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Conceptualization and practice of information literacy instruction in community colleges

April Lynne Anderson
Iowa State University

Conceptualization and practice of information literacy instruction

in community colleges

by

April Lynne Anderson

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Program of Study Committee:
Linda Serra Hagedorn, Major Professor
Larry H. Ebbers
Christine E. King
Patricia Leigh
Jason D. Salisbury

Iowa State University

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DEDICATION

This dissertation is dedicated to my mother, Lynne Anne Persinger Lefler. Mom read to me and was my first teacher who showed me that literacy and learning to learn are important. She led me as others in our long maternal line of critically engaged women by showing me civic engagement is critical through informed voting, personal interrelationship with the community and cultures around you, and being involved in politics – local and beyond – and gathering in protest when necessary.

Mom, although you never had the chance to finish college, you have been my biggest cheerleader in my academic career. You are right … I do belong here!

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ABSTRACT

This interpretive multi-case study methodology was conducted with five sites using interviews, observations, and document analysis to answer two research questions: (1) How do community colleges and their libraries' instructional mission statements/statements of purpose conceptualize and understand information literacy? and (2) How are Information Literacy Instruction Programs providing students information literacy instruction, as demonstrated in classroom information literacy instruction sessions? The problem is that students who graduate with an associate's degree and enter the workforce or transfer to university and have not had IL instruction will be at a disadvantage compared to students who have had access to IL instruction.

It is argued that students need to be information literate in order to fully participate in the academic system. Access to IL instruction in community colleges can vary widely. Some students receive IL instruction in their community college and some do not. The mission or vision statements of the five community colleges studied do not use the words 'information literacy' at all. Not having IL in the mission or policy statements doesn't create a culture where IL is important. All of the sites struggle with faculty buy-in for IL instruction sessions. Some sites have less buy-in than others. Four of the five sites do not have a dedicated space for IL instruction sessions, one doesn't have computers for students to use in the IL instruction sessions. No site has IL instruction for online students.

The common IL instruction at all five programs are 50-70 minute sessions. All IL sessions teach the use of general information sources like Google and databases; the different command languages, protocols, and search parameters for different systems as well as how to

identify keywords for the information needed; find the controlled vocabulary specific to the discipline or information retrieval source; construct a search strategy appropriate for the information retrieval system selected; and use either MLA or ALA style to cite sources. All programs discuss evaluating reliability, validity, accuracy, authority, timeliness, and point of view or bias of potential resources. Those students who do receive IL instruction through the five programs are getting quality instruction.

CHAPTER 1. INTRODUCTION

It is argued that all people need to be information literate in order to fully participate in the society around them; students also need to be information literate in order to fully participate in the academic system. Research shows that information literate students are more likely to be successful in college (Jones-Kavalier & Flannigan, 2008; Patterson, 2009). However, community college students are more likely to start college with lower levels of information literacy (IL) than their 4-year counterparts (Patterson, 2009; Rosselle, 2009; Thomas, 2000). Debora Cheney (2010) found that "students typically use information that finds them rather than deciding what information they need" (p. 46). Students will use the wrong databases or search engines for their topic, search for information in places where it isn't located causing the student to use any information that they find, rather than finding information that they need (Cheney, 2010). Community college librarians can play a crucial role in developing an information literate citizenry by providing IL instruction to students (Patterson, 2009).

We live in an era of technological growth in which a staggering amount of information is created every day (Burkhardt & MacDonald, 2010; Swanson, 2011). At the rate that information is being generated, it is difficult to keep fully informed and up to date on any given topic (Burkhardt & MacDonald, 2010; Cheney, 2010). Evolutionary changes in information access have led to new understandings of literacy, including information literacy (Jones-Kavalier & Flannigan, 2008).

The definition used by Association of College and Research Libraries, a division of the American Library Association states, "Information literacy is a set of abilities requiring

individuals to 'recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ACRL, 2000, p. 2). The Alexandria Proclamation on Information Literacy and Lifelong Learning, adopted at the High Level Colloquium on Information Literacy and Lifelong Learning at the Bibliotheca Alexandrina in Alexandria, Egypt, stated that

> Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations.

Lifelong learning enables individuals, communities and nations to attain their goals and to take advantage of emerging opportunities in the evolving global environment for shared benefit. It assists them and their institutions to meet technological, economic and social challenges, to redress disadvantage and to advance the well-being of all. (IFLA, 2005)

The ALA Presidential Committee on Information Literacy: Final Report (1989) in linking information literacy to lifelong learning stated:

> 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. (n.p)

Elmsborg (2006) expanded IL into the realm of academia with the definition, "Academic information literacy is the ability to read, interpret, and produce information valued in academia – a skill that must be developed by all students during their college education" (p. 196).

Librarians have long held the role of educators of information. Gibson (2008) quoted Otis Robinson's statement from his article in the 1876 edition of *American Library Journal,*

"a librarian should be more than a keeper of books; he [sic] should be an educator … no such librarian is fit for his [sic] place unless he [sic] holds himself [sic] responsible for the library education of his [sic] students" (p. 14). As the keeper of books and information as well as library educator it is logical for librarians to teach their users how to access the information they keep. Academic libraries have a longstanding mission to gather quality materials and information and to share it with instructors and students (Ragains et al., 2009). To accomplish this purpose, librarians need to be educators and to teach the skills necessary to retrieve and use the information students need (Gavin, 2008; Gibson, 2008; Ragains et al., 2009). Information literacy is one "way for college and university libraries to directly support the educational mission of their institutions, align with the institutional goals, and regain some of their historical centrality on campus" (Saunders, 2012, p. 226). Librarians "view knowledge globally, understand how information is disseminated, [and] know the complexities of search tools" (Gavin, 2008, p. 4). Using those skills to critically educate, librarians can assist students to begin to understand the information pipeline, locate useful information, critically examine the information, and use the information effectively. Community colleges have a widely diverse student population.

According to the American Association of Community Colleges (AACC) "Community colleges are the gateway to postsecondary education for many minority, low income, and first-generation postsecondary education students" (2016a). The AACC's 2016 *Community College Fact Sheet* (see Table 1) shows that community college enrollment was 45% of all undergraduate students and 42% of all first-time freshmen. The population of American community colleges students is 57% female, 42% minority,

Table 1. Student enrollment in-state by race and ethnicity

Race	Fall 2015	Fall 2012
White	82%	79%
Black	2%	2%
Hispanic	6%	5%
Asian/Pacific Islander	3%	2%
Two or more	2%	1%
American Indian	0.4%	0.4%
Not reported	5%	11%

(Iowa Department of Education, 2015, Table 5-16, 5-19. Race and Ethnicity)

36% first generation, and is an average age of 28 years old (AACC, 2016b). More than half, 60%, of community college students are enrolled part-time (AACC, 2016b).

Community college students in the rural agricultural state studied are 45% male and 55% female. Full time students are slightly higher at 45%, while part time students are still more than half, at 55% (Iowa Department of Education, 2013, p.5).

Statement of the Problem

Community colleges, with their open-door policy, enroll students from different sociocultural identities with varying academic capabilities. Public community colleges also typically enroll a high proportion of students in need of developmental/remedial education to bring them up to college readiness (Ault, 2002; Rosselle, 2009; Zirkle, 2001). According to Rosselle (2009), over 40 percent of all incoming first-year students at public two-year colleges are unprepared for college-level work (pp. 142). Non-traditional students have a wide range of literacy, "some are not deficient at all; others are somewhat deficient; but others are very deficient" (Thomas, 2000, p. 48). Many community college students are in

transfer programs and will go to a university after their community college graduation. Transfer students, as well as those in career programs, benefit from access to IL instruction (Swanson, 2011).

When discussing challenges to student success, Elmsborg (2006) stated that "one of the primary challenges for contemporary education is to find ways to make it possible for all students to succeed, not just those socially preselected for academic success" (pp. 194). Information literacy instruction, one of the foundations for lifelong learning (IFLA, 2005), is one way to help students succeed (Patterson, 2009; Rosselle, 2009; Thomas, 2000). Information literacy is important for community college students to be able to do their assignments and excel in their classes and programs as well as for retention from start of program to graduation or transfer (Blackburn, 2010; Patterson, 2009). Mark Emmons (2006), who offers ideas for teaching IL to incoming freshman in the chapter *Tailoring instruction for college and university freshman*, found that while students who grew up with technology had "superior technology skills, … they often lacked the skills to find, evaluate, and use information in an academic setting" (p. 35-36). Having access to technology does not mean a student is digitally literate.

Giving students access to IL instruction creates a foundation of lifelong learning that will benefit them throughout their academic career (Blackburn, 2010; Patterson, 2009; Rosselle, 2009; Thomas, 2000) and beyond. Students who are able to critically examine information to better understand how the information was created, who created it, why it was created, who owns it, and so on are more likely to succeed at their academic goals, as well as having the skills to use for critically examining information in the rest of their life.

Access to IL instruction in community colleges can vary widely. Students who have not had access to IL instruction are more likely to just use whatever information is readily presented to them without knowing how to look further, or that they even need to do so. If a community college's goal is to help students succeed and to teach students for lifelong learning, then IL instruction is crucial. The problem is that students who graduate with an associate's degree and enter the workforce or transfer to university and have not had IL instruction will be at a disadvantage compared to students who have had access to IL instruction.

Purpose

The purpose of this multi-case study is to understand how community college libraries, in a Midwest state, conceptualize and practice IL instruction. To find out how students are being served and what skills are being taught, through observation of IL instruction sessions and interviews with librarians.

Research Questions

The over-arching main question driving this study is: How is information literacy (IL) conceptualized and practiced in community college libraries? To help understand the main question are two sub-questions.

Question one. How do community colleges and their libraries' instructional mission statements/statements of purpose conceptualize and understand information literacy?

1. How do the college and library's mission and vision statements describe information literacy and lifelong learning?

2. How do the college and library's mission and vision statements help inform the culture of information literacy instruction?

Question two. How are Information Literacy Instruction Programs providing students information literacy instruction, as demonstrated in classroom information literacy instruction sessions?

1. What are the common indicators of information literacy from the *ACRL Information Literacy Competency Standards*?

2. What are the common characteristics in the different information literacy instruction programs?

3. How do the IL instruction programs assess student learning, if at all?

Conceptual Framework

This study was framed using the American College and Research Libraries (ACRL) *Information Literacy Competency Standards for Higher Education* (ACRL, 2000). The *ACRL Information Literacy Competency Standards* were approved on January 18, 2000, at the Midwinter Meeting of the American Library Association, by the Board of Directors of the Association of College and Research Libraries (ACRL) and endorsed by the American Association for Higher Education in October, 1999 (ACRL, 2016).

The *ACRL Information Literacy Competency Standards* are:

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

2. The information literate student accesses needed information effectively and efficiently.

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

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

5. 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. (ACRL, 2000, Section 7)

This researcher chose to use the *ACRL Information Literacy Competency Standards* because they are the standards used by the American Library Association which "is the oldest and largest library association in the world" (ALA, 2016).

Definition of Terms

All terms defined for this research are discussed in depth in the literature review in Chapter 2.

Academic Literacy: "We define academic literacy as the necessary skills, practices, and attitudes for successfully engaging oneself within the academic community and ensuring continued academic progress" (Gordon College). "In [higher education] the primary purpose of information literacy interventions is to enable students to independently seek information and use it appropriately and conform to academic information norms. One could call this 'academic information literacy' " (Hepworth, n.d.).

Critical Information Literacy: Elmsborg (2006) defined critical information literacy as "more than a set of acquired skills. It involves the comprehension of an entire system of thought and the ways that information flows in that system. Ultimately, it also involves the

capacity to critically evaluate the system itself" (p.196). Simmons (2005) said "Critical information literacy is a deliberate movement to extend information literacy further than the acquisition or the research skills of finding and evaluating information" designed to challenge the ideas of what is knowledge, who owns information, how is information managed, and whose information is privileged over others and why (pg. 300).

Information Literacy: *"*A set of abilities requiring individuals to 'recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information'" (ACRL, 2000p. 2).

Significance of the Study

This research contributes to the existing literature on information literacy instruction by showing actual practice in community colleges in a single region. Discovering the conceptualizations and practice of information literacy instruction actually implemented in a sample of rural community colleges allows community college administration to see how some different programs practice IL instruction in order to inform policy. This study also allows community college librarians to see how IL instruction is implemented in other locations. This study attempted to fill a void in the literature regarding IL instruction practice in rural community colleges. There have been similar multi-case studies conducted in different regions using a university setting, but none, that the researcher found, in the community college setting.

Delimitations and Limitations

This study was delimited by a single region in the Midwest as well as by the specific academic fields based on the research questions. Only librarians involved in implementation

and teaching of information literacy instruction were interviewed. All other faculty, administrators and students were excluded.

The limitations of this study are that it was conducted in a single region of the Midwest. The data was collected over one academic year. Only librarians were interviewed. The study is also limited to observation in English Composition courses, which were chosen because they are the most likely course to require a research paper.

Summary

This dissertation is comprised of a five-chapter document. This first chapter introduces the problem, outlined the research questions, and presented a brief overview of the methods and theory. Chapter 2 includes an in depth review of the literature. Chapter three, the methods section, explains how the research was conducted, the data collection procedures, the data analysis procedures, and what frameworks were used to analyze the data. Chapter 3also discusses the participants more fully. Chapter 4 presents the data and offers analysis. Data are presented and analyzed by question. First the data is presented and described by individual institution and then analyzed using a cross case analysis. Chapter 5 offers a discussion of the analysis and the conclusion.

CHAPTER 2. LITERATURE REVIEW

*"Life-long learning is impossible without basic information literacy, and it is
the library, any library, that is responsible for educating its patrons or
students in information retrieval, critical thinking, and evaluation of sources"*
(Thomas, 2000, p. 55)

Community College Students

Community colleges have a complex and diverse student population. Community

colleges have a large percentage of students who are part-time, non-traditional, first-

generation, multi-cultural/multi-ethnic, work at least part-time, and have plans to transfer to

university (AACC, 2014). In the fall of 2012, almost half of all undergraduate students, 45%,

attended a community college (AACC, 2014). The number of first-time freshman that

attended a community college in that same year was 42% (AACC, 2014).

More than half, 60%, of community college students are enrolled part-time while only

40% are enrolled full-time (AACC, 2014). Non-traditional students are students who do not

enter college directly out of high program (Thomas, 2000). The National Center for

Education Statistics says that "Nontraditional status is based on the presence of one or more

of seven possible nontraditional characteristics. These characteristics include older than

typical age, part-time attendance, being independent of parents, working full time while

enrolled, having dependents, being a single parent, and being a recipient of a GED or high

school completion certificate" (NCES, n.d.). First-generation students are 36% of

community college students (AACC, 2014). First-generation students are defined as those

who do not have an immediate family member with post-secondary educational experience

(Nomi, 2005). Data reveal that 40% of full-time students are employed part time and 41% of

part-time students are employed full time (AACC, 2014). Table 2 shows the percentage by

Table 2.   Students by race and ethnicity, 2011-12 academic year

| Race and Ethnicity | Undergraduate students taking online classes | | | | Total Enrollment Fall, Public 2yr |
| | # (in thousands) | | % | | % |
	Total students	Any online	Within race	all online students	Distribution of U.S. residents
White	13,345	4,472	33.5	60.7	56.1
Black	3,709	1,214	32.7	16.5	15.5
Hispanic	3,696	1,032	27.9	14.0	19.1
Asian/Pacific Islander	1,410	371	26.30	5.0	6.1
American Indian/Alaska Native	209	68	32.6	0.9	1.1
Two or more races	686	210	30.6	2.9	2.1
	23,055	7,368			

http://nces.ed.gov/programs/digest/d14/tables/dt14_311.22.asp?current=yes
http://nces.ed.gov/programs/digest/d14/tables/dt14_306.20.asp

ethnicity of community college students. Data from Fall of 2012 reveal that community colleges enroll 59% of all Native American undergraduate students, 56% of all Hispanic undergraduate students, 48% of all Black undergraduate students, as well as 44% of all Asian/Pacific Islander undergraduate students (AACC, 2014). In 2013, 24.6% of community college students in one Midwest state transferred to a four-year university (Annual Condition of IA CC, 2013).

