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# Exploring the development of information literacy concepts among community college students

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**Exploring the development of information literacy concepts  
among community college students**

by

Lisa Anne Hermann Stock

A dissertation submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of

**DOCTOR OF PHILOSOPHY**

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**DEDICATION**

This  
dissertation  
is dedicated to my parents,  
Ken and Mary Stock,  
who taught me to believe I would be successful;  
and to my children,  
Allyson and Maxwell,  
who are my proof.

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**ABSTRACT**

The purpose of this qualitative study was to explore the experiences of community college students and their development of the concept of information literacy. The participants' individual definition of information literacy was explored as well as the people, places, and events that helped shape their concept of information literacy. Data were gathered applying narrative inquiry using a combination of interviews and document analysis. It was anticipated that reflection on their prior experiences would illuminate the meaning students make of information literacy, and could help inform instruction for future students.

Information literacy had different meanings to each of the participants. There was no one clear description of the term or the concept. Themes that emerged were centered on types of resources, documentation systems, and fears of plagiarism. Information literacy did not emerge as a process learned over time by these students.

This study was conducted using a small sample of students (7 students) from one institution and should not be generalized to other populations. A larger study conducted nationwide is needed to gain a national perspective of information literacy development in students. Further research should be conducted to assess the experience instructors in the K-12 systems as well as in community colleges systems have with learning and teaching information literacy skills. In order to affect change and proceed with the recommendation that instructors are also trained to teach these skills, there must be an understanding of the level at which instructors operate as well as standards that currently exist which support a shift to embedding information literacy into the curriculum.

## CHAPTER 1. INTRODUCTION

*What an amazing place! I've never seen so many books in such a small area...She began looking around at the rows and rows of books...*  
(Keene, 1970, p. 22)

As I began my research I recalled a memory. I am in my early 30s in my sister's attic. I uncover a box of books, and on top find my favorites—Nancy Drew. I smile to myself and open the cover of one. In schoolgirl printing is my name: Lisa Stock; P. O. Box 420; LeClaire, Iowa. I tip the book up to look closer, and a homemade library checkout card slips out with my sister's name on it. This makes me chuckle. I was on my way to becoming a librarian at 8 years old. It also makes me smile to think about what a fine I could levy on my sister after 25 years! This memory is important as I reflect on the people, places, events, and experiences that brought me to the place I am today—conducting dissertation research on community college students and their knowledge of information literacy skills.

These musings prompted me to visit my local public library to look for my old friends. I approached the shelf of Nancy Drew novels and was amazed by the array of formats. There were my old, comforting, familiar hardbacks, paperbacks that I had never seen before, and strange new books called graphic novels. This new genre was alien to me. The books had the same characters and plots, but were presented like comic books. I considered these familiar and unfamiliar works, and pondered whether students' experiences with information literacy and libraries were similar. As I began my research, some of these experiences seemed comfortingly familiar, while others were vastly different and strange to me.

As a librarian at a community college and a mother, I was curious about how students go about the research process. I have seen a change from the time I was a student to when my eldest child was a student, and now to my teenaged son. The change involves a different story, a different way of looking at the information in the world. I was curious about these changes in my children and in other students. I was also curious about the experiences or opportunities students have undergone to develop their knowledge of information literacy and the research process.

### **Background**

Information literacy is defined as a set of abilities requiring individuals to recognize when information is needed and to have the ability to locate, evaluate, and use effectively the needed information (American Library Association [ALA], 1989). The Presidential Committee on Information Literacy stated that, "...information literacy is a survival skill in the Information Age" (ALA, 1989, p. 3). Now, more than ever, with the advent of the information age, students must be confident and comfortable in libraries and with library resources to fulfill their academic goals.

The importance of information literacy skills and the academic library in the success and life of students has been studied over the years (Breivik, 1998; Kuh & Gonyea, 2003; Sellen, 2002). There is a growing need for students to develop information literacy skills and critical thinking skills in higher education to keep up with changing information needs. Information literacy skills enable people to improve their lives through access to knowledge and information which are pathways to economic and personal self-improvement and fulfillment (Stern, 2002).

One of the ultimate goals of information literacy training is to produce critical thinkers. This need for critical thinking skills is supported by Tsui (2002), who made the following statement while reflecting on methods for fostering critical thinking:

Higher-order cognitive skills, such as the ability to think critically, are invaluable to students' futures; they prepare individuals to tackle a multitude of challenge that they are likely to face in their personal lives, careers, and duties as responsible citizens. Moreover, by instilling critical thinking skills in students we groom individuals to become independent lifelong learners – thus fulfilling one of the long-term goals of the educational enterprise. (p. 740)

Unfortunately, this need for critical thinking is often left unsatisfied. The information process is not explored as a means to developing these skills. Rather, “information is viewed as a thing or product to be given out, the right answer and the right source, rather than as an impetus for learning or changing constructs” (Kuhlthau, 2004, p. 3).

