
  - a. Participates in electronic discussions following accepted practices (e.g. "Netiquette")
  - b. Uses approved passwords and other forms of ID for access to information resources
  - c. Complies with institutional policies on access to information resources
  - d. Preserves the integrity of information resources, equipment, systems and facilities
  - e. Legally obtains, stores, and disseminates text, data, images, or sounds
  - f. Demonstrates an understanding of what constitutes plagiarism and does not represent work attributable to others as his/her own
  - g. Demonstrates an understanding of institutional policies related to human subjects research
5. The information literate student acknowledges the use of information sources in communicating the product or performance.
6. *Outcomes Include:*
  - a. Selects an appropriate documentation style and uses it consistently to cite sources
  - b. Posts permission granted notices, as needed, for copyrighted material

## Appendix B

### **BRASLEY'S MODELS OF COLLABORATION**

#### **The Introduction Model**

Students, most often freshmen or transfer students, are taught basic or generic information literacy competencies in such instructional situations as a one- or two-session presentation (“one-shot”), freshman seminars, orientations, first-year composition courses, and introductions to the major. Either librarians or classroom faculty may move proactively to establish contact for IL instructional interventions. After an initial consultation on course and information literacy session outcomes, librarians often teach a segment or multiple class sessions that help students’ complete research-based assignments. Primarily, curriculum is focused on introducing the research process, which treats content areas such as definition of a research question, effective search and retrieval techniques, and evaluation of sources and Websites. This model can be implemented informally or formally, depending on the type of partnership established. Some caution that this model may lead to a false sense that information literacy is complete with the fulfillment of one or two sessions, which is not at all the case.

#### **The General Education (GE) Model**

In this model, information literacy outcomes are integrated into GE goals and also certification and recertification of GE courses. Fulfillment of the IL learning objectives is dispersed throughout the curriculum; librarians can offer curriculum maps to aid in this complex process. Mutual responsibility and potential for collaboration among discipline faculty and librarians are a benefit for this model. However, on the downside IL goals and programming can be set adrift because of the generalized nature of GE courses. It is advisable for a core group to remain in place to oversee the program and keep it viable.

#### **The Learning Outcomes Model**

The learning outcomes model is the major conduit for the collaborative practices that have been discussed thus far. Discipline faculty and librarians working together create departmental disciplinary IL learning outcomes for an academic department. This model also calls for strong faculty-librarian partnership because the librarian must often work with each department to develop learning outcomes and then be prepared to deal with the increased demand for information literacy sessions.

#### **Information Literacy Course Model**

In recent years, librarians have advocated for credit-bearing courses to help students gain information literacy competence. These courses run the gamut from one-credit to four or five unit courses and from standalone to those that are tied to a discipline-based course. Collaborations come in the form of faculty and administrative support for resources and course approval.

#### **Faculty Focus Model**

This model works best with other models and emphasizes creation of supportive tools and approaches to facilitate information literacy development by discipline faculty. This model requires substantial partnership, because the librarians need to skillfully assess what tools faculty need and then develop them. It is important to caution that this model must not be seen as training the faculty; that interpretation will be resented and rejected.

**On-Demand Model**

Aptly described as the prevailing model in most libraries today, the drivers of this model are typically faculty who request information literacy instruction sessions for a course. In some cases, librarians initiate contact as a liaison for a department or program. Faculty who teach a course for multiple years will typically return, allowing librarian and faculty to continuously improve on IL learning outcomes, assignments, and products. Much progress has been made in introducing some students on college and university campuses to this model. Sometimes, informal cooperative relationships blossom into more fully developed collaborations. However, by its nature instruction is episodic and haphazard, offers only one or two minimal learning opportunities (such as 50–120 minutes), and most important is often unsustainable. This model is best used in conjunction with other models to reach the largest number of students at every level of the institution.

SOURCE: Brasley, S. S. (2008). Effective librarian and discipline faculty collaboration models for integrating information literacy into the fabric of an academic institution. *New Directions for Teaching and Learning*, 2008(114), 71-88.

Appendix C

**NIU INFORMATION LITERACY SURVEY**

*Instructions: Please mark the box next to your response.*

**1. How important is it to you that students in your field be information literate?**

Very important

Not too important

Somewhat important

Not important at all

**2. At what grade level is it appropriate to teach information literacy skills in your department? (Check all that apply.)**

Freshman

Senior

Sophomore

Graduate

Junior

Does not apply to my field

**3. Are you teaching any courses this semester that include an information literacy component?**

Yes *If Yes, please list the course in which you include an information literacy component:*

No

\_\_\_\_\_

**4. Do you use any of the following information literacy teaching methods in your courses? (Check all that apply.)**

Assignments designed to develop information-gathering skills

Class session on information literacy  
 Skills given by a librarian

Assignments designed to develop skill in evaluation of information

Other methods. *Please specify:*

Lectures on strategies for gathering and evaluation of information

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**5. How do you assess the students' information literacy skills in these courses?**