Community colleges have had as a central mission preparing students to transfer to the four-year university since the first community college (Bailey & Morest, 2006, p. 260). Of students who had received an AA degree 55.2% of 2002 award recipients had transferred to a four-year university within the first year (Laanan et al., 2007, pg. 23). More than 60 percent of students who transferred from two-year schools in the 2005-2006 academic year obtained degrees at four-year institutions (Newbaker, 2013). Another eight percent remained

in college and were still working on a four-year degree six years after transfer (Newbaker, 2013). "After eight years, the transfer students who started at a two-year institution and subsequently transferred completed at the rate of 73.5 percent, while those who began at a four-year institution completed at a rate of 63.2 percent" (Newbaker, 2013). In the article, *Looking through the rearview mirror: Factors affecting transfer for urban community college students,* Hagedorn, Cypers, and Lester (2008) noted that "students' lack of academic preparation, familiarity with academic systems, and financial pressures are cited as the dominant reason for low transfer rates" (p. 648). Hagedorn et al. (2008) found that "when it comes to unlocking the transfer door, academics and academic persistence are the keys" (pp. 660). Blackburn (2010) stated that "giving students the skills to cope with the research demands of higher education, they are more likely to succeed" (p. 25). Information literacy instruction, which assists students to succeed in their courses, can help students be more academically prepared for their transfer journey.

Information literacy helps bring equity in education (Patterson, 2009; Rosselle, 2009). "Community college students, who are on the average, least likely to succeed in higher education, especially need IL [information literacy] that is vitalizing and that leads toward equity" (Patterson, 2009, p. 346). "Information literate community college students who are regularly asked to interpret, process, and apply information are better able to translate concepts into competencies that will support their professional and personal needs" (England & Pasco, 2005, p. 69). Teaching a student how to find and evaluate quality information helps build a foundation of skills they can use in their further education and life.

Distance education

Community colleges are also evolving in their instruction needs and practices. In the last decade the amount of online or distance education courses and programs at community colleges have expanded. Distance education is also called online education. According to Johnson and Mejia (2014), "Online courses are those in which at least 80 percent of the instruction is Internet-based. These courses are accessed online through the Internet" (p. 4). Community colleges traditionally have a large population of students who are low income or minorities, many of whom have less access to high speed internet at home or access the internet through mobile devices with data plans (Rideout & Katz, 2016).

For the 2011-2012 academic year, the percent of public community college students who took online courses, 34%, was only slightly higher than the percent for all public undergraduate students at 32% (IPEDS. Table 311.22). In fall 2013, the overall percentages dropped but the difference in percent between all undergraduate students and community college students grew by 1%; the total percent of undergraduate students in online courses was 25%, while 28% of community college students enrolled in online courses (IPEDS, Table 311.15).

The distribution of undergraduate students by race and ethnicity taking online courses closely mirrors that of the overall distribution of students in public 2-year institutions for most ethnicities and races except for White and Hispanic (see Table 2). The percentage of White students who were enrolled in at least one online course in fall of 2011 was 60.7%. This is higher than the percent of White students enrolled in 2-year institutions, at 56.1% overall. Hispanic students, 19.1% of all students enrolled in a 2-year public institution in fall

2011, were only 14.0% of students enrolled in at least one online class in that same time period. Librarians "are having to 'think outside the library' and come up with new and innovative ways to meet the needs of these unique users" (Ault, 2002, p. 40).

After surveying 76 undergraduate and graduate students, Zirkle (2001a) found that distance education students were comfortable with their online classroom but "felt that library materials were not always available or they were uncertain as to how to obtain them" (p. 75). Embedding a librarian in an online class can help students gain access, an embedded librarian gives the online students a direct contact in the library to give library assistance as well as teaching students how to access information. In the "Embedded Program," at the Community College of Vermont, the embedded librarian has a direct link on the discussion forum for conversations with the librarian, for students to request resources, and for librarians to provide more resources (Matthew & Schroeder, 2006).

In a survey of 363 distance education students, Van de Vord (2010) found that "…college students, particularly distance students, are dependent on the web for research purposes" (pp 173). Van de Vord (2010) further stated that the "…same students, however, do not possess the evaluative skills to critically assess the actual credibility of the information they locate online" (pp. 173). In a study on faculty perspectives, Saunders (2012) found that faculty believe that just because students are 'digital natives' that they "are not particularly adept at searching for and finding information" (p. 230). One participant in the Saunders (2010) study "indicates that students perceive themselves to be better searchers than they actually are" (p. 230). In an article by Haynie (2015) that discusses graduation rates for online students reported that "that course completion rates averaged three to five percent better for on-campus courses than for online courses." Students have to be more disciplined

to succeed in an online class than in a face-to-face class and students who are unable to maintain discipline with the course are more likely to drop out of the class (Haynie, 2015). Students in online classes are dropping out of classes at a higher rate than their on-campus peers in part because they do not have the same support as a face-to-face class (Haynie, 2015). The Jaggars, Edgecombe, and Stacey (2014) research overview titled, *What we know about online course outcomes* stated "…CCRC's studies suggest that community college students who choose to take courses online are less likely to complete and perform well in those courses. The results also suggest that online courses may exacerbate already persistent achievement gaps" (p. 5). Information Literacy instruction is one way to help support online students. Online students need to have access not only to the library itself but to information literacy instruction (Ault, 2002; Zirkle, 2001). Community college librarians inquire how to best serve the growing population of distance education students.

Information literacy instruction at the community college library shows students how to make use of the library's website (Patterson, 2009) as well as how to better use the internet. However, if the faculty for the online classes are not encouraging their students to use the library, it is less likely the students can take advantage of information literacy instructions that the librarians offer. Out of sixty-two ARL [Association of Research Libraries] that provide library services to the distance users, 64% (40) do not have a way to get a list of their registered distance patrons (Yang, 2005, p. 95). In other words, librarians do not know how to reach those users in a more personal way. Clearly, access to information is important to both students and librarians.

Developmental education

Developmental courses are often taken by non-traditional students and students with low-educational equity to refresh or further their previous education and prepare them for college level work. Community colleges are open-access institutions that enroll a high proportion of students in need of developmental/remedial education to prepare them for college readiness. Students who have specific information literacy instruction perform better in classes and have greater knowledge retention (Johnson, 2009; Raigans et al., 2009; Wang, 2011). For the purposes of this paper, developmental education student or developmental student means a student in need of developmental or remedial education to prepare them for college level courses.

Many community college students entering a program for the first time are unprepared for college-level course work. "Close to 30 percent of all incoming freshman are in some way inadequately prepared for college-level work. This percentage is over 40 percent at public two-year colleges" (Rosselle, 2009, p. 142). There is also unevenness in college preparedness among students who do not enter college directly out of high program, what are known as 'non-traditional students,' "not all non-traditional students are functionally illiterate. To be sure, some are not deficient at all; others are somewhat deficient; but others are very deficient" (Thomas, 2000, p. 48). Information literacy instruction at the community college prepares students to succeed at the community college and beyond (England & Pasco, 2005).

Information literacy instruction can assist students to feel more at ease with their program work and boost their academic self-esteem. "If a developmental student does not acquire information skills at the library or at least use the library, he or she may be more

likely to drop out of program" (Thomas, 2000, p. 53). Further, "[c]ommunity college students, who are on the average, least likely to succeed in higher education, especially need IL [information literacy] that is vitalizing and that leads toward equity" (Patterson, 2009, p. 346). Information literacy instruction is an important part in helping students succeed in their educational journey.

Thomas (2000) explained that, "Developmental students who learn to use the library may develop better self-esteem and become academically motivated. They are likely to succeed and excel, even, in college-level courses" (p. 54). Community colleges are open access institutions; they enroll numbers of students who are in need of developmental or remedial education in any number of areas, including information literacy (Thomas, 2000). Library instruction and information literacy instruction are important for all students, but for students in developmental education, information literacy can make the difference between success and failure (Thomas, 2009). Information literacy to students in developmental education is not widely researched.

Literacy

Since the turn of the 21st century, the general definition and understanding of literacy has changed. Jones-Kavalier and Flannigan (2008) explained that "prior to the 21st century, literate defined a person's ability to read and write, separating the educated from the uneducated" (para. 1). The National Literacy Act of 1991 defined literacy as "[a]n individual's ability to read, write and speak in English, and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one's goals,

and to develop one's knowledge and potential" (The Talking Page Literacy Organization, 2007).

Jones-Kavalier and Flannigan (2008) explained the need for a new definition of literacy, "In our 21st century society – accelerated, media-saturated, and automated – a new literacy is required, one more broadly defined than the ability to read and write" (para 3). It is not simply enough anymore to be able to read and write, the new definition of literacy incorporates digital and visual literacy. Digital literacy includes computer literacy. Visual literacy is being literate about symbols and images. Jones-Kavalier and Flannigan (2008) explained further that "…literacy includes the ability to read and interpret media (text, sound, images), to reproduce data and images through digital manipulation, and to evaluate and apply new knowledge gained from the digital environments" (para. 11). Jones-Kavalier and Flannigan (2008) wrote, "…[l]iteracy, in any form, advances a person's ability to effectively and creatively use and communicate information" (para. 13). The different forms of literacy that are also important in understanding information literacy are digital literacy and academic literacy. Much of the information available today requires internet access to access. Having digital literacy helps students be able to access information on a digital platform. Academic literacy is important for students to understand the language and literacy culture of the academic institution. While the different literacies discussed are intertwined in many ways and it is important for students to have digital literacy and academic literacy, they are added in this review to help put information literacy in context rather than being part of the final data.

Digital

The digital divide can be defined as the gap between having access to technology and not having access, and can also be defined as knowing how to use technology to its fullest or only having a basic understanding of the use. *Exploring the notion of 'technology as a public good'* by Watson and Mulvihill (2011) explored the digital divide in East Asian countries and education. Watson and Mulvihill (2011) discussed what is meant by digital divide, "The term digital divide, [is also] often referred to as 'information gap' or 'information inequity' … is the unequal attainment of information and communications technology by some members of society and the unequal acquisition of related skills" (p. 41). In the article *Knowledge and processes that predict proficiency in digital literacy,* Bulger, Mayer, and Metzger (2014) stated that "…proficiency in digital literacy refers to the ability to read and write using online sources, and includes the ability to select sources relevant to the task, synthesize information into a coherent message, and communicate that message with an audience" (abstract). A report produced by the Sesame Workshop about technology use in low-income families stated "among families living below the median income level, one in five connect to the Internet only through a mobile device—a clear hindrance for students trying to research and write papers or complete online work" (Rideout & Katz, 2016, p. 39). Students without digital literacy will not have access to the full use of digital technology.

Information and technical literacy is more important than ever in order to gain access to high paying jobs. In the chapter, *Epistemic value theory and the digital divide*, Fallis (2007), stated that "…access to information technology is a necessity of modern life. … it has been suggested that information technology is a basic human right" (p. 31). Education and technology are becoming more hand-in-hand in the twenty-first century. Sadly,

technology access is not an equitable reality in all places. According the Pew Research Center, in 2015, 84% of all American adults, 85% of people in urban and suburban areas, and 78% of people in rural areas used the internet. Part of the low numbers in rural areas are the demographics of the population; some factors related to lower internet use are age, low income, and lower educational attainment which are often factors in rural areas (Pew, 2015).

Minority students, low-income students, and rural students often have less access to technology at home. Students with less access to a computer or internet in the home are not as likely to have "the skills necessary to use computers and the internet" (Gorski, 2009, p. 354). Warschauer, Knobel, and Stone (2004), explained that: "Although home access to computers has long been regarded as important for supporting students' academic achievement, research suggests that home ownership of computers alone does not level out the inequalities in terms of technology's contribution to student learning" (p. 563). Even though a student may have access to a computer does not mean that student has access to high speed internet, has had digital education or has digital literacy.

The wealthy have better access, better technology and more education on the uses of the technology. How computers are used in education in the schools differs in high-poverty schools than in low-poverty schools. "Students in high-poverty schools are more likely to use computers and the internet for rote learning, whereas their peers in low-poverty schools use them for higher-order thinking activities" (Gorski, 2009, p. 354). Teachers in high-poverty schools are also not as likely to be trained to teach technology use to their students. Having access to a computer does not necessarily mean a student will have internet access, or know how to use the computer in such a way so as to further their education.

Academic

Academic literacy, as defined by the Adolescent English Language Learners Literacy Advisory Panel, "includes reading, writing, and oral discourse for program; varies from subject to subject; requires knowledge of multiple genres of text, purposes for text use, and text media; is influenced by students' literacies in contexts outside of program; and is influenced by students' personal, social, and cultural experiences" (Short & Fitzsimmons, 2007, p. 8). A student would be considered to have academic literacy if they are able "to independently seek information and use it appropriately and conform to academic information norms" (Hepworth, n.d.). In the introduction to *Defending the community college agenda,* Bailey and Morest (2006) discussed that "…equity in education depends on both strengthening every student's chance to become 'academically prepared' and enhancing their chances of achieving success once they are enrolled" (p. 2). Noting that educational barriers are often a struggle for low-income and minority students who "have less access to high-quality secondary education that would prepare them for college" (Bailey & Morest, 2006, p. 2). Neeley (2005) defined academic literacy as "…ways of thinking, reading, speaking, and writing dominant in the academic setting; involving ways of receiving knowledge, managing knowledge, and creating knowledge for the benefit of a field of study" (pg. 8). Students who don't have the benefit of having had 'high-quality secondary education' which prepared them for college are not going to have the language to understand the academic discourse needed to succeed in college.

Information

According to Grassian and Kaplowitz (2001), information literacy "was first coined

by Paul G. Zurowski" in 1974 (p. 4), who wrote:

> People trained in the application of information resources to their work can be
> called information literates. They have learned techniques and skills for
> utilizing the wide range of information tools as well as primary sources in
> molding information solutions to their problems. The individuals in the
> remaining portion of the population, while literate in the sense that they can
> read and write, do not have a measure for the value of information, do not
> have an ability to mold information to their needs, and realistically must be
> considered to be information illiterates. (p. 6)

Jones-Kavalier, and Flannigan (2008) discussed the importance of information literacy, "In

the end, it seems far better to have the skills and competencies to comprehend and

discriminate [good information from misinformation] within a common language than to be

left out, unable to understand" (para. 15).

The Association of College and Research Libraries (ACRL) is a division of the

American Library Association (ALA), representing 11,000 academic and research librarians

and interested individuals (ACRL, 2016). The *Information Literacy Competency Standards*

for Higher Education were approved by the ACRL Board of Directors at the ALA Midwinter

conference on January 18, 2000. The definition of information literacy created by the ACRL

in 1989 is still in use today: "Information Literacy is a set of abilities requiring individuals to

'recognize when information is needed and have the ability to locate, evaluate, and use

effectively the needed information'" (ACRL, 2000, p. 2). The *ACRL Information Literacy*

Competency Standards stated that an information literate individual is able to:

1. Determine the nature and the extent of information needed
2. Access the needed information effectively and efficiently
3. Evaluate information and its sources critically and incorporate
   selected information into one's knowledge base

4. Use information effectively to accomplish a specific purpose
5. Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally. (ACRL, 2000, Section 7)

In an article about faculty perceptions of IL for students Saunders, (2012) found that the baseline for student "competences identified by participants center mostly on the location, access, and basic evaluation of information" (p. 231).

Information literacy has many definitions. There are definitions that include technology literacy, media literacy, visual literacy, digital literacy, and others that talk include multiple forms of literacy (Jones-Kavalier & Flannigan, 2008; Kenton & Blummer, 2010). However, most library associations around the world do not include these other types of literacies in their definition of information literacy.