There is a body of knowledge outlining information literacy as an important skill (ALA, 1989; Breivik, 1998; Hiss & Boatright, 2003; Holleman, 1990); however, there is a lack of evidence that a significant amount of progress has been made toward students obtaining these skills. The need to create information literate students is not new, but has intensified as the information world has exploded. In *Higher education in the Internet Age*, Breivik and Gee (2006) related the following:

Peter R. Young, the chief of the Cataloging Distribution Service at the Library of Congress, estimated that there were 29 million Internet users generating \$6 trillion in e-commerce and 35 billion e-mails daily. Young cautioned that only 16 percent of resources are indexed by any single popular search engine and that 83 percent of the sites indexed contain commercial content versus the 6 percent that are educational or scientific. (p. 23)

### **Information Literacy and the Community College**

While much of the literature on information literacy covers aspects of four-year institutions and can be applied to community colleges, there is a body of literature specific to community colleges. Hiss and Boatright (2003) described a required library skills course at the North Florida Community College that was started as a result of a recommendation by an accreditation team. The team focused on the need to ensure student competency in speech, computer and library skills. The college responded by developing a three-hour course called Essential Building Block (ESB). It was divided into three one-hour components: Computer Skills, Speech, and Information Skills.

There has been an attempt to apply the American College and Research Libraries Standards specifically to community colleges (Iannuzzi, 2000). The role of the learning resources center in building information literate students is described as the following:

- Work with faculty to develop curriculum, syllabi and assignments that focus on the research process and the development of information literacy.
- Join with faculty to explore and implement performance-based assessment methods.
- Identify campus partners on faculty development and help transform teaching and learning through information literacy.
- Collaborate with faculty to help define information literacy for their discipline.
- Identify and focus on library responsibilities toward information literacy and develop library instruction programs accordingly.
- Ensure that librarians teach the research process and its concepts, and do more than introduce electronic tools and technology to their patrons.

- Provide continuing education for librarians about teaching techniques, outcomes-based learning, and assessment. (p. 65)

Although now somewhat dated, an entire issue of *New Directions for Community Colleges* was devoted to the role of learning resources centers in community colleges (Holleman, 1990). In one chapter entitled, “Active Learning and the LRC,” the author stated, “One of the major goals of the library is to assist students in gaining competence in inquiry” (p. 114). As early as 1990, librarians were trying to establish their role as information literacy instructors at community colleges.

There are over 1,200 community colleges in the United States with enrollments that range from a few hundred to tens of thousands (Cohen & Brawer, 2003, p. xv). They fill a variety of needs for students. A large part of their development was associated with the need for trained workers to staff jobs in an increasingly industrial society. Enrollments in community colleges have increased dramatically over time. Cohen and Brawer (2003) noted the increase from over five hundred thousand students enrolled in 1960 to nearly 5.5 million by the end of the 1990s. Now these institutions offer students remedial, vocational, recreational, and academic avenues. Most recently, the transfer student has become very important to the community college. Students in large numbers are completing their first two years of college at more economical and local community colleges (Evelyn, 2001).

Added to their low tuition, open enrollment policies at community colleges provide access to underserved populations. Many students from low-income households and first-generation college students attend community colleges (Cohen & Brawer, 2003). Students at community colleges are more likely to be older, female, non-white, and from low-income

families than their counterparts at four-year institutions. The students tend to work more outside of school and attend classes more often part-time (Horn & Nevill, 2006).

### **Problem**

While the need is great to learn how to research, students are not showing signs of developing these skills. Mellon (1988) found that students were entering college with little, if any, knowledge of basic library tools, procedures, or terminology. A study conducted by Kuh and Gonyea (2003) assessed how often students took time to evaluate the resources they had found. An alarming one-fifth of all college seniors said they had never made judgments about the quality of the information they had obtained for use in their academic work. They were admittedly underprepared to live and work in an information-rich world. In a recent issue of the *Chronicle for Higher Education* an article appeared entitled, "Information Literacy Makes All the Wrong Assumptions." In it the author posited, "The typical freshman assumes that she is already an expert user of the Internet, and her daily experiences leads her to believe that she can get what she wants online without having to undergo a training program" (Wilder, 2005, p. B13).