Graded assignments

Other methods. *Please specify:*

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Research paper

**6. How interested would you be in collaborating with the University Libraries on developing information literacy components in your courses?**

Very interested

Not too interested\*

Somewhat interested

Not interested at all\*

\*If you checked "Not too interested" or "Not interested at all", please tell us the main reasons why you would not be interested:

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**Please provide us with any other comments that you may about Information Literacy at Northern Illinois University in the space provided below:**

**THANK YOU  
NIU UNIVERSITY LIBRARIES**

**Public Opinion Laboratory  
Northern Illinois University**

## Appendix D

### INFORMATION LITERACY SURVEY FOR CECIL COLLEGE

#### A Survey to Ascertain the Perceptions of Information Literacy at Cecil College

This survey is part of a doctoral project on information literacy. The purpose of this study is to understand faculty views of information literacy and its inclusion in the college curriculum. Your responses to each of the following will only be used for comparative and data analysis purposes.

#### Section I – Information Literacy at Cecil College

- Q1 Can you define information literacy?
- Yes
  - No
- Q2 Based on your knowledge, which phrase(s) best describe information literacy? (Check all that apply)
- Knowing what you need to know
  - Knowing where to find answers (or where to seek assistance)
  - Knowing how to determine if sources are credible/reliable
  - Using the information gained and making it part of one's thinking
  - Using information to achieve a purpose or goal
  - Using information responsibly (avoiding plagiarism, copyright violations, etc.)
  - All of them apply
  - None of them apply
  - I do not have knowledge of information literacy
- Q3 Are you aware of any information literacy skills being taught at Cecil College? (Check all that apply)
- I am aware that they are being taught by some of my colleagues
  - I am aware that they are being taught by the librarians
  - I am teaching the concepts to my students
  - I am not aware that these skills are being taught at Cecil College
- Q4 Have you ever discussed how to integrate information literacy into your curriculum with the librarians at Cecil College?
- Yes
  - No

- Q5 Should information literacy training be offered to Cecil College faculty and instructors?
- Yes
  - No
- Q6 In which situation would you seek assistance from a Cecil College librarian? (Check all that apply)
- Providing an overview of information literacy
  - Providing a library research session for a course
  - Assisting with designing an assignment that incorporates information literacy
  - Assisting with designing a course curriculum that incorporates information literacy
  - Providing technical assistance or support with different software or hardware you use
- Q7 Do you use any of the following methods to teach information literacy in your course(s)? (Check all that apply)
- Assignments designed to develop information gathering skills
  - Assignments designed to develop skills to evaluate information
  - Lectures on strategies for gathering and evaluating information
  - Class sessions on information literacy taught by a Cecil College librarian
  - Other methods (Please specify)
  - I do not use any of these methods to teach information literacy in my course(s)
- Q8 Are you teaching any courses this semester that include an information literacy component?
- Yes (Please indicate the course(s) that include an information literacy component)
  - No
- Q9 How would you assess a student's information literacy skills in your course(s)?
- Graded assignments
  - Research papers
  - Other methods (Please specify)
  - I would not assess their information literacy skills
- Q10 How important is it that your students be information literate?
- Very important
  - Somewhat important
  - Not too important
  - Not important at all
- Q11 Who should be responsible for providing information literacy instruction to students at Cecil College?
- Librarians
  - Teaching faculty and instructors
  - English faculty and instructors
  - All departments and disciplines
  - Team collaboration between teaching faculty/instructors and librarians

Q12 Please add any additional comments:

Q13 Cecil College students are able to determine the appropriate information (articles, books, statistics, etc.) needed to complete course assignments.

Strongly Agree   Agree   Disagree   Strongly Disagree   No Opinion

Q14 Cecil College students are able to effectively locate and retrieve information (databases, Internet, library, etc.) needed to complete course assignments.

Strongly Agree   Agree   Disagree   Strongly Disagree   No Opinion

Q15 Cecil College students are aware of the different resources available to them in the Library or from the Library's website to assist with their research.

Strongly Agree   Agree   Disagree   Strongly Disagree   No Opinion

Q16 Cecil College students are able to effectively evaluate the accuracy and credibility of the information they retrieved for an assignment.

Strongly Agree   Agree   Disagree   Strongly Disagree   No Opinion

Q17 Cecil College students are able to effectively incorporate retrieved information into their assignments.

Strongly Agree   Agree   Disagree   Strongly Disagree   No Opinion

Q18 Cecil College students understand the importance of citing the source of information incorporated in class assignments.

Strongly Agree   Agree   Disagree   Strongly Disagree   No Opinion

Q19 In general, the information literacy skills of Cecil College students are sufficient.