Library organizations from around the world have definitions of IL that are similar to the definition used by the ACRL. The Society of College, National and University Libraries (SCONUL) in the UK and Ireland define information literacy as: "Information literate people will demonstrate an awareness of how they gather, use, manage, synthesise and create information and data in an ethical manner and will have the information skills to do so effectively" (SCONUL, 2011). The Chartered Institute of Library and Information Professionals (CILIP) defined information literacy in 2004 as "knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner" (CILIP, 2013). The definition adopted at the High Level Colloquium on Information Literacy and Lifelong Learning at the Bibliotheca Alexandrina in Alexandria, Egypt stated that:

Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to

achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations.

Lifelong learning enables individuals, communities and nations to attain their goals and to take advantage of emerging opportunities in the evolving global environment for shared benefit. It assists them and their institutions to meet technological, economic and social challenges, to redress disadvantage and to advance the well being of all. (IFLA, 2005)

These definitions all have the need to access information, accessing information, evaluating information, and using information as key points in common. While this not a list of all the library organizations or IL definitions used globally, it is a small selection of organizations that are similar in nature and are located in English speaking countries.

Critical information literacy theory

Critical information literacy theory has its origin in the critical theory of Paulo Freire. If critical theory is about personal empowerment through knowledge and critical literacy theory is about the critical reflection of the "significance of language" (Freire, 1985, p. 50) then it follows that critical information literacy is the critical reflection, evaluation, and use of information to create personal knowledge. Simmons (2005) explained that "…critical information literacy is a deliberate movement to extend information literacy further than the acquisition of the research skills of finding and evaluating information" (pp. 300).

Elmsborg (2006) stated that, "If literacy is the ability to read, interpret, and produce texts valued in a community, then academic information literacy is the ability to read, interpret, and produce information valued in academia – a skill that must be developed by all students during their college education" (pp. 196). The *ACRL Information Literacy Competency Standards* for Higher Education have more focus on teaching and learning the

skills of finding information and evaluating it for reliability, but not as much focus is put on teaching critical evaluation of information (ACRL, 2001?).

Critical information literacy goes beyond learning search skills and using the information found to create an academic paper. Elmsborg (2006) explored information literacy using the lens of critical literacy theory, "…information literacy, seen in this way, is more than a set of acquired skills. It involves the comprehension of entire system of thought and ways information flows in that system" (pp. 196). Elmsborg also stated that, "For information literacy to have a critical dimension, it must involve both an understanding of how various classification systems work, and also an understanding of how they create and perpetuate such powerful categories for representing "knowable reality and universal truth" (p. 197).

Critical information literacy involves an understanding of the languages used in different search engine and database systems, as well as an understanding of what agenda those systems have in creating, maintaining, and sharing information. Cope (2010) stated that, "A critical theory of IL maintains that the development of students' capacity to pose thoughtful questions (as opposed to clear answers) is as important as their ability to locate, access, organize, evaluate, and apply information in the research process" (p. 13). Critical information literacy looks at not only how to pose meaningful questions in the search for information, but also examine how the information presented, who created said information, what the purpose was for creating the information, who the intended audience was, and how that information may be biased because of these realities.

Working definition of information literacy

For this research, the definition of information literacy that was utilized is a synthesis of all of the aforementioned definitions. Information literacy is at the core of lifelong learning and includes:

> Knowing when information is needed; where the information needed is best found and how to locate information within the systems used; how to evaluate the content as well as the creation of information for accuracy, reliability, bias and agenda; and how to use the information effectively and ethically in decision-making or problem-solving to achieve personal, social, occupational and educational goals.

Students who have a higher level of information literacy, know how to find information, and understand how to use that information are more likely to perform better in classes, have greater knowledge retention, and continue their education.

Faculty buy-in is necessary for librarians to have access to teach IL instruction

Librarians, unless they are integrated into a course, do not automatically have the access to teach IL instruction to classrooms of students. Caspers (2009) stated that librarians, when they do teach, "…are usually working with an instructor of record who 'owns' the class and who is the gatekeeper of access to the students. In this sense [the librarian's] ability to engage with students depends on [the] relationship with the instructor" (p, 21). Buy-in, as used in this study as part of faculty buy-in, is defined according to the definition from the Cambridge English Dictionary as "the fact of agreeing with and accepting something that someone suggests" (Cambridge University Press, 2016).

Barriers to faculty buy-in

Having faculty interested in information literacy instruction is one part of getting faculty buy-in. Some faculty are not interested in taking time out of their class schedule to have a librarian come in to teach (McGuinness, 2006; Oakleaf, Millet, & Kraus, 2011). Another reason faculty may not ask the librarian to teach IL to their students is that they believe that they are already teaching IL bit by bit in their regular assignments (McGuinness, 2006; Saunders, 2012). Faculty regard information literacy "as an add-on, and [is] heavily dependent on whether the faculty member can give up class time" (Saunders, 2012, p. 231). In her study, *What faculty think: Exploring the barriers to information literacy development in undergraduate education,* McGuinness (2006) found that faculty believe that students will gradually learn IL and they will figure it out as they need it, and that many faculty believe that a student will become information literate only through "personal interest, individual motivation and innate ability, rather than on the quality and format of the available instructional opportunities" (p. 577).

In a study entitled, *Faculty perceptions of ACRL's information literacy competency standards for higher education*, Gullikson (2006) found that more half of the faculty believe that students are expected to have proficiency in five of the top ten most important skills that are the responsibility of the librarian, by the end of their first year of college. By the second year, 63% or higher of faculty thought that students should be proficient in nine of the top ten skills (Gullikson, p. 590). Table 3 reveals that outcomes 1.1c, 5.3a, 3.4g, and 1.1e are all skills that more than 80% of faculty, in Gullikson's 2006 study, believe that students should have by the end of their second year of college (590). These outcomes are specifically ones that faculty believe should be taught by a librarian. If students are going to receive the IL

Table 3.   Top 10 outcomes faculty believe fall under
              the responsibility of librarians

ACRL Outcome	Total: End 2nd yr
1.1c	90.4
5.3a	84.9
3.4g	82.5
1.1e	80.0
1.2d	74.1
1.1d	72.1
1.4a	69.6
3.2c	69.6
3.2a	63.4
2.2a	45.3

(Gullikson, 2006, p. 590).

instruction that students should have that faculty believe should come from librarians,
librarians need to have access to teach the students. Librarians and faculty need to work
together to ensure that students have access to IL instruction.

In a study on faculty perspectives on information literacy instruction, Saunders (2012)
found that the "…seeming unwillingness of faculty" to work with librarians may actually be
because of "…a lack of understanding of how librarians can contribute to and support their
institution" and suggested that librarians "be persistent, vocal, and confident in their ability to
contribute to learning outcomes" (p. 232). It is up to librarians to be advocates for
information literacy and make faculty aware of librarian's ability to contribute to the
instruction of information literacy. In order for librarians to have access to the classroom for
teaching IL instruction librarians must ensure that faculty are aware of what IL instruction
can do for students' academic success in the classroom and in the rest of their academic
career.

Conceptual Framework

The current study was framed using the American College and Research Libraries

(ACRL) *Information Literacy Competency Standards for Higher Education* (ACRL, 2000).

The *ACRL Information Literacy Competency Standards* were approved by the ACRL Board

of Directors on January 18, 2000 (ACRL, 2016). The ACRL is a division of the American

Library Association (ALA). The ALA was founded in 1876 and "…is the oldest and largest

library association in the world" (ALA, 2016) whose mission is "…to provide leadership for

the development, promotion and improvement of library and information services and the

profession of librarianship in order to enhance learning and ensure access to information for

all" (ALA, 2016). Article II of the ACRL Bylaws states:

> The Association is a forum for and an advocate of academic and research
> librarians and library personnel. The object of the Association is to provide
> leadership for the development, promotion, and improvement of academic and
> research library resources and services, and to facilitate learning, research, and
> the scholarly communication process. (ACRL, 2016)

Founded in 1940, the ACRL is the largest division of the ALA and whose current

membership accounts for nearly 20% of the total ALA membership (ALA, 2016). The *ACRL*

Information Literacy Competency Standards and Performance Indicators are as follows:

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

1. Performance Indicators:
2. Defines and articulates the need for information.
3. Identifies a variety of types and formats of potential sources for information.
4. Considers the costs and benefits of acquiring the needed information.
5. Reevaluates the nature and extent of the information need.

Standard Two: The information literate student accesses needed information
effectively and efficiently.

Performance Indicators:
1. Selects the most appropriate investigative methods or information retrieval
   systems for accessing the needed information.

2. Constructs and implements effectively-designed search strategies.
3. Retrieves information online or in person using a variety of methods.
4. Refines the search strategy if necessary.
5. Extracts, records, and manages the information and its sources.

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. Summarizes the main ideas to be extracted from the information gathered.
2. Articulates and applies initial criteria for evaluating both the information and its sources.
3. Synthesizes main ideas to construct new concepts.
4. Compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information.
5. Determines whether the new knowledge has an impact on the individual's value system and takes steps to reconcile differences.
6. Validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners.
7. Determines whether the initial query should be revised.

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. Applies new and prior information to the planning and creation of a particular product or performance.
2. Revises the development process for the product or performance.
3. Communicates the product or performance effectively to others.

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. Understands many of the ethical, legal and socio-economic issues surrounding information and information technology.
2. Follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources.
3. Acknowledges the use of information sources in communicating the product or performance. (ACRL, 2000, Section 7)

It is important to note that each Performance indicator has a list of outcomes associated with

it. The IL Literacy Competency Standards are provided in Appendix A

CHAPTER 3. METHODOLOGY

The purpose of this qualitative, interpretive, multiple case- study was to examine intrinsically the conceptualization and practice of information literacy instruction in community colleges in a Midwest state. This chapter describes how this study was conducted: the methods used; the participants, why and how they were chosen; how data were collected and analyzed; and the criteria used to determine the trustworthiness of this study.

This multiple case-study has five cases. Each research site was examined using the same questions. All observations of the librarian's instruction methods in Composition courses were conducted using the same protocol. All interviews were conducted with the librarian at the community college using the same set of questions. The study employed triangulation of three types of data collected: (1) document analysis, (2) observation of instruction, and (3) interviews with librarians.

Positionality Statement

As a child I spent a good portion of my youth in the library, the librarian was one of my best adult friends who taught me how to use the card catalog and helped me find fun and interesting things to read. During that time, I had a full three shelves of my own books at home that I shared and checked out, using homemade cards, to my friends with less access to books. I enjoy learning and sharing my knowledge with others. Many years later, with young children of my own, I decided to go back to college in order to further my knowledge and to learn how to share what I learned with others more efficiently.

In my undergraduate education I attended two different community colleges. While attending my second community college I took a one-credit course in information literacy. This course changed my entire trajectory for my education as I realized that what I really wanted to do was teach people how to find information. I knew I wanted to do something with writing, or reading, or books, or something, but hadn't settled into anything until that class. I realized for me that knowing how to find information and sharing that information was something I had always done on some level and that I loved being able to do so, librarianship was a perfect fit. I continued my education past my undergraduate degree to obtain a master's degree in Library and Information Science with a focus on academic and community college librarianship. While in my master's program I taught several IL instruction sessions in graduate level classes in a higher education program where I was employed as the librarian for a research team. After graduating with my master's degree I decided to continue my education in a PhD program to study higher education, again focusing on community colleges and continued to teach IL instruction sessions to master level classes in my higher education program during my PhD studies.

Epistemology

Epistemology is the "study of knowledge" (Steup, 2005; Truncellito, n.d.) "and justified belief" (Steup, 2005). This is not knowledge on how to do something, but "understood more broadly, epistemology is about issues having to do with the creation and dissemination of knowledge in particular areas of inquiry" (Steup, 2005). Constructionism epistemology holds that "meanings are constructed by human beings as they engage with the world they are interpreting" (Crotty, 1998, 43). Creswell (2007) noted that "…in social

constructivism, individuals seek understanding of the world in which they live and work" (p. 24). Constructionism is sometimes described as interpretivism (Denzin & Lincoln, 2011: Mertins, 1998, 2010). Interpretivist research believes that "people create their own meanings in interaction with the world around them" (Lapan, Quartroli, & Reimer, 2012, p. 8). As this research was examining how community college IL instruction programs understand IL and then how that translates to the teaching of information literacy, an interpretivist or constructionist approach was deemed an appropriate fit.

Qualitative Inquiry

An interpretive qualitative study seeks "to discover and understand a phenomenon, a process, the perspectives and worldviews of the people involved, or a combination of those" (Merriam, 2002, p. 6). Maxwell (2005) noted that an interpretive qualitative study is interested in "not only the physical events and behaviors that are taking place, but also how that participants in [the] study make sense of these, and how their understanding influences their behavior" (p. 22). My study used an interpretive qualitative approach.

Qualitative research "places more emphasis on the study of phenomena from the perspective of insiders" (Lapan et al., 2012, p. 3). When describing qualitative research Merriam (2002) said it "is an intensive description and analysis of a phenomenon or social unit such as an individual, group, institution" (p. 8) and is used when research is looking to "understand a phenomenon, uncover the meaning a situation has for those involved, or delineate process (how things happen) (p. 11). Maxwell (2005) remarked that qualitative research is used when you want to know "how the participants in your study make sense of [the physical events and behaviors that are taking place], and how their understanding

influences their behavior" (p. 22). Qualitative research is interested in understanding how people interpret particular points of time in the world in which they live.

Qualitative research allows for discovering and understanding a process. In this study it is related to information literacy instruction, and the perspectives and worldviews of the people involved, the librarians, through intensive description and analysis of an institution. Qualitative inquiry is the correct method for this research study because this study is seeking to uncover how librarians conceptualize and practice information literacy instruction, how librarians make meaning of information literacy and their practice in teaching it.

Methodology

Creswell (2007) stated that "…case study research involves the study of issue explored through one or more cases within a bounded system" (p. 73). Yin (2009) noted that, "Case studies are the preferred method when (a) "how" or "why" questions are being posed, (b) the investigator has little control over events, and (c) the focus is on a contemporary phenomenon within a real-life context (p. 2). A collective case study looks at several programs or sites. The researcher chose to use a collective case study because looking at one topic at different sites that are all within one bounded system, information literacy instruction in community college libraries in a Midwestern state would provide a wider perspective of information literacy instruction practices. The individual cases are the information literacy instruction programs at the five different sites.

Research methodology is described as the "strategy or plan of action" used in the research (Crotty, 1998, p. 7). This interpretive qualitative study uses a multi-case study methodological framework. "A case study is an intensive description and analysis of a

phenomenon or social unit such as an individual, group, institution, or community"
(Merriam, 2002, p. 8). Interpretive research seeks "to understand phenomena by accessing
the meaning and value that study participants assign to them" and "how participants
experience the world" (Lapan, Quartaroli, & Reimer, 2010, pp. 8-9). The individual cases
studied in this multi-case were the IL instruction programs at five different community
college sites in a single Midwestern state.

A multi-case study is a more robust study than a single case study (Eisner & Peshkin,
1990, p. 212; Yin, 2009, p. 53). Yin (2009) explained multiple case studies in that "Case
studies can cover multiple cases and then draw a single set of "cross-case" conclusions" (p.
20). Using a multiple case study allows for a wider understanding of the conceptualization
and practice of information literacy instruction in community colleges.

The main research question used in this study was:

How is information literacy conceptualized and practiced in community college libraries? It
was divided into two subset questions:

1. How do community colleges and their libraries' instructional mission
   statements/statements of purpose conceptualize and understand information literacy?

2. How are Information Literacy Instruction Programs providing students information
   literacy instruction, as demonstrated in classroom information literacy instruction
   sessions?

The dates for observations were set up by the librarian and the faculty instructor of the course
in which the ILI was conducted. Most first interviews with the librarians were completed on
the same day as the observations.

Research Design

Cases

Each individual case in this study is an IL instruction program, with five individual community college IL instruction programs in the multi-case study. Each case is referred to by Program One through Program Five. They are randomly selected numbers and do not reflect the order in which data were collected or in any way place more value on one above any other. Librarians, when quoted or whose actions directly discussed, are referred to by the same case number assigned to their IL instruction program.