Even after enrolling in college, students are not making use of their academic libraries. A large study conducted by the Online Computer Library Center (OCLC) reported that one-third of the survey respondents said their library use has *decreased* in the past three to five years (OCLC, 2005). Less than one-half (46%) of the college students in this same survey sought help with library resources from any staff member. A national survey completed in 2002 by the Pew Institute showed that students believed the Internet to be a

functional tool that had greatly changed their lives. Nearly three-quarters of college students said they used the Internet more than the library (Pew, 2002).

From the low level of preparedness and lack of library use witnessed by librarians and instructors at the college level, it is easy to believe that students are not receiving instruction or getting experience with library resources and skills required to prepare them to succeed in college. Research suggests that students are not comfortable with the tasks and rely too heavily on Internet sources that they feel are easy to locate. It is not easily discernable what they do and do not know about information literacy, nor is it clear where or how they developed this knowledge. (Caspers & Bernhisel, 2007; Geffert & Christensen, 1998; Gross & Latham, 2007; Weiler, 2001).

### **Purpose**

The purpose of this study was to explore the experiences of six to eight Des Moines Area Community College (DMACC) students and their development of the concept of information literacy. Community college students' voices and stories have not been captured to illuminate this process of information literacy development. Much of the background information to date has examined the information literacy competencies of incoming freshman in four-year institutions, but has not investigated the experiences that may have led to these outcomes. It was anticipated that reflection on their prior experiences would illuminate the meaning students make of information literacy, and could help inform instruction for future students.

## **Research Questions**

The following questions guided this study:

1. How do community college students describe their concept of information literacy?
2. How do they describe the people, places, events, and experiences that shaped their understanding of information literacy?

## **Significance**

The significance of this study lies in the illumination of students' experiences in regard to information literacy skills. The study investigated the behavior and thoughts of community college students; in particular, a segment of the education population that is largely missing from the literature. The stories gathered could be used to illustrate to administrators in community colleges the need for information literacy instruction being infused into the curriculum. It could also serve as a vehicle for cooperation between public libraries, K-12 school system libraries, and college libraries.

## **Theoretical Perspectives**

This study was conducted as a basic interpretive qualitative study. Merriam (2002) stated that, in this type of study, "the researcher is interested in understanding how participants make meaning of a situation or phenomenon, this meaning is mediated through the researcher as instrument, the strategy is inductive, and the outcome is descriptive" (p. 6). The goal of the study was to provide a rich, descriptive account of the findings and situate it in the literature that framed the research. In addition to interpretivism, the development of information literacy skills was explored using the framework of social learning theory, social cognitive learning theory, and self-efficacy.

## **Interpretivism**

The need for understanding of an event or social action beyond purely scientific or positivist's viewpoint of science and causation gave rise to the notion of *Verstehen*, or the interpretive understanding of human interaction (Bogdan & Biklen, 2003). The interpretive model stresses the respect of the individual person. According to Garrick (1999), "A central tenet of this domain is the belief that individuals are not merely passive vehicles in social, political and historical affairs, but have certain inner capabilities which can allow for individual judgments, perceptions and decision-making-autonomy" (p. 149). Furthermore:

Interpretive practice engages both the *hows* and the *whats* of social reality; it is centered both in how people methodically construct their experiences and their worlds and in the configurations of meaning and institutional life that inform and shape their reality-constituting activity. (Gubrium & Holstein, 2000, p. 488)

## **Social Learning theory**

This study was framed by social learning theories. Proponents of social learning theory posit that people learn through interactions with each other (Bandura, 1977b; Bloor, 1983; Harre, 1995). A common system of language, vocabulary, and practices among people in a social context allows learning to occur (Mentkowski, 2000). The Information Literacy process is a structured one, built around a process and formalized by a set of Standards (Association of College and Research Libraries [ACRL], 2000). Sharing this process among students and having repeated chances to learn is imperative to the development of these skills and concepts.

These principles are closely related to the work of Jerome Bruner. Bruner spoke of the constructive nature of knowledge and the concept of schema. Bruner (1973) defined

schema as “that integrated, organized representation of past behavior and experience which guides individuals in reconstructing previously encountered material which enables people to go beyond evidence, to fill in gaps, to extrapolate” (p. 5).

While studying the development of information literacy skills and concepts, it is important to think more broadly about learning styles and learning theories. Standard Three of Information Literacy Competencies for Higher Education (ACRL, 2000) includes the concept of “incorporating selected information into his or her knowledge base and value system.” Further, it goes on to state, “the information literate student synthesizes main ideas to construct new concepts” (p. 11). This building on earlier experiences and incorporating them into ones’ thinking framework is the basis of cognitive social learning.