Strongly Agree   Agree   Disagree   Strongly Disagree   No Opinion

Q20 Please add any additional comments:

Q21 Do you wish to participate in a follow-up interview to further discuss information literacy at Cecil College?

- No
- Yes

Please provide the following information:

Name:

Email:

Phone:

### Section III - Demographic Information

- Q22 Please select the rank that best describes your status at Cecil College.
- Faculty
  - Adjunct Faculty
- Q23 Please select your appropriate teaching experience:
- 4 yrs or less
  - 10 - 5 yrs
  - 11 yrs or more

## Appendix E

### **FOLLOW-UP INTERVIEW QUESTIONS**

#### **Interview Questions for Faculty and Adjunct Faculty**

1. How would you define information literacy?
  - a. What is your opinion of information literacy at Cecil College? OR What is your knowledge of information literacy at Cecil College?
  - b. What do you think should be included if you were developing a definition for information literacy for Cecil College?
  
2. According to The Association of College and Research Libraries (ACRL), an information literate individual can “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.”
  - a. Do you think this statement can be used to describe students at Cecil College?
  - b. Do you think that faculty and instructors are aware of the ACRL standards?
  
3. Do you think that incoming students have information literacy skills or do they develop them while they are attending Cecil College?
  - a. Do you think your students have adequate information literacy skills?
  - b. How would you rate your students’ information literacy skills?

4. Do you believe teaching information literacy skills should be integrated into the campus curriculum and be taught throughout campus? OR
  - a. Do you think information literacy should be taught by a particular academic department?
  - b. Should the library be solely responsible for teaching information literacy skills?
  
5. Would you feel comfortable collaborate with librarians to design a course curriculum that includes teaching information literacy skills?
  - a. Are you comfortable with your knowledge of information literacy?
  - b. Are you comfortable teaching information literacy to your students?
  - c. Do you believe that librarians at Cecil College have the skills and techniques to teach information literacy to your students?
  - d. Do you think the “one-shot” library instruction session provides students the basic information literacy skills they will need?
  - e. Do you schedule time to have a librarian teach your class about the library or how to conduct research?
  
6. Cecil College has a diverse student population (i.e., age, race, skill level, abilities, etc.) and serves members of the community (i.e., continuing education). Do you think “information literacy” is the only literacy skills that should be taught at Cecil College?
  - a. Such as visual literacy, health literacy, financial literacy, etc.
  
7. Do you believe students graduating from Cecil College are information literate?
  - a. Do they have the skills to be lifelong learners and function in today’s work environment?
  
8. Ultimately, who do you believe is responsible for teaching information literacy skills at Cecil College?

## Appendix F

### MINUTE PAPER QUESTIONS: 2008-2012

When you hear the word *library*, what comes to mind?  
Do you know what is meant by the term “information literacy”?

What is the most significant or important information you gained from this presentation?  
What questions do you have that was not answered or answered fully?

What does “information literacy” mean to you?  
What instant messenger service(s) do you use?

The most useful topic we discussed today was...?  
Was there anything you would have liked to learn that was not covered today or is there something you would have liked to spend more time discussing?

Briefly describe your past experience with using the library (any library, not just Cecil College). The most useful topic we discussed today was...?  
When an instructor tells me do research, the first thing I think about doing is...

Briefly describe your past experience with using the library (any library, not just Cecil College).  
What instant messenger service(s) do you use?

Have you used any of the databases or ebrary on the Cecil College Library’s web page?  
What instant messenger service(s) do you use?

When an instructor tells me that I have to do research, the first place I look is...  
I use the following instant messenger services: AOL\_\_ Yahoo Messenger\_\_ Jabber\_\_  
GoogleTalk\_\_ ICQ\_\_ Meebo\_\_ None\_\_ Other\_\_

The most useful topic we discussed today was...  
Was there anything you would have liked to learn that was not covered today or is there something you would have liked to spend more time discussing...?

What is the most important information you gained from this orientation?  
Do you have library/research questions that were not answered?  
What do you like/dislike most about the Library tab on MyCecil?

What did you find most helpful about this session?  
What are you still unclear about?

## Appendix G

### IRB EXEMPT LETTER



RESEARCH OFFICE

210 Halliburton Hall  
University of Delaware  
Newark, Delaware 19716-1551  
PA: 302/831-2136  
Fax: 302/831-2828

DATE: March 29, 2011

TO: Michael Gutierrez  
FROM: University of Delaware IRB

STUDY TITLE: [221540-1] Creating a Research Community: Developing an Information Literacy program for Cecil College

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS  
DECISION DATE: March 29, 2011

REVIEW CATEGORY: Exemption category # 1

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office. Please remember to notify us if you make any substantial changes to the project.

If you have any questions, please contact Jody-Lynn Berg at (302) 831-1119 or [jberg@udel.edu](mailto:jberg@udel.edu). Please include your study title and reference number in all correspondence with this office.