The librarians interviewed were all head librarians or in charge of the IL instruction at their community college. Four of the five librarians observed in the classroom teaching an information literacy instruction session were also the same librarian interviewed. In one of the five community colleges the head librarian, who is in charge of the overall IL instruction program, was interviewed; however, because there are a number of librarians that teach IL instruction sessions it was a different librarian who was observed. Because there is one community college with more than one librarian that teaches IL instruction, the cases are bound by the program rather than librarian.

Sites

The sites are community college libraries. The programs were chosen based on their Carnegie Classifications. The state studied has community colleges that fit within four of the classifications for community colleges: Public Rural-serving Small, Public Rural-serving Medium, Public Rural-serving Large, and Public Suburban-serving Multicampus. This study has programs at schools in the medium, large and multi campus classifications. One librarian

at a Public Rural-serving Small school did agree to participate; however, there was not a time where both the researcher was available and the program was conducting an IL instruction to conduct observations, so the program was not included in this study.

Sample selected from questionnaire sent to all community college librarians. The questionnaire asked for public information but also gave a starting place to recruit participants (see Appendix B). The sample of community colleges was identified and the librarian at each selected site was contacted. All who answered the survey were contacted, but not all chose to participate. There were a total of five librarians interviewed. Some programs were also contacted that had not filled out the survey. Those librarians were the full number of librarians that fit in one Carnegie Classification as none had filled out the survey. One of the librarians in that group participated.

Table 4 provides demographic data for the colleges that participated in the pre-survey. Data are from both the pre-survey and the NCES Library Survey from 2012. If data were collected in both the pre-survey and the NCES survey then the NCES data were reported; however, if data were not reported in the NCES data but were reported in the pre-survey, pre-survey data were recorded. Three of the five programs studies are included in Table 4; however, two of the colleges did not participate in the pre-survey so they were not included in the demographic information. In order to promote anonymity, there is no correlation between School One and Program One.

Human Subjects Approval and Informed Consent

Approval was sought from the Institutional Research Board at both Iowa State University and the individual community college sites. Participants, both those observed and

Table 4.   Demographic information of community colleges

College	Carnegie Classification: Associate's-Public **	Total FTE 12-month enrollment	Librarians and other professional staff	Number of IL instruction sessions per year	Hours open in a typical week	Gate count in a typical week	Circulation transactions (general)
1	Rural- Large	4,004	2	125	68	1,197	13,123
2	Rural- Large	11,983	3*	172*	N/A	N/A	N/A
3	Rural- Small	1,001	2.25	41	55	2,280	5,654
4	Rural- Medium	3,152	2	24	63	N/A	11,522
5	Rural- Medium	2,315	2	38	66	450	22,321
6	Rural- Small	1,408	1	N/A	N/A	N/A	N/A
7	Rural-Small	839	1	26	66	846	8,600
8	Rural- Medium	2,146	1	16	55	525	1,753
9	Rural- Large	14,852	7	154	75	6,806	24,151
10	Suburban-Multicampus	5,529	2.5	139*	N/A	N/A	N/A

Data from: http://nces.ed.gov/surveys/libraries/compare/LCFinalReport_New.aspx?RptID=Adhoc#
 * Data from study's survey, not NCES database
** Data from Carnegie Classification website: http://carnegieclassifications.iu.edu/

those observed if they were different librarians at an individual site, were given an informed

consent document. The document informed them of the study, what the plans were for the

obtained information, and assurance that their responses will be kept as confidential as

possible. The document also informed participants of their rights in this study.   Participants

had the right to not participate in whole or in part, they had the right to not answer any

specific question, and they had the right to end their participation at any time. Copies of the

Institutional Review Board Approval (IRB) and Consent Form appear in Appendix C.

Because of the large number of possible programs in the state it was not realistically

feasible to obtain permission from every program in the state when not all were going to be

studied; so after a selected librarian agreed to participate, their institution was contacted to

obtain permission to conduct research on their campus. After permission was granted at each

community college, observation and interview dates were set up by the librarians.

Data Collection Procedures

Crotty (1998) defined methods as "…the concrete techniques or procedures we plan to use" (p. 6). In the book, *Case Study Research: Design and Methods,* Yin (2009) explained that data "…can come from many sources" (p. 99), and "…discusses six [data collection methods]: documentation, archival records, interviews, direct observation, participant-observation, and physical artifacts" (p. 99). To answer the research questions, data were collected in the following ways: interviews, direct observation of the IL instruction sessions, and document analysis of archival records and physical artifacts.

The interviews were recorded digitally for ease of transcription and are stored in password protected files. Information literacy instruction sessions in Composition courses conducted by the community college librarians were observed. These classes were selected because they are often the first classes in which a student has to do some kind of research. Documents analyzed include handouts from the IL sessions, any institutional or library policy or mission statements regarding IL, and the websites of both the community college and the library for mention of IL in any other location than the mission statements.

Interviews

A two interview series was set up to collect data from the participants. The first interviews lasted from 45 minutes to an hour. The first interviews collected data about the ILI conducted at each site and the processes used to create and implement the IL instruction. The second interview was a follow-up to the first interview, as necessary, to ask any questions that may not have been asked in the first interview because of time restrictions.

Each interview was scheduled for up to 60 minutes. The interview protocol provided in Appendix D.

The interview questions were designed to gather data that would help understand the culture of IL and IL instruction in the different programs. The first set of interview questions focused on the mission statements of the community college and library, and questions about how the mission supports the goals of the IL instruction program. The second set focused on the information literacy program and IL instruction and outcomes, and the third inquired about service to online students, developmental/remedial students and online tutorials for IL instruction available to students.

Observations

Observations were done in the classroom of the instruction process. All of the community colleges I worked with had a system by whereby the faculty request an IL instruction session. All IL instruction sessions are one-shot sessions. The librarian asked permission of the faculty who asked for an IL instruction session for the observation to take place. Observations were then scheduled at the faculty and librarian's convenience. Observations looked for instruction content and adherence to the *ACRL Information Literacy Competency Standards*. Observations were done in Composition courses. This was to ensure that the students were actually doing some research and the session was meaningful to their needs. Observation protocol can be found in Appendix E.

Document analysis

Documents examined included mission and policy statements of the community college and the library, the community college and library's webpage, and the American

College and Research Libraries (ACRL) *Information Literacy Competency Standards for Higher Education*, and handouts given to students during the IL instruction session. This research study did not have access to any written syllabus or plan for the IL instruction sessions as none of the librarians had one. Table 5 provides a summary of data collected.

Table 5.   Summary of data collected

Program	Interviews	Observations	Documents	
			Handouts	Mission/Vision
One	1- 45 min	2 Comp II classes	2	Y
Two	1- 50 min	2 Comp I classes	2	Y
Three	1- 50 min	2 Comp I classes	0	Y
Four	1- 45 min 2- 20 min	2 Comp I classes 2 Comp II classes	0	Y
Five	1- 40 min	2 Comp I classes	1	Y

NOTE: All classes were 50-70 minutes.

Data Analysis

The transcripts, handouts, and observation notes were coded using descriptive coding, and then grouped into themes generated by the first level coding. Descriptive coding "assigns labels to data to summarize in a word or short phrase – most often a noun- the basic topic of qualitative data" (Miles, Huberman & Saldaña, 2014, p. 74). The codes were then grouped into themes during the second round of coding. For example, the themes of faculty engagement, outreach to faculty, and faculty buy-in were all grouped into the final code of faculty buy-in. Data were also coded by specific outcomes from the *ACRL Standards and Performance Indicators* (ACRL, 2000) to see if the students are receiving instruction on how

to obtain the skills in the five ACRL standards. The *ACRL Information Literacy Competency*

Standards are: The information literate student …

1. Determines the nature and extent of the information needed.
2. Accesses needed information effectively and efficiently.
3. Evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
4. Individually or as a member of a group, uses information effectively to accomplish a specific purpose.
5. Understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally. (ACRL, 2000, Section 7) (See Appendix 2).

As new themes emerged from the open-coding all previously analyzed documents

were reanalyzed to check for presence of the newly emerged themes. A working document

of all themes was created and all documents analyzed with each theme were noted on the

working document. The data were analyzed case by case before conducting a cross case

analysis on the two questions. This study used a case-oriented approach to conduct the cross-

case analysis. A case-oriented approach examines each individual case and then replicates

the approach with the other cases in the study, usually a small number of cases, before

examining the analysis of each case for common themes across the cases (Miles, Huberman,

& Saldaña, 2014, pp. 102-103).

Computer-aided data analysis software

After member checking, transcripts were analyzed using a qualitative software called

NVivo. Themes in interviews were grouped and outliers identified. Observation notes were

also analyzed through NVivo. Documents were analyzed against the interviews and

observations to see how those fit in with the themes that emerged in analysis.

Trustworthiness Criteria

Triangulation

Triangulation "involves corroborating evidence from different sources to shed light on a theme or perspective" (Creswell, 2013, p. 251). External checks are one way to increase validity. External checks are made to clarify researcher bias or positionality, and are carried out by member checking, peer checking, and providing rich thick descriptions (Creswell, 2013).

Lapan et al. (2012), explained triangulation as "…finding agreement among evidence collected from multiple sources and using various methods, increases the validity and trustworthiness of the findings" (p. 251). Maxwell (2005) noted that "…triangulation of observations and interviews can provide a more complete and accurate account than either could alone" (p. 94). This study employed three types of data collection: (a) interviews, (b) document analysis, and (c) observation of instruction. Interviewees included community college librarians. Documents examined included college and library mission statements and statements of purpose, handouts from the ILI sessions, and the American College and Research Libraries (ACRL) *Information Literacy Competency Standards for Higher Education.* Observations sessions were done in Composition I and Composition II courses.

Member checking

All interviews, after transcription, were sent to the individual participants for member checking. If a participant felt strongly that something they said in an interview needed to be removed, it was. This was to make sure that nothing was misrepresented in the transcription

to ensure that the participants felt that their words were accurate and were comfortable with their words being published even though they are anonymous.

Peer checking

Peer checking is having a peer, in this case a person with working knowledge of qualitative analysis, looked over the analysis to verify themes that were found. All interview transcripts, with identifiers removed, were given to a peer for theme checking. The peer reviewer had a Ph.D. in Education and was, thus, considered to be a qualitative researcher. All themes were found to be reliable by the peer reviewer.

CHAPTER 4. FINDINGS

This chapter presents the data and offers an analysis of those data. Each question is presented separately. The data are presented in different ways. Each question has a main table where analysis is presented by individual case, from the interviews, observations, and documents. After each table the data are discussed in greater detail with further evidence from the interviews, observations, and documents that to help answer each research question more fully. The data are presented both as individual cases as well as a cross-case analysis for each question.

Question One: How do community colleges and their libraries' instructional mission statements/statements of purpose conceptualize and understand information literacy?

Q1.1. How do the college and library's mission and vision statements describe information literacy and lifelong learning?

When addressing Question One, the data revealed that the words "information literacy" are not used in any of the five community college's mission or vision statements (see Table 6). A community college's mission statement that does not explicitly or implicitly mention information literacy means that information literacy likely is not a main focus for the college. Two college libraries had mission statements readily available on their website. Neither of them explicitly state information literacy as a goal in their mission statements, but both of them imply information literacy. The library mission statements say they support their college by helping users identify information needs and providing access to resources. Both identify and access are standards of the ACRL Standards and Performance Indicators; identify falls under Standard 1) Determine the extent of information needed, and access falls under Standard 2) Access the needed information effectively and efficiently.

Table 6. Mission statements

Program	Mission or Vision Statement	Analysis
1	Provides affordable, accessible, quality education and training to meet the needs of our communities. The mission statement of the community college library's states that they support the mission of the community college by providing access to resources.	The mission statement is a general statement about quality education and training being accessible and affordable. There is no mention of information literacy in this college's mission statement.
2	A globally informed community of successful lifelong learners. The library's mission statement says they: support student learning and faculty instruction by helping users identify their information needs and find the resources to meet those needs.	There is no mention of information literacy in this college's mission statement. However, the vision statement does say lifelong learning. According to the ACRL "Information literacy forms the basis for lifelong learning" (2016). So information literacy is implied. The mission statement of the library does state that they help users identify information needs and find resources. This touches on the first two standards of the ACRL Standards.
3	Provides accessible, quality programs and services to promote student success and economic vitality. Is a leader in lifelong learning, embraces diversity, transforms lives to strengthens communities, and inspires individuals to excellence.	The vision statement discusses lifelong learning. There is no mention of information literacy in this college's mission statement. However, the mission statement does mention lifelong learning. According to the ACRL "Information literacy forms the basis for lifelong learning" (2016). So information literacy is implied.
4	Deliver high-quality education and training that prepares a skilled workforce, strengthens our communities, and provides affordable access to higher education.	There is no mention of information literacy or lifelong learning in this college's mission statement.
5	Identifies community needs; provides accessible, quality education and training; and promotes opportunities for lifelong learning.	There is no mention of information literacy in this college's mission statement. However, the mission statement does mention lifelong learning. According to the ACRL "Information literacy forms the basis for lifelong learning" (2016). So information literacy is implied.

Three of the five community colleges' mission statements allude to information

literacy, they use the words "lifelong learning." According to the ACRL, "Information

literacy forms the basis for lifelong learning" (ACRL Website).

Librarian Four articulated this in the statement:

> *First of all, barrier #1 is that information literacy isn't mentioned in the college's goals. They mention lifelong learning, but at no point does it say anything about information literacy skills, so by me creating a relationship with faculty, I have been able to help them see that information literacy skills*

*are important. I feel like I still have some work to do with the administration
to see that information literacy skills are important.*

In three of the five community colleges studied, information literacy is implied but not directly stated. If a community college student doesn't receive any information literacy instruction before they transfer they are likely to be behind, and may not have a chance to receive any information literacy instruction in their upper level courses. Universities may have a credit course that is often taken in the first two years and/or they conduct IL instruction in Composition I & II courses which a community college transfer student has already taken. Not having IL instruction sessions for all community college students' leaves the transfer student underprepared for junior and senior level courses involving research and possibly without the chance to ever receive IL instruction.

Q1.2. *How do the college and library's mission and vision statements help inform the culture of information literacy instruction?*

Equity in instruction?

All librarians are working to teach information literacy in an institution that doesn't state that they value information literacy in any of the mission statements or policy statements. An institution that doesn't have as a strong focus on information literacy could be because the administration does not know the importance of information literacy. Without a strong focus, information literacy is not seen as being of value and therefore making it more difficult for librarians to have a chance to see all students and teach IL instruction. Librarian Four discussed the current administration and the lack of support for information literacy:

*I think it's going to have to take a change in thinking on the part of the
administration or a change in administration in order for information literacy
to be seen as important as I see it and as important as the English Department*

sees it. ... It is just so hard to know what is needed when I don't have a relationship with faculty that some people might think don't use the library.

Without administrative backing, faculty are left to their own opinions on the need or the worth of IL instruction sessions for the classroom.

All IL instruction sessions are done at request of instructor; however, not all faculty request times for IL instruction for their class. This leaves gaps in some student's education. Librarian Four explained some communication with faculty in setting up IL instruction sessions:

> *I really rely on my relationships that I have with my instructors. I am relying on them to tell me, 'hey, we have a paper coming up. Would you come in to talk to the class?' So if it gets to be about midway through the semester and I haven't heard from some people, I will actively contact the Comp I, Comp II, or Speech instructors but realizing that if I come in during the first week of classes and they don't have a paper that is due, by the time they get the paper assignment they have forgotten everything that they've learned during week one. I really rely on the instructors to tell me when they have papers coming up and that the students are going to need those skills to work on their paper.*

Librarian One explained the issue with not having cooperation with all faculty:

> *Not being able to reach all students because I know that there are classes where they have to do a paper and the instructor already assumes they have the skills. ... The weaknesses are, I think, the lack of cooperation between us and some of the faculty. I can't say that about all of the faculty but some of the faculty.*

Librarian Three talked about faculty buy-in to IL instruction sessions for the classroom:

> *I try to do what I can, but also it's a two-way street as far as what the faculty either want or have time for. I think that's a lot of it, not that they don't want it, it's just what they feel they have time for.*

Explaining that even if some faculty don't have their students attend an IL instruction session some of their student will still seek help in the library, Librarian Three said:

> *I can think of one faculty member in particular who has never had us work*
> *with students at all but I have had his students say, 'I need some help on these*
> *assignments, and I've heard that you can do that.' I think that's a strength*
> *that students know that they can get help through us.*

Librarian Three's final words in the interview talked about faculty buy-in, *"We have good resources here, and I think we've got a good staff so it's just getting the faculty to see us as being a valuable part of their students' education process."* Getting faculty and administration to see the library as a valuable part of the student education process is the key to faculty buy-in.

Question Two: How are Information Literacy Instruction Programs providing students information literacy instruction, as demonstrated in classroom information literacy instruction sessions?

Q2.1. What are the common indicators of information literacy from the ACRL Information Literacy Competency Standards?

A finding is considered common, in this research, if four or five of the five programs were observed with the same findings. Three of five is considered the majority, and will only be used to report Standards Three and Five as these standards did not have any outcome reach common status. All of the librarians teach skills that relate to the following *ACRL Information Literacy Competency Standards*: (1) Determine the extent of information needed, (2) Access the needed information effectively and efficiently, (3) Evaluates information and its sources critically, and three librarians of the five teach skills that relate to (5) Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally. The specific Indicator and Outcome of each standard displayed are listed in the discussion of each standard represented.

Every outcome with four or five programs represented are reported in Table 7 and discussed in the following text. Table 8 revealss the top 11 ACRL outcomes commonly

Table 7.   Observations of ACRL Standard taught in instruction

Program	Observations & Handouts	ACRL Standards of Information Literacy				
		1	2	3	4	5
One	Database search skills taught. Basic search refining skills taught. Evaluation of websites and materials. Ethical use, citation skills. NoodleTools, information management - digital notecards.	X	X	X	X	X
Two	Database search skills taught. Basic search refining skills taught. Basic evaluation of materials for fit taught.	X	X	X		
Three	Database search skills taught. Library of Congress Subject Headings learning activity. Basic search refining skills taught.	X	X			
Four	Database search skills taught. Refining search skills taught. Discussion of peer review. Basic evaluation of materials for fit taught. Evaluation of websites taught. Ethical use, citation skills.	X	X	X		X
Five	Database search skills taught. Refining search skills taught. Basic evaluation of materials for fit taught. Ethical use, citation skills.	X	X	X		X

covered. The only standards reported and discussed that are not common but have a majority

represented are Standards Three and Five. These two outcomes, 3.2a and 5.3a, are discussed

using a majority reported as these are the only two outcomes in Standards Three and Five to

have three or more programs reported.

As indicated in Table 8, the common IL instruction given to students, in 50-70 minutes a

session, at all five programs includes:

- Exploration of general information sources like Google and the library's catalog and databases;
- Instruction on how to identify keywords, synonyms and related terms for the information needed;
- Instruction on how to find the controlled vocabulary specific to the discipline or information retrieval source;

Table 8.   Top 11 ACRL outcomes commonly covered

Outcomes	Program 1	Program 2	Program 3	Program 4	Program 5
1.1c	x	x	x	x	x
1.3a	x	x	x	x	x
2.1d	x	x	x	x	x
2.2c	x	x	x	x	x
2.2e	x	x	x	x	x
2.4c	x	x	x	x	x
1.2d	x	x		x	x
2.2b		x	x	x	x
2.2d	x	x	x		x
3.2a	x	x		x	
5.3a	x			x	x

- Instruction on how to construct a search strategy using appropriate commands and limits for the information retrieval system selected;
- Exploration of how different information retrieval systems can use different command languages, protocols, and search parameters;
- Discussion on how to identify the purpose and audience of potential resources;
- Discussion on how to examine and compare information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias; and
- Instruction on how to use either MLA or ALA documentation style to cite sources.

When discussing the overall goals of their information literacy program, Librarian Five

said:

I think the first one is for the students to understand where information comes from, how it is produced, and then secondly is how they can find it when they

have an information need. Thirdly is how they can evaluate whether the information they are finding is appropriate for the use, their current use can meet that need, and then the fourth is to actually use that information to develop their thinking, develop their ideas, and use that in a speech or a paper or a presentation or some other way.

ACRL Standard One: The information literate student determines the nature and extent of the information needed.

The following performance indicators and outcomes, from the *ACRL Competency Standards for Information Literacy in Higher Education*, were observed in the majority, at least three out of five, of the programs examined.

Performance Indicators

- 1. The information literate student defines and articulates the need for information. Outcome c. Explores general information sources to increase familiarity with the topic.
- 2. The information literate student identifies a variety of types and formats of potential sources for information. Outcome d. Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical).
- 3. The information literate student considers the costs and benefits of acquiring the needed information. Outcome 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) (ACRL, 2000).

All outcomes are discussed in order in the following text.

1.1.c. All five programs explore the main search box on the library's catalogue and EBSCO, a commonly used database provider in colleges and universities. Programs One and Four also showed students how to more efficiently and effectively use Google.

1.2.d. Programs One, Two, and Three included a discussion with the students about the differences between magazines and journals, and why one may be better than the other depending on the information need. Program Two had a discussion with the students about why using a database may be better than using Google and when Google would be a good

idea. Programs One and Four have a discussion about the differences between website domains such as those from .edu,.org,. gov, or .com. Both also discuss that just because a website is from an organization, .org, or from an educational institution, .edu, it still may be unreliable or biased so check the source. Programs Two, Four, and Five have discussions about what is peer review? 1.3.a. This is consistent with helping students learn how to access information that may not be readily available. Program Four is part of a consortium and the librarian showed students, when showing how to use the library's catalogue, how to find materials in either the community college or in the consortium and how to know where an item is located, and made sure students knew that it took time to get materials from the other libraries. Librarian Four also showed how when you are logged in to the library and search Google Scholar, the materials available through their library will have the program's name to the right of the article.

Librarians from Programs One, Two, and Three all discussed interlibrary loan (ILL) and how to request materials online. All three librarians also discussed that getting materials through ILL takes time, and that hard copy materials can take up to two weeks. Programs One and Two also had handouts with links to websites and resources available to the students at their community colleges.

The librarian from Program Five showed students where the link to WorldCat, "WorldCat is the world's largest network of library content and services" (OCLC, 2016). Students have ILL access to materials located regionally and all over the world. The librarian did not take time to show the students how to use WorldCat, but did let students know that materials that are not in the community college library can be accessed through this database.

All five librarians taught students how to identify what databases to use for different

types of information needs. Two librarians discussed the instruction of determining what

information is needed and where to access said information.

Librarian One stated:

> *We know that in their busy lives they are not necessarily going to just pop up*
> *and say, 'give me all this information' because often times they don't*
> *understand what they don't know so they are not going to seek out something*
> *that they realize can be of value to them.*

Librarian Two said:

> *You can show them all the tools on identifying what could be really relevant*
> *but ultimately it is that user that decides relevance.*

Teaching students the information seeking skills that they didn't even know they

needed will give them more options in their search for information. All librarians focus

mostly on an exploration of databases, an understanding peer review, how to determine the

difference is between a journal and a magazine, and how to use interlibrary loan in their IL

instruction sessions.

ACRL Standard Two. The information literate student accesses needed information effectively and efficiently.

Performance indicator

- 1: The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information. Outcome 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 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); and 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.

- 4: The information literate student refines the search strategy if necessary. Outcome c. Repeats the search using the revised strategy as necessary (ACRL, 2000).

All outcomes are discussed as follows in the order presented.

The outcome, 2.1.d, is consistent with librarians wanting to ensure student know how to access information from the available information retrieval systems. The programs studied are all in community colleges that subscribe to the vender EBSCO. EBSCO is a large collection of databases from many different disciplines. All five librarians specifically showed students how to use the EBSCO platform. Librarians One and Five specifically explained what EBSCO is. Two librarians, Three and Four, specifically show another database than EBSCO.

Performance indicator 2 has the most outcomes taught of any observed. The main instruction librarians teach is how to search, how to use the tools and command languages to conduct a successful information search, and how to use multiple search engines and databases. All five librarians asked students at one point in the IL instruction session to brainstorm different terms for a chosen term. All five librarians showed students how to find the thesaurus or subject search in EBSCO and explained what controlled vocabulary is and why when using the subject search or thesaurus to find the controlled vocabulary for the chosen keyword in a database, your returns are more relevant. Librarian Three compared key terms to a key to unlocking a box of articles on a topic.

All librarians showed students the EBSCO database collection, but four of five also showed how to search for information in at least one other database or search engine. The librarians from Program One and Program Three showed students how to use Opposing

Viewpoints for a comparative research assignment. Librarians from Program One and Four showed how to use Google to do a topic search and limit to a .gov, .org, .edu, or .com and what that means, they also showed how .org and .edu may still not be reliable and to check their sources. Librarian Four also showed students how to use CQ Researcher as a good place to help narrow a topic.

Four of five programs also taught students search strategy skills, specifically using quotation marks for exact phrasing in your search, using truncation in a search to broaden the search, and using Boolean operators; the one search strategy skill taught by in all four programs was using quotation marks for exact phrasing.

The outcome, 2.4.c. Refining a search is one way to ensure the most pertinent information is found. The librarian from Program One showed students a basic one-word search to show how large the results list can get, and then added a second word still returning a large number of results. After the second search, the librarian explained that refining the search by date, type of source, and other limits can make the search results more manageable and have more relevant results. Programs Three, Four and Five also had a similar educational situation as Program One.

Program Three's librarian discussed some different ways a search can be narrowed: subject headings, dates, or title. Librarian Three also told students when discussing search strategies, *"If you want better answers, ask better questions."* The librarian for Program Four discussed how to revise search terms based on the findings and how limits like specific date ranges or peer review can limit the number of results to a manageable list. Librarian Four stressed to the students about refining a search, *"Different terms can bring different*

results." Librarian Five showed searches that were "failed searches" that returned few

results because the search is too narrow.

Two specific quotes about searching, by Librarian Five, stood out in the observation.

The first was: *"Don't be afraid to redo your search and change your keywords,"* and the

second one was: *"Don't be afraid to try different things. Don't assume that just because you*

don't find anything that there is nothing out there. You just may need to change your search

term." The aforementioned programs included education on ways to refine a search and

showed students that a search that isn't defined properly can yield results that may not be

useful or appropriate.

Librarians also discussed elements of *ACRL Information Literacy Competency*

Standards, Standard Two more than any other standard. All but Librarian Three talked about

Access in the interviews. Librarian Five specifically *stated "I think our strength is on the*

access end of the continuum." Librarian One said:

> *We first tell them how to access databases and how to also use our card*
> *catalog. After I see the students, I am hoping that they are better at their*
> *research skills, that they can choose the terminology that will allow them to*
> *locate their information better.*

Librarian Five said they teach students the information seeking skills they need so *"They [the*

students] can find it when they have an information need." Librarian Two explained that

"You can simply give them the basic tools that they need and talk about things like the

hierarchy of information so that they know that, well maybe I've used a broad term."

As librarians are gatekeepers of the information they manage, it makes sense that they

be the ones to teach people how to access information. Librarian Two also said:

> *You can educate them about what a .edu has, what a .org has and do all that,*
> *but when rubber hits the pavement, how many of these students out here when*

*they go to look for information are going to hit subject terms? Probably a
third of them. ... Most of them are going to just start searching. Why? It's
because Yahoo and Google have trained us to do that.*

Recognizing that students are likely to continue what is familiar, still knowing that some will

use the skills right away, and the others hopefully will see the need at a future time and come

back to ask questions as needed.

Librarian Four was able to build upon the instruction given in the Composition I

course when teaching in a Composition II course. Because Librarian Four had the

opportunity to see students in all Composition I courses and students in all Composition II

courses, it is reasonable to expect that most of the students in the Composition II courses

have seen the librarian at least once before, unless a student took their Composition I course

in a different community college.

Librarian Four discussed the differences between the instruction in Composition I and

II:

*Everything that we go over in Comp I, we cover finding books in the library
catalog. We go over using the library's databases and accessing those
databases from home. ... When we get into Comp II, again we kind of go over
briefly everything we had talked about in Comp I, but we get more in depth
about how to better use keywords and how to use the subject headings when
you are inside the databases. ... In Comp II we talk more about the keywords
and why it might happen that if you are limiting to a date range, what happens
if nothing comes up. ... Kind of teaching them what to do if they come up with
zero results, teaching them how to use different keywords.*

Observation of both Comp I and II courses corroborates what Librarian Four explained. In

the IL instruction sessions for the Comp I courses.

Standard Two is the standard from which librarians cover the most outcomes.

Standard Two covers much of the search process. Librarians in this study taught many

outcomes from Standard Two including identifying keywords and controlled vocabulary

specific to construct a search strategy using proper commands for search interface; implementing the search strategy in various information retrieval systems; repeating the search using revised strategies as necessary.

ACRL 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 indicator 2: The information literate student articulates and applies initial criteria for evaluating both the information and its sources. Outcome a. Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias (ACRL, 2000).

Critical evaluation of resources is a skill that helps facilitate lifelong learning. Three programs taught critical evaluation of sources, mostly internet sites. The librarian for Program Two talked briefly with students about why Google may not be reliable, and to check the agenda of a website. Librarian Two told students that they needed to be the ones to verify any resource found because *"There are no Google police."* One of the handouts from Program One specifically addressed evaluation of internet sources. The handout followed part of the IL instruction session. Librarian One used the acronym ORCA to discuss how to evaluate internet sites, and other resources as well, examining the objectivity, relevance, currency, and authority of an internet site.

The librarian from Program Four showed students two websites as a place to show students how important it is to critically evaluate a website before trusting it, http://martinlutherking.org/ and http://malepregnancy.com/. When discussing evaluation of sources, Librarian Four told the class:

> *The problem is no longer finding information. The problem is finding good,*
> *relevant, authoritative information because there is information everywhere.*
> *Some is bad or false information.*

Librarian Four showed students when evaluating websites how to figure out who is the

intended audience; who hosts the site; who is the author, host, or sponsor; is it an .edu, .org,

or .gov; and when was it last updated.

Only two of the five librarians discussed anything to do with Standard Three in the

interviews. Librarian One said in the interview about goals for students after an IL

instruction session:

> *I am hoping that they are better at their research skills, …, they can critically*
> *think and have critical thinking skills on evaluating the resources that they*
> *choose, and that this carries on to their regular lives because there are so*
> *many things out there that bombard them that they can make wise decisions.*

ACRL Standard Four: Uses information effectively.

Standard Four is not usually a standard that is often taught by librarians. Librarian

One said that *"We are more about how you get into it rather than how you actually use it."*

Program One is the only program that teaches any skill related to ACRL Standard Four. In

the IL instruction session Librarian One showed students how to use a program called

NoodleTools. This program helps manage materials and references, and it also has a digital

notecard function that helps manage information when gathering for use. Librarian Two

briefly mentioned information use when discussing the strengths of their IL instruction:

> *I have given the students what they need, the skills that they need to feather up*
> *and fly as students to gather articles and make the information useful.*

Librarian Five said something similar to Librarian Two:

> *What we want graduates to be able to do is to find and access and evaluate,*
> *and then use that information to develop their thinking, develop their ideas,*
> *and use that in a speech or a paper or a presentation or some other way.*

Librarian Five also said they are not so strong on use, but…

> *I think if there was an area that I would want to improve, it would be the use. … I think that is the one we have the least impact on, is how the information is used.*

This finding is not surprising as the instruction on using information to write a paper falls under the realm of Composition instructors.

ACRL 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 indicator 3: The information literate student acknowledges the use of information sources in communicating the product or performance. Outcome a. Selects an appropriate documentation style and uses it consistently to cite sources (ACRL, 2000).

Three of five programs discussed the importance of citations, and how to create them. It is important to note that while Program Three did not discuss citations in the IL instruction session it is because the instructor for that particular class has a specific assignment about using citations. Program One included a link, in the list of resources on one of the handouts, to a tool called Noodletools. In the IL instruction session, the librarian showed the students to use Noodletools to manage references. Directing students to create an account and log in, the librarian led the students through how to make a citation of a textbook, a non-fiction book and a journal article. Program Four's librarian showed students how to create a citation of an article and copy it to a word document to further edit to proper MLA or APA style. Librarian Four also showed the students how to find and use OWL at Purdue to figure out how to create citations of other materials. The librarian from Program Five showed students how to find all the citation information on an article once an article has been downloaded.

Question 2.2. What are the common characteristics in the different information literacy instruction programs?

This section is organized by two themes. The first theme one-shot, face-to-face IL instruction sessions, and the second theme is classroom and technology use.

One-shot sessions

All five programs observed conduct one-shot IL instruction sessions and all observed sessions were 50-75 minutes in length. None of the programs had any IL instruction sessions for online classes, all IL instruction sessions were presented face-to-face in the classroom or library. A one-shot session is simply one instruction session with an individual class without any follow-up sessions in the classroom. These sessions are a single class session running 50 minutes to 75 minutes. In the interviews, three librarians discussed this issue specifically.

Librarian One explained how the IL instruction sessions are conducted.:

Right now it is basically with the Comp II classes and having them come in and then we go over some of the basics. I pack in a lot just because I only have an hour and a half. With that we make sure that when we touch base on all the different things that the students are aware that they can come back and ask questions.

Librarian Three talked about IL instruction at Program.

I feel it is hit and miss. We do what we can. And a lot of times these 50-minute classes once in a semester, I struggle with giving them too much information.

Librarian Three discussed faculty buy-in and time constraints, and said:

If I can't get by-in from [faculty] how can I get what I want to do across to each student in 50 minutes and oh by the way, yes you do want 50 minutes to talk to them about their assignment.

Librarian Four talked about the IL instruction program:

Once I started, my goal was to have every Comp I, Comp II, and Speech class have an information literacy session. The way I wanted it to happen is that I

would see every Comp II class and every Comp I class so that by the time the students go to the Comp II, they should have already had Comp I thinking that, okay, I can go through my list of five things that I want to cover in Comp I, and if I get into the Comp II class, I know that every student that's in that Comp II class has already learned about these previous five things in Comp I.

In discussing the IL instruction sessions at Program Four, the librarian said:

Usually I try to get in and take as much of the class time as I am able to. If the class meets Monday, Wednesday, Friday it is for an hour each time so I try to take up the whole one-hour time period teaching the information literacy class. If it is on Tuesdays and Thursdays usually we do wind up with some extra time. It usually lasts between 50 minutes and 60 minutes even for those hour-and-25-minute class periods. I try to go over the same information whether it is on a Monday, Wednesday, Friday or a Tuesday/Thursday class and go over the same information in every Comp I that I've got.

All the programs studied employed the one-shot method of IL instruction. Librarians have about 50-75 minutes, once, to teach IL instruction to the students. That is, of course, if an instructor requests an IL instruction session for their classroom.

Larger dreams

In the interviews, three librarians specifically discussed plans or ideas for future expansion of the program, offering more IL instruction services than only one-shot IL instruction sessions, in order to serve more students with more in depth IL instruction. Librarian One discussed a plan to help boost the IL instruction for the students:

What we are hoping to do, and this is still in the organizational stage, we would like to have available to students some mini workshops that they would be willing to come to, hopefully, and have certain skills that they will be able to go over instead of bombarding them with everything for just an hour and a half.

The librarians from Programs Three and Four both discussed wanting to create a 1-credit elective course. Librarian Three discussed some of the barriers encountered:

I struggle with that there's not a campus-wide information literacy program or goals or anything like that. ... I would like this to be maybe an eight-week

one- or two-credit class where we could get into more detail. ... I would like to, and we've mentioned it before and it didn't fly several years ago so I don't know, maybe now, but having an online library skills course. The argument was they have a hard time getting all their courses in the way it is within their 63 credits or whatever it is that they are supposed to have. It could be a one-credit course or something like that that they could take early on to give them a foundation at least.

Librarian Four also wanted to create a one-credit course that would transfer to the local small private college:

A lot of our students transfer to [a small private college], and they do have an information literacy requirement course that they must take so somehow if I could work with [a local small private college] to get a reciprocity agreement with them. I see a real struggle, though, because even if it is just one credit hour then that kind of means that it is one less credit that students can choose what they take as an elective so trying to convince the administration – I mean, not only at here but across the district, that this information literacy is important enough that it needs to have its own one-credit class. I will still want to do my short 1-hour sessions with the Comp I, Comp II, and Speech. .... In an optimistic picture, that is what I see for the future.

Three of the five programs are looking into the feasibility of expanding in some way. Two programs specifically discussed wanting to create a credit course. The other program discussed creating non-credit workshops on IL instruction topics for students to attend if they choose.

Location and technology use

Computer lab

As shown in Table 9, three of the five programs had IL instruction sessions scheduled in a computer lab that is shared with the rest of the CC. Three IL instruction programs are often taught in the computer lab, but one librarian was bumped from the lab at the last minute by another class because of scheduling miscommunication.

Table 9.   Information Literacy instruction session locations

Program	Location	Benefits	Deficits
One & Three	Computer lab if open, if not then in the classroom	Each student has a computer to follow along.	Shared space with rest of community college, library not a priority in scheduling.
Two	Computer lab, if open. Otherwise, in library common space, using library iPads.	Each student has a tab to follow along.	IL session was in open public area. Library not priority for scheduling in computer lab.
Four	In the classroom	Students go to regular classroom. Presentation on front screen.	Not everyone had their own personal computer.
Five	In a classroom in the library, using library owned laptops.	Each student has a computer to follow along. Classroom is in library. Library has priority for scheduling.	

When discussing the IL instruction program Librarian Two explained:

Today, for example, we got the boot out of a computer lab because a scheduled class was in there, and we didn't know it. I thought it was going to be fine. I have to work with the schedulers more closely and gain an understanding of the importance. It may not even be that. They may understand the importance; we just don't have enough labs.

Classroom

All librarians observed were asked about the normal locations for their IL instruction

sessions. Programs One, Two, and Three use a shared computer lab. In all three cases the

space is used by a number of different classes so if that room is not available and the

librarians have to make different arrangements, Programs One and Two often then go into

the regular classroom. Program Three will hold the IL instruction session in the library

passing out iPads for each student to use in the IL instruction session. Program Five has a

classroom in the library where most IL instruction sessions in the school are held. Program

Four holds IL instruction in the student's regular classroom using the projector to share the

presentation. Some students in the class had a personal laptop and were able to follow along, but many students either didn't have a laptop or they chose to not get it out to use it, the librarian did encourage note taking.

Technology

Of the five cases, only one did not have computers, laptops, or tablets available for student use in the IL instruction session. Programs One and Two used a computer lab so every student had a desktop computer to use to follow along with the lesson. Program Five had a cart of laptops for the students to use in the IL instruction session. Program Three had recently purchased a cart with new iPads for the students to use. Program Four used a laptop connected to a projector to show the different websites and databases used in the IL instruction session. Most students did not have a laptop with them. Librarian Two discusses having a cart of new iPads available for use when an IL instruction session is unable to use the library's computer lab because another class is using the lab, *"That's why I like this mobile technology. I can whip those out."* The librarian, with assistance from IT, did spend about 5 minutes teaching the students how to use the iPads before they could begin the rest of the IL instruction session as many students had never used one before.

Q2.3 Assessment. How do the IL instruction programs assess student learning, if at all?

This research study did not receive any assessment data from any of the programs. All discussion of assessment is from the interviews. Three of the programs do not have any formal assessment at this time. The other two have a short pre-assessment survey or quiz at the beginning of the class. This research study was not given access to any assessment data. Both Librarian Two and Librarian Five talked about having no formal assessment in place.

Librarian Two said, *"Our program is not a formal program. We currently do not assess."*

Librarian Five stated, *"We, at this point, I would say, we are at zero on assessment."*

When discussing assessment, Librarian Two remarked that, *"I have never been asked*

by the administrator to assess library instruction."

While there is currently no formal assessment being conducted, Librarian Five was

looking into assessment: "*We do not, and as assessment becomes kind of more and more*

ingrained into our institution as well as others, that is something that we are looking at; how

do we assess?"

Student Feedback

Feedback from students is one way that librarians learn if their IL instruction sessions

are of value to the students. Librarian Two explains some of the informal assessment with

students:

> *I can tell you through the interactions that I have with the students who have*
> *gone through an information literacy class with me that it has helped them*
> *because of the concepts we discuss, and I have noticed that when I am out in*
> *the library or when I see students in the hallway and I ask how that library*
> *research is coming along, 'oh, just great, now what was that you told me*
> *about how do I get full text and how do I do that?' so I guess my assessment is*
> *more informal.*

Librarian Four talked about a questionnaire that is given to students after the IL

instruction session in some semesters, the semester studied was not one of the semesters the

questionnaire was used:

> *I do also have a 3-question handout that I hand out to the students. One of*
> *them is, 'what did you learn today', another one is, 'what is still unclear from*
> *what you learned today', and maybe realizing that if it is a Comp I class then*
> *I can kind of maybe clarify some of the places where the students were fuzzy*
> *in the Comp II, I guess I never know whether I'm going to see that same*
> *student in Comp II again but realizing that this input of where the students is*
> *confused is helping me to try to better explain whatever it is that they found*

was unclear. So maybe realizing that I haven't been able to help that one student right there but using that feedback to try to help the future students that I'm going to see.

In informal assessments with students in one-on-one reference conversations about what they remember from past sessions, students show signs of retaining and using the IL skills they were taught and are showing more advanced IL skills after an IL session than before they attended a session, or than those who have not had a session.

Faculty Feedback

Feedback from instructors is another way librarians get informal assessment of their IL instruction sessions. Of the three who do not have formal assessments, the librarians specifically mentioned receiving feedback from the instructors on an informal basis. Librarian Two talked about having conversations with faculty about the IL instruction:

When I hear from instructors and they say, 'my students are writing better papers, my students are using better sources, I'm no longer getting Wikipedia, I'm no longer getting encyclopedias,' then I know I'm on the right trail.

A summary of the assessments is provided in Table 10.

Librarian Four also talked about conversations with faculty about student outcomes after an IL instruction session:

A lot of it is actually from feedback from instructors so I will have instructors come up to me to tell me how much better their student papers are and how much better the information that they are citing has been. They don't use Wikipedia anymore when they would see that their students were using Wikipedia in the past.

Table 10. Assessments

Q2.3	How do the IL instruction programs assess student learning, if at all?
Program One	A pre-assessment was given. Pre-assessment asks about students' information literacy abilities.
Program Two	No formal assessment. Never been asked by the administrator to assess library instruction. Informal assessment in conversations with students and instructors.
Program Three	A 2-minute survey: 1) Have they come to one of the classes, 2) what was one thing they learned, 3) the biggest thing that didn't we cover that would've been good? Semester faculty evaluations, Comp I instructors.
Program Four	No formal assessment. Feedback from instructors. Normally hands out a three-question feedback form after the session but is not doing so the semester of the study. The three questions are 1) What did you learn today? 2) What is still unclear from what you learned today? and 3) What other questions do you have? Using that feedback to try to help future students.
Program Five	No formal assessment. Feedback from instructors.

Librarian Five also discussed faculty feedback after an IL instruction session:

> *We do get quite a lot of feedback from instructors. There is a fair amount of interaction with instructors about what worked well, what we would do next. I think some of that is based on the instructor's perception of the student work that resulted, but I wouldn't call that a direct assessment of skill.*

When discussing assessment of IL instruction sessions Librarian Three explained that:

> *We haven't done faculty evaluations for several years so at the end of the semester I'm going to send the instructors, at least Comp I instructors, I'm going to ask them, since their students have had instruction, how did that impact the results of their students articles they found, resources they found, etc. I am going to do that at the end of this semester. I've done something similar to that in the past, but we haven't done that for several years.*

Informal assessment, which is the only way some of the programs receive any

assessment, shows that faculty who have their students attend an information literacy

instruction session believe that the students do gain informational literacy skills. Feedback from instructors about the quality of sources used by students revealed that students are retaining and using the IL skills they were taught and are showing more advanced IL skills after an IL session than before attending a session, or than those who have not had a session.

Cross Case Analysis

Developing faculty buy-in

Faculty buy-in is dependent on faculty seeing the need for IL instruction. Often faculty do not know what the library can offer, librarians who reach out to faculty to let faculty know what the library has to offer and what the library and librarian can do for them and their students are more likely to have faculty buy-in. The librarian from Program Four talked about the importance of building relationships with faculty, *"The relationship that I have with the instructors is the absolute most important thing. It is the reason why I have been able to see every Comp I, Comp II, and Speech because I am very much relying on these instructors to let me into their class to teach in the first place."* Librarian Three was in agreement about building relationships with faculty, reiterating that it involves active outreach:

> *It is very important that a librarian, an academic librarian, not only realize their place in the academic team but actually take an active role in pursuing that role. What I mean is, by going to faculty, saying can I work with your students, what are you asking them to do that involves library resources. Here is what I can do.*

Outreach to faculty can also take the form of an open house, as Program One has implemented:

> *Last year, for the first time, we did an open house for the faculty. We just had short workshops that they could go in and learn just a little bit about something. We found out that was very successful and had informed some instructors that didn't really know about some of the things that we had. Yes, we need to market ourselves better. They said let's do it again next year so we will.*

Librarian Three has also found that *"faculty today do not know about online databases and how to find articles because they didn't grow up in that environment."* When discussing faculty buy-in Librarian Two explained some reasons faculty are not scheduling IL instruction sessions:

> *It is really hard to get by-in from a lot of them. I only see about half of the Comp I classes for various reasons. Some of the instructors have been here a long time, and they think they know how to do it themselves. Some of them do not want to take the time out of their 16 weeks to do that. They think that students should have gotten that in high school.*

Faculty are not all fully informed with what the library has to offer them and their students. Some faculty believe that they can teach their students IL skills, and some expect that students should already have those skills. Clearly, outreach is needed to faculty not only to both inform faculty what the library has to offer them but also to encourage the faculty to schedule an IL instruction session for their students.

Faculty buy-in at a departmental level allowed for Program Four to create a sequential IL instruction program starting the sequence in Comp I and expanding the instruction in Comp II. Faculty buy-in at a departmental level also allowed for Program One to see all Comp II courses. Programs One and Four see almost all students in the Comp II classes. Program Four also sees almost all the students in Comp I and Speech classes. Almost all, because both librarians said there are some faculty that teach the aforementioned courses that still choose to not have IL instruction in their classrooms. These two programs still rely

on the librarian to reach out to the Comp faculty to remind them and get them scheduled. Even in a culture where IL instruction is expected librarians still need to do outreach to faculty to remind them that they have not yet had the librarian come teach an IL instruction session, and get their class scheduled. Librarian Four still needs to actively contact instructors to schedule an IL instruction session, "if it gets to be about midway through the semester and I haven't heard from some people, I will actively contact instructors."

Librarian Four shared that after an IL instruction session in the class of the instructor who was also the chair of the English department. The instructor was sufficiently impressed to have a conversation with the librarian about what the librarian can offer and together they created the framework for the current IL instruction program. The Chair of the English department asked the rest of the English Comp I and Comp II faculty to have the librarian in to the classroom once per semester. In this case the department chair was the gateway to the faculty, who are requested to provide access to IL instruction sessions in their classrooms. However, even when the English department makes IL instruction a requirement for the Comp I and II classes, there are still some instructors that choose to not have an IL instruction session in their classroom.

Faculty buy-ins are critical for an IL instruction program to be successful. Faculty are the ones who have the say about having the librarian in to the class to teach IL, even in the programs studied that are supposed to see all classes in a course, there are no known consequences for a faculty member who chooses to not participate. Librarians participate in outreach activities to faculty, to not only inform them of what the library can do for them and their students but to also provide IL instruction to faculty who have lower IL skills, in order

to try to boost faculty by-in and raise the number of IL instruction sessions conducted and the number of students who receive IL instruction.

Information literacy instruction

Students who do receive IL instruction from the five programs studied are receiving quality IL instruction. All five programs have "one shot," 50-70 minute IL instruction sessions. Program librarians reported that faculty at their institutions requested librarians teach students about using the library's databases as well as how to effectively use Google. The common IL instruction given to students in the programs studied includes: a guided exploration of Google and the library's catalog and databases; instruction on how to identify keywords; how to find the controlled vocabulary; instruction on using appropriate commands and limits to construct a search; exploration of different command languages, protocols, and search parameters; and discussion on how to identify the purpose and audience of potential resources. The majority of programs also included a discussion on how to examine and compare information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias; and instruction on how to use either MLA or ALA documentation style to cite sources.

Comparing the top 11 ACRL Standards taught in the programs studied with the working definition of information literacy used in this research shows that the IL instruction programs are providing IL instruction. The full IL definition used in this research was:

Information literacy is at the core of lifelong learning and includes: knowing when information is needed; where the information needed is best found and how to locate information within the systems used; how to evaluate the content as well as the

creation of information for accuracy, reliability, bias and agenda; and how to use the information effectively and ethically in decision-making or problem-solving to achieve personal, social, occupational and educational goals.

The definition is split by section and shown with the corresponding outcomes:

- Where the information needed is best found: 1.1c. Explores general information sources to increase familiarity with the topic; 1.2d. Identifies the purpose and audience of potential resources.

- How to locate information within the systems used: 2.2b. Identifies keywords, synonyms and related terms for the information needed: 2.2c. Selects controlled vocabulary specific to the discipline or information retrieval source; 2.2d. 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); 2.2e. Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters

- How to evaluate the content as well as the creation of information for accuracy, reliability, bias and agenda: 3.2a. Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias; and

- Ethically use the information: 5.3a. Selects an appropriate documentation style and uses it consistently to cite sources.

The IL instruction sessions gave no instruction to the first section of the definition, knowing when information is needed, nor was there instruction on the use of the information.

However, these two portions of IL are taught in the Comp course. Knowing information is needed is why the class was in the IL instruction session in the first place and use of information is the domain of the Comp instructor when teaching students how to write a research paper. Working together, the Comp faculty teaching how to know information is needed and how to use the information and the librarian teaching students how to find information in different locations, how to evaluate the information, and how to ethically use the information by citing the sources together educate students in information literacy skills.

Inequity in instruction

There is inequity between programs and within programs as well. Not every program is able to provide IL instruction to all students. Two programs provide IL instruction to almost all Comp II classes, one of the programs provide to almost all Comp I and Speech classes as well. Almost all the students that graduate from these two schools will have seen the librarian at least once for an IL instruction session. The other three do not have any course that almost all faculty schedule IL instruction sessions. This means that many students from these three schools will graduate with never having the chance to see an IL instruction session. Community college students, who likely already have low levels of IL, without access to IL instruction are put at a further disadvantage than their peers in the community college who were provided access to IL instruction.

Lack of IL instruction for online students

Not one program offered IL instruction sessions to online classes. Librarian One remarked "A lot of time we do not see [online] students at all" and noted that sometimes students who come in to the library for one-on-one assistance will identify they are in an

online class, "but most of the time we don't see them." Librarian Three was "concerned that online students can get most, if not all, of their undergraduate credits without ever visiting a library. It is happening." Referring to the online platforms that schools use where instructors can provide students with any supplementary materials the instructor wants to upload and the online content textbook publishers provide, Librarian Three said, "I am afraid that it is directly competing with library resources" and not providing any information literacy instruction.

Program One struggles to help online students, because there is more than one campus in the community college, and because of how the library and college systems are set up privileging on-campus students with a school photo ID card and a student ID number that is associated specifically with an individual campus and thus the associated library. Librarian Two discussed sending emails and letter to the deans of departments, with information about what the library can offer to online instructors and students, to forward to the instructors of online classes but "whether they get forwarded or not I don't know." Not knowing who are the faculty teaching online classes and not having a sure way to reach the online faculty makes providing IL instruction to the students in the online classes impossible.

Online students, like other community college students, are likely to have lower levels of information literacy. Students who are not on campus for class do not have the opportunity to go into the library to see a librarian and have a one-on-one IL instruction lesson are not likely to learn the IL skills needed to become information literate.

CHAPTER 5. DISCUSSION

This multi-case study examined the cases of information literacy instruction programs through community college libraries. The purpose of this multi-case study was to understand how community college libraries in a Midwest state conceptualize and practice IL instruction.

Chapter 1 provided a summary of the subject, the problem, and the overall study. Chapter 2 offered a review of the literature that informed this study. Chapter 3 provided details regarding the methods chosen and the analyses. The findings were presented in Chapter 4. This final chapter discusses the three major themes from the findings, explores implications of the research, and begins a discussion of implications for future research. The themes are: faculty buy-in, information literacy instruction, and issues of equity of information literacy instruction. After the discussion, the limitations and implications of this study are defined, and recommendations are presented for further research.

Faculty Buy-in

Data from Chapter 4 revealed that that the words 'information literacy' are not used in any of the five community college's mission or vision statements. A community college's mission statement that does not explicitly or implicitly mention information literacy means that information literacy is likely not a main focus for the college. This creates a culture where IL is not viewed as a requirement or as an important concept or learning outcome as seen in the lack of referencing IL in the mission or vision statements of the community college. Within the current culture of community colleges from the programs studied, community college librarians are only able to teach IL to classes of students at the request of

faculty. Faculty are "the gatekeeper of access to the students" (Caspers, 2009, p, 21). This means that the librarian's ability to engage with students is reliant on faculty; the relationships the librarian is able to build with faculty, and the belief by faculty that IL instruction is useful and worth taking time to provide for their students.

Because faculty are the "gatekeepers of the classroom," for IL instruction to actually be provided requires faculty to want IL instruction for their students. Every program studied relies on faculty to schedule IL instruction sessions. This means that for many students who enroll in courses with faculty that do not include interaction with the librarian in the classroom, there will be little opportunity to receive IL instruction at the community college unless an individual student comes into the library asking for assistance.

Faculty often want to have specific instruction that assists students with an assignment. There are expectations from the faculty of instruction of research skills. If librarians didn't teach the skills faculty requested, they likely wouldn't be asked back to teach again. If a librarian is going to be able to get into the classroom in order to teach students information literacy at all they do have to ensure their instruction is seen as useful by the instructors, and that is often the expectation of a skills based education.   Faculty buy-in requires faculty seeing IL instruction as useful.

There are specific skills required to be information literate that belong in the realm of skills taught by a librarian, faculty who want their student to be information literate should want to enlist the college librarian to help their students become information literate. The Gullikson (2006) study presented in Chapter 2, *Faculty Perceptions of ACRL's Information Literacy Competency Standards for Higher Education*, discussed which IL skills university faculty believe students should have gained proficiency in at different academic levels

throughout the college career, and those specific skills that faculty believe librarians are supposed to teach. The study offered a top 10 list for librarian expected skills. By the end of a student's second year, 63% or higher of the faculty, believe that students should have proficiency in nine of the top ten most important skills that are the responsibility of the librarian, by the end of their second year of college (p. 590).

The overlapping ACRL Outcomes from the Gullikson's study that the faculty believe should be taught by librarians and the ACRL Outcomes taught by the programs in this study are:

- 1.1c. Explores general information sources to increase familiarity with the topic;

- 1.2d. Identifies the purpose and audience of potential resources;

- 3.2a. Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias; and

- 5.3a. Selects an appropriate documentation style and uses it consistently to cite sources.

The outcomes 1.1c and 5.3 are the top two of all 10 ACRL Outcomes, that are expected to be taught by a librarian, that 85% or more of faculty believe students should be proficient in by the end of their second year of college (Gullikson, 2006, p. 590). Clearly exploring general information sources to understand a topic, knowing what purpose a selected source has, evaluating information found, and then citing the information are skills that both faculty in the Gullikson (2006) study and librarians in this study believe are in the top skills students should have with the instruction of those skills coming from a librarian.

Research has indicated that faculty may have multiple reasons for not scheduling an IL instruction session, one reason is lack of time (McGuinness, 2006; Oakleaf, Millet, &

Kraus, 2011), another is faculty perceptions of IL instruction need (Saunders, 2012). As presented in Chapter 2, what may appear to be the disinclination of faculty to work with librarians may actually be "a lack of understanding of how librarians can contribute to and support" the faculty and their students (Saunders, 2012, p. 232). Saunders suggested that librarians "be persistent, vocal, and confident in their ability to contribute to learning outcomes" (p. 232). The librarians in this study also discussed outreach to faculty in one way or another as being crucial to their success in being able to teach IL to students in the classroom. Faculty not being aware of what the library has to offer was also widely discussed among the participants of this study. Program librarians have different ways to reach out to faculty, some attend departmental meetings, some email and do face-to-face conversations, some go to new faculty orientation, some offer professional development in the form of IL instruction, and one discussed holding an open house for faculty to attend and be informed of what the library has to offer for faculty and their students. Clearly outreach, marketing, and even IL instruction for some faculty is necessary for librarians to build relationships with faculty and for faculty to understand what the library has to offer them and their students.

<div align="center">**Information Literacy Instruction**</div>

Quality IL for those who attend a session

Information literacy, as defined in Chapter 2 stated that information literacy is at the core of lifelong learning, and includes knowing when information is needed; where the information needed is best found and how to locate information within the systems used; how to evaluate the content as well as the creation of information for accuracy, reliability, bias and agenda; and how to use the information effectively and ethically in decision-making or

problem-solving to achieve personal, social, occupational and educational goals. Comparing the top 11 ACRL Standards taught in the programs studied with the working definition of information literacy used in this research shows that the IL instruction programs are providing IL instruction skills that will benefit students in their class and throughout their education and beyond. Students are learning where the information needed is best found; how to locate information within the systems used; how to evaluate the content as well as the creation of information for accuracy, reliability, bias and agenda; and how to ethically cite sources. The IL instruction sessions gave little instruction to the first section of the definition, knowing when information is needed, nor was there instruction on the use of the information. Knowing that information is needed is why the class attended the IL instruction session and teaching the use of information is what the Comp instructor does when teaching students how to write a research paper.

Saunders, (2012) found that the baseline for student IL skill competences identified by faculty "center mostly on the location, access, and basic evaluation of information" (p. 231). The common IL instruction given to students in the programs studied includes: a guided exploration of the library's catalog and databases; targeting websites on Google using .edu, .org. .gov; instruction on how to identify keywords and find the controlled vocabulary for a database; instruction on using appropriate commands and limits to construct a search; exploration of different command languages, protocols, and search parameters; and discussion on how to identify the purpose and audience of potential resources. The majority of programs also included a discussion on evaluating information from various sources for reliability, validity, accuracy, authority, timeliness, and point of view or bias; as well as

instruction on how to cite sources. Students who are receiving IL instruction through the five programs are receiving IL instruction that will benefit them in their education and beyond.

Introduction to critical information literacy

As stated in Chapter 2, critical information literacy looks at not only how to pose meaningful questions in the search for information, but also examines how the information is presented, who created the information, the purpose for creating the information, the intended audience, and how that information may be biased. Simmons (2005) explained that "critical information literacy is a deliberate movement to extend information literacy further than the acquisition of the research skills of finding and evaluating information" (p. 300). There is merit in combining critical discussion and topics in a skills based instruction session.

In a system of standards based expectations there are still ways to incorporate critical education into IL instruction. A librarian can teach skills and incorporate critical dialogue around those skills and still fulfill both the skills based expectations and provide space for an introduction to critical education. Using examples of websites that have misleading information to discuss what the students see, what information is being presented, who created the webpage/site, and what the is agenda of the webpage/site is also an example of introducing students to critical literacy, specifically critical information literacy, education.

Jonathan Cope (2010) stated that "A critical theory of IL maintains that the development of students' capacity to pose thoughtful questions (as opposed to clear answers) is as important as their ability to locate, access, organize, evaluate, and apply information in the research process" (p. 13). Having discussions about what peer review is and how that privileges some information over other information, discussing how Google, Yahoo, and

other similar search engines have algorithms that privilege some information over others, explaining what it means to have an article in the library's databases verses Google or the like, explaining what controlled vocabulary is and how to use it, discussing that one database's controlled vocabulary is not necessarily the same as another's and how that can be problematic to finding useful materials, discussing paid firewalls and how libraries have to subscribe to content, are all parts of an overall discussion of the power structures that created and are created in the overall information machine. Knowing about the power structures of information allows students to pose thoughtful questions about the information found and help students make informed decisions on how to search for the information they need.

Adding critical discussion of the rhetoric of a piece of information; be it a journal article, a website, a commercial, a news article, or any other piece of information will plant a spark of critical education. Combining education of searching skills with using culturally, socially, or politically relevant examples such as alternative energy, gay marriage, or racism allows the librarian to teach the information literacy skills required by the instructor as well as introducing critical information literacy concepts. Using examples of websites that have biased information like martinlutherking.org, a website sponsored by Stormfront, to facilitate a discussion of what the students see, what information is being presented, who created the webpage/site, and the agenda of the webpage/site is an example of adding elements of critical literacy education, specifically critical information literacy education to the restricted framework of a skills-based IL instruction session. If one teaches students that they can and need to, and evaluate on a critical level the information presented to them, it gives the students the knowledge that critical evaluation of information benefits them, the students, intellectually in their search for information. When librarians have such a short time to speak

to a classroom and are under the expectation that the instruction teaches research skills, they need to prioritize their time. If a librarian does not teach the skills expected by the classroom instructor, the 'gatekeeper' of the class, it can result in the librarian not being asked back to teach IL instruction again.

Inequity

The inequity in IL instruction among and between programs appears to be, at least in part, because the programs work in community colleges where the mission and vision do not support information literacy. This creates a culture where faculty members are not expected to provide IL instruction in the classroom so librarians are only able to teach IL instruction in a classroom if a faculty member requests an IL instruction session. Research has shown that information literate students are more likely to be successful in college (Jones-Kavalier & Flannigan, 2008; Patterson, 2009). As shown in the previous discussion, students who do receive IL instruction through the five programs receive IL instruction that will benefit them in their education and beyond. However, not all students in the five programs receive IL instruction. Not having IL widens the educational gap for students who started college with low IL in the first place. In today's world of information being created at an almost exponential rate, people need to be information literate to survive in academia, the workplace and at home, let alone thrive in any of those places.

Community college students are more likely to start college with lower levels of IL than their 4-year counterparts (Patterson, 2009; Rosselle, 2009; Thomas, 2000). We know that over 40% of community college students already start college with a deficit in their IL skills due to secondary education that was also lacking on IL instruction (Rosselle, 2009).

Students that start college with lower levels of IL will be at a further disadvantage at the end of their community college education, whether the student moves into the workforce or transfers to a 4-year university then their peers who have had access to IL instruction and the students at the 4-year university who had already started their college with a higher level of IL.

Among programs

There is inequity between programs. Not all programs serve all the students in the community college in which the program is located. There is inequity of IL instruction within three of the five CC's studied. Some programs are able to provide IL instruction to most of one course's classes, some programs see only a few classes in a semester. Two programs have IL instruction for all classes in at least one course: Program Four provides IL instruction sessions for almost all Comp I, Comp II, and Speech classes and Program One provides IL instruction sessions for almost all Comp II classes. Even though Composition faculty at the community colleges for Programs One and Four are expected to have the librarian come into their classroom, some faculty do not. Librarian Four still needs to actively contact instructors to schedule an IL instruction session, *"if it gets to be about midway through the semester and I haven't heard from some people, I will actively contact instructors."*

The other three CC IL instruction programs present just a few IL instruction sessions each semester. This means that it is very likely that students who start college and finish with an associate's degree with Program Four will graduate having seen the librarian at least three times, once in Comp I, once in Comp II, and once in Speech. Program One will have seen students, who get their full associate's degree, at least once in their Comp II class.

Many students from Programs Two, Three, and Five will graduate without ever having received an IL instruction session. This leaves these community college students at a disadvantage as compared to their peers at graduation and those who chose to transfer at a further disadvantage in the university than their 4-year counterparts who started with higher levels of IL and more likely had access to further IL instruction in their first two years at the university (Patterson, 2009; Rosselle, 2009; Thomas, 2000).

This research has shown that all five programs are providing IL instruction that teaches students how to successfully find information using library databases, how to effectively use the internet for information search, use keywords and subject terms, and limit the search and use proper search language for the information retrieval system at use. Three of the five teach students to evaluate the information found and cite the source of the information. These skills are helpful in academic research and personal research outside of the school setting. Students with these skills are more likely to do better in their classes, and the rest of their academic career (Jones-Kavalier & Flannigan, 2008; Patterson, 2009). Unfortunately, not all students in all five programs are receiving IL instruction before they graduate.

Online education

Online classes have a higher drop rate than face-to-face classes (Haynie, 2015) and may actually widen the achievement gap for students who are already struggling academically (Jaggars, Edgecombe, & Stacey, 2014). No program studied has IL instruction specifically for online students. Online classes do not have IL instruction even when the same on-campus classes do. Research findings have revealed that out of sixty-two ARL

[Association of Research Libraries] that provide library services to the distance users, 64% (40) do not have a way to get a list of their registered distance patrons (Yang, 2005, p. 95). In other words, librarians do not know how to reach those users in a more personal way. Faculty who do not know IL instruction is available for their students are not likely to seek IL instruction out. Without a way for librarians to directly contact instructors who teach online it is difficult to get the word out.

Librarians in the programs studied do not usually know which students are in online classes, nor do they know what faculty are teaching online classes. Some librarians do outreach to faculty through contacting department heads, but have not received any requests from online faculty for IL assistance for the instructor or the students. Without the ability to contact the faculty teaching online courses to arrange some sort of IL instruction, online students are being left out of receiving IL instruction from the librarian.

Limitations

This study was limited to community colleges in one rural, agricultural, Midwest state. The sample included programs from three out of four Carnegie Classification represented in the state, Rural-serving Medium, Rural-serving Large, and Suburban-serving Multicampus. Public community colleges have seven different classifications. The state studied has community colleges represented in four classifications: Assoc/Pub-R-S: Associate's--Public Rural-serving Small, Rural-serving Medium, Rural-serving Large, and Suburban-serving Multicampus. There were no schools in the Rural-serving Small classification that chose to participate. This study, because of the state studied, also excludes representation of the following classifications: Public Suburban-serving Single Campus,

Urban-serving Single Campus, and Urban-serving Multicampus. Limits also include data collected. Only librarians were interviewed, there are no administration or student voices in this research.

<div align="center">

Implications

</div>

Students

Implications for students include the inequity of IL instruction leading to some who have had and some who have not had IL instruction. The inequity is more pronounced between on-campus students and online students. None of the schools studied provide instruction for online courses. It is likely that students in online courses need IL instruction as much or more as students in face-to-face classes, and may even need digital literacy instruction to help students persist in the online class. Students who take their Comp and Speech classes online will likely not have any access to IL instruction leaving them at a disadvantage when seeking information for a project of any other information seeking need.

Faculty

This study showed the importance of faculty buy-in for IL instruction to happen at community colleges. As faculty are the 'gatekeepers' of the classroom it is their responsibility to help create a place for IL instruction in their classroom. Implications are not just for Comp I & II faculty, but for all faculty in all disciplines. Faculty in other disciplines, particularly those that require any sort of research, also need to include IL instruction in their classroom.

Another implication for faculty is the impression that students are already information literate because they are from the age of technology. Being able to use technology may mean

that a student has digital literacy but not necessarily information literacy. Faculty need to be aware that many students in community colleges are not as information literate as faculty may think. Incorporating IL instruction in the classroom and assignments and working with the librarian to create assignments that incorporate IL instruction are good additions to having an IL instruction session from a librarian.

Librarians

Implications for librarians involve ideas for outreach to faculty as well as showing community college librarians some ways information literacy is conceptualized and practiced at five different rural community colleges. The study can also assist others in creating IL instruction changes in their own community college libraries.

Outreach to faculty can take many forms, some ways that are used by participants in this study are emails to department chairs or heads, attendance at faculty meetings to inform faculty of what the library can offer them and their students, new faculty orientation, and an open house for faculty to come see the library and what there is available to assist faculty in teaching their classes.

This research also revealed how one program was expanded to include IL instruction for Comp I, Comp II, and Speech classes through collaboration with a department chair. Creating positive relationships with people who understand the value of IL instruction can assist in building an IL instruction program to serve the most students.

Administration

     The inconsistencies in IL instruction practice are likely to be because of lack of policies about information literacy or the instruction there of. The value of this research to community college and university administration is an understanding of the need for a culture of support for IL instruction. To help create policies that make IL a valued skill for their students to have before completion of their community college education. Creating policies that include IL instruction as a required part of the curriculum is one way to support a culture of information literacy in the community college.

     If a community college has a mandatory orientation or student success course, including basic IL instruction will allow students to at least know what the library has to offer them. Including IL instruction as part of the curriculum in mandatory orientation for first year students or student success classes would provide a stronger base for student success overall and give students another tool in their toolkit for success. Students who have IL instruction are more likely to succeed in their educational journey and beyond.

Recommendations for IL Programs

     Information literacy instruction should be provided to every student before they graduate. Including an information literacy instruction session in all mandatory student orientation classes or in all required composition courses are examples of how to provide information literacy instruction to the whole student body. Information literacy instruction needs to be made available to students in online courses as well. If a college has requited IL instruction in all Comp I courses, then the online courses needs to have an IL instruction

component as well. Making information literacy a requirement in the curriculum creates a culture of information literate students as well as faculty and administration.

Assessment of all students' information literacy skills to give to students, maybe those who are in the last course of the writing sequence, to assess the level of IL skills students have learned so far. Making sure to include a question or so to discover if the students have had an IL instruction session and in what course, can help build a case for explaining the need for information literacy instruction for all students. In all the different ways librarians 'sell' the library, from an open house for faculty to attending a curriculum development meeting, having data to support IL instruction is likely to make IL instruction a more appealing product.

Recommendations for Future Research

Issues for transfer students

Students are expected to have comparable education when transferring. This research shows that each IL instruction program has differing levels of IL instruction across schools. No IL instruction means students likely missed their window for receiving IL instruction. This is problematic for transfer students. Transfer students who have not had IL instruction in their first two years may not get the chance at the university, this puts the transfer students at a disadvantage as they are not prepared. It would be beneficial to conduct a research following transfer students from one school where some of the students receive IL instruction and some do not, to see if those who did receive IL instruction had higher rates of success in the university verses those who did not. Examining persistence rates among community

college transfer students who have had IL instruction in the community college compared to students who did not would be a fascinating study and fill a void in the research.

Administrators' perceptions of IL and the importance of IL instruction

This study also did not include any administrative voices. A number of the librarians mentioned administrative attitudes or understandings of IL as a barrier to further growth of the current IL instruction program. None of the community colleges have the words 'information literacy' in their mission or vision statements which means it is likely that IL is not a priority with the administration. It would be interesting to understand what administration of community colleges believe about IL and the value of IL instruction.

ACRL framework

Because this research was designed and data collection basically completed when the *Framework for Information Literacy for Higher Education* was filed in February 2, 2015, data were not analyzed using the new definition of IL. The modified definition of information literacy is: "Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning" (ACRL, 2015). The new *Framework for Information Literacy for Higher Education* consists of six parts:

- Authority Is Constructed and Contextual

- Information Creation as a Process

- Information Has Value

- Research as Inquiry

• Scholarship as Conversation

• Searching as Strategic Exploration

It would be interesting to see if the information literacy instruction sessions observed and the

librarians' views of information literacy are aligned with the new definition of and

framework for information literacy.

APPENDIX A. INFORMATION LITERACY COMPETENCY

STANDARDS FOR HIGHER EDUCATION

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:
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:
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.

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

2. The information literate student revises the development process for the product or performance.
   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
3. The information literate student communicates the product or performance effectively to others.
   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:
The information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology.
   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

2. The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources.
   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
3. The information literate student acknowledges the use of information sources in communicating the product or performance.
   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
http://www.ala.org/acrl/standards/informationliteracycompetency#stan

APPENDIX B. INFORMATION LITERACY IN COMMUNITY COLLEGE: A SURVEY

Block 1: Basic library information

Q1.1. Demographic information:

Name: Last, First

Q1.2. Name of your community college.

Q1.3. Job Title

Block 2: Information literacy Instruction information

Q2.3. Number of Information Literacy presentations/sessions conducted in the 2013/14 school year?

Q2.4. Information Literacy Instruction

What types of presentations/sessions were they? (Check all that apply)

   Assignment specific presentation

   General session

   First-year seminar/orientation

   Student success class

   Library orientation

   Other

Q2.5. How many librarians at your institution conduct information literacy instruction presentations/sessions?

   Full time/ Part time

Q2.1. Information literacy Instruction information

Does your postsecondary institution have the following, or has it done the following? Yes/No

Is information literacy incorporated in student learning/student success outcomes at your college? Yes/No

Does your library provide information literacy instruction services to developmental courses? Yes/No

Does your library provide information literacy instruction services to online courses? Yes/ No

Thank you for your time. Please send any comments or questions to April L. Anderson at andersal@iastate.edu.

Survey Powered By Qualtrics

APPENDIX C. HUMAN SUBJECTS APPROVAL AND INFORMED CONSENT

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

Date: 10/29/2015

To: April Lynne Anderson
N147 Lagomarcino Hall

CC: Dr. Linda Serra Hagedorn
E262 Lagomarcino Hall

From: Office for Responsible Research

Title: Information literacy instruction: Conceptions and Practice of Information Literacy Instruction in Iowa Community College

IRB Num: 13-484

Approval Date:	10/29/2015	**Continuing Review Date:**	11/4/2017
Submission Type:	Continuing Review	**Review Type:**	Expedited

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University. Please refer to the IRB ID number shown above in all correspondence regarding this study.

Based on the information you provided in Section II of the IRB application, we have coded this study in our database as being:

☒ Permanently closed to the enrollment of new subjects, where all subjects have completed all research-related activities, and the study remains open only for long-term follow-up of subjects.

☐ Open only for data analysis.

Even though enrollment of subjects has ended, continuing review is required until human subjects are no longer involved and all data are completely de-identified. Check the website, http://www.compliance.iastate.edu, for further guidance on continuing review requirements.

Please also be sure to **promptly report** any of the following to the IRB: (1) **all serious and/or unexpected adverse experiences** involving risks to subjects or others; and (2) **any other unanticipated problems** involving risks to subjects or others.

To re-open enrollment or initiate research-related interaction with subjects, you must submit a Modification Form and receive IRB approval prior to contacting subjects. Upon completion of this project, please submit a Project Closure Form to the Office for Responsible Research.

Please do not hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.

INFORMED CONSENT

Title of Study: Information Literacy Instruction: Conceptions and Practice of Information Literacy Instruction in Iowa Community Colleges

Investigators: April L. Anderson
                            Linda Serra Hagedorn

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION

The purpose of this study is to examine the Conceptions and Practice of Information Literacy Instruction in Iowa Community Colleges. You are being invited to participate in this study because you are a librarian who teaches information literacy instruction sessions at your institution.

DESCRIPTION OF PROCEDURES

If you agree to participate, you will be asked to participate in 2 interviews of up to 60 minutes each. I would prefer to do at least the first one face-to-face and the other can be done by phone or electronically through Skype. All interviews will be digitally audio recorded and downloaded onto a password protected computer. They will then be deleted from the digital recorder. The interviews will be transcribed by a paid third party. You will have the opportunity to review the transcripts and to redact (remove) anything that you perceive either as inaccurate or would prefer not to include

Observations will be conducted of the librarian's instruction of an information literacy session in four to six courses, preferably Composition I and II. All observations will be done without recording and only taking field notes. This is to protect student identities. No names will be recorded, only the course type, example: Composition I or II, will be recorded.

Documents requested from the librarian: Anything related to the information literacy instruction program. These documents could be outlines, notes, frameworks for the information literacy instruction program, course proposals and applications for curriculum modification that include information literacy. Also any language regarding policy or mission statements that helped frame the information literacy instruction used at your institution.

RISKS

All interviews will be done in private. However, there is a possibility that a negative statement could be heard. Every effort will be taken to eliminate this possibility, including a redaction process after the interview is transcribed

BENEFITS

If you decide to participate in this study, there may be no direct benefit to you. It is hoped that the information gained in this study will benefit society by helping to understand the information literacy instruction models used in Iowa and to help suggest ways for strengthening information literacy in Iowa community colleges.

COSTS AND COMPENSATION

You will not have any costs from participating in this study. You will not be compensated for participating in this study.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. You can skip any interview questions that you do not wish to answer.

CONFIDENTIALITY
Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken: All data will be kept on a personal password protected computer and all files will be encrypted. Transcripts from interviews will have gender neutral pseudonyms assigned to the participant. The transcripts will be sent back to you for your review, this is a redaction process, whereas if a statement made by you is one in which you choose to have stricken from the data because of possible negative repercussions, you can do so.

The list of pseudonyms will be kept in a different location than the rest of the data, in hard copy in a locked box in the researcher's home. The list of identifiers and pseudonyms will be destroyed as soon as the project is complete and turned in. All other data will be kept without identifiers for two (2) years after the study is complete. Although we are committed to protecting your identity to the best extent possible, we cannot ensure complete confidentiality. Someone may be able to infer your identity, as the study is with a small and specific group of people.

QUESTIONS OR PROBLEMS
You are encouraged to ask questions at any time during this study.
For further information about the study contact

April L. Anderson
andersal@iastate.edu
515-441-0839
or
Linda Serra Hagedorn
lindah@iastate.edu
515-294-5746

If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

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PARTICIPANT SIGNATURE
Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document, and that your questions have been satisfactorily answered. You will receive a copy of the written informed consent prior to your participation in the study.

Participant's Name (printed) _____

_____   _____
(Participant's Signature)   (Date)

APPENDIX D. INTERVIEW PROTOCOL

Thank you for participating in this research study. This study seeks to investigate the relationships between conceptual understandings of information literacy and practice of information literacy instruction in community college libraries. The interview questions will focus on the mission and outcomes of your library's information literacy program. You may choose not to answer any question if you feel uncomfortable about answering.

1. Can you share with me your role in information literacy instruction?

2. How do you see the instruction/information literacy goals supporting the college's mission?

3. How would you describe the library's information literacy instruction program?

4. What are the goals of the information literacy instruction program?

5. How is the instruction mission of the library implemented?

6. What are the enablers to realizing the mission?

7. What would see as strengths of your program which enable you to achieve your mission?

8. What barriers are there to implementing the college's mission and goals of information literacy, if any?

9. According to the ACRL definition of information literacy, IL is on a continuum of information access to information use. How are these facets of IL realized in the library's instruction program?

10. What was the process used in developing your information literacy instruction sessions?

11. How do you measure student IL outcomes, or know that they are realized?

12. What do you see for the future of information literacy instruction at your institution?

13. What Il instruction is available for online students?

14. What IL instruction is available for developmental/remedial education students?

15. Does your college have any online ILI tutorials available for your students? (If yes, go to a, b, & c. If no, go to d.)

    a. What was the process used in developing the tutorial?

    b. What are the outcomes for students who engage in the library's tutorials?

    c. Can you discuss the strengths and weaknesses of existing information literacy tutorials?

    d. Is your library developing any tutorials, (if yes) what is the vision behind these and what are the expected outcomes?

APPENDIX E. OBSERVATION PROTOCOL

Observations of teaching and learning:

    I.   What ACRL Standards are being taught?

    II.   Is instruction inclusive of all students, ex: race, gender, identity, language understanding, discipline, and topics of study?

    III.   Does instruction include discussion/inclusion of lifelong learning concepts?

    IV.   Is there space for student questions?

    V.   Are all students' questions answered equitably? Is anyone left out of being able to ask their question?

    VI.   What questions are being asked?

    VII.   Are the students involved?

    VIII.   Is there an assignment for this session?

    IX.   Does the instructor appear to be engaged?

    X.   Multiple teaching methods involved?

    XI.   Opportunities for out of class involvement of materials?

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