### **Social Cognitive theory**

Building further on social learning theory is the concept of social cognitive theory. This shift in theory takes into account that human beings rely on self-reflection and past experiences to shape their learning experiences (Bandura, 1986). Pajares (2002) further stated that “social cognitive theory is rooted in a view of human agency in which individuals are agents proactively engaged in their own development and can make things happen by their actions” (n.p.). This framework was helpful in examining how students’ past and ongoing experiences were related to their development of information literacy concepts and information literacy skills.

### **Self-efficacy**

The concept of self-efficacy stems from the realization that behavior is formed by experience and one’s own perception of how well they are performing a task (Bandura,

1986). Later, Bandura (1997) identified four sources of efficacy development: mastery experiences, physiological and emotional arousal, vicarious experiences, and verbal persuasion. Mastery experiences incorporate a person's own experiences and past behavior that they have found to be successful or not useful. Arousal refers to how a person physically or emotionally feels about the task at hand. Vicarious experiences are those that we experience through observation and modeling. Verbal persuasion has been likened to cheerleading or receiving "pep talks." The concept of self-efficacy and the ability to learn how to learn are linked to the development of information literacy. Kurbanoglu (2003) explored this relationship and revealed that "individuals must feel confident in using certain technologies and skills in order to employ them effectively" (p. 636).

Learners of the future will need to exercise more control over determining what they need to learn and how they will accomplish the task (Gooler, 1990, p. 322). The need to continually adapt information literacy skills to match the development of new technologies and information mediums illustrates this need for self-efficacy or self-regulated learning. The current study explored the patterns of learning and self-efficacy that may or may not be present in these students' lives.

## **Research Strategy**

### **Narrative inquiry**

This interpretive study utilized the strategy of narrative inquiry. Narrative research is a form of inquiry in which the researcher studies the lives of individuals and asks one or more to provide stories about their lives (Creswell, 2003, p. 15). Clandinin and Connelly (1990) suggested that it is well-suited for the study of education because "humans are

storytelling organisms who individually and socially, lead storied lives” and that “teachers and learners are storytellers and characters in their own and other’s stories” (p. 2). The researcher is an important part of narrative inquiry. The data gathered are retold or restoried by the researcher into a narrative chronology. It is combined with views and experiences from the researcher’s life into a collaborative narrative (Clandinin & Connelly, 2000). The students in this study were asked to tell the stories of the development of information literacy in their lives.

The narrative inquiry technique was appropriate for this study because I was interested to determine how these students made meaning of their experiences of information literacy within their life stories. I was curious about how different people, places, events, and experiences may have helped to shape their overall stories. I did reflect upon my own experiences as their stories unfolded, ultimately comparing those experiences against my own.

### **Delimitations**

This study was conducted in a single community college in the Midwest. The participants were students who completed at least 24 semester hours of classes and had completed or were presently enrolled in an English Composition II course. They were students who were able to produce at least two examples of research papers, one from an English Composition II course as well as one from a discipline course for document analysis.

### **Summary**

This study proposed to inform the scholarship of higher education and policymakers in terms of teaching or introducing the concepts of information literacy to students. It sought

to help illuminate the experiences of these students and provide insight into the people, places, events, and experiences that may play important roles in the development of information literacy concepts. While studies have been conducted in four-year institutions and graduate level programs, the perspective of community colleges has not been thoroughly expressed.

Chapter 2 provides an overview of the research associated with the concept of information literacy as well as the development of information literacy skills in students. Studies were reviewed to ascertain the role of social learning theory and the development of information literacy.

## CHAPTER 2. LITERATURE REVIEW

*The group entered and immediately began their search. George looked through a pile of newspapers in a corner. Those of local origin did not contain any stories which might give a clue, but on the bottom of the pile she noticed a Florida paper. Suspicious, she called Nancy over and showed it to her. "There might be something here Mr. Prize wanted to keep," she said. "Help me look at all the articles." (Keene, 1969, p. 47)*

The use of literature reviews can serve several different purposes. It can share the results of studies similar to the study underway; it relates the study to the larger context of the issue involved, and can show gaps in the existing literature. Qualitative researchers should be careful to maintain the inductive quality of their study and use literature sparingly (Creswell, 2003). However, researchers can be helped with analysis, once in the field, by familiarity with substantive literature in their area (Bogdan & Biklen, 2003).

For this study, several areas have been identified as important to consider. These include research describing profiles of community college students now and in the future; the role of information literacy programs in higher education; and the concepts of social learning and self-efficacy as they pertain to information literacy.

### **Community College Students**

The United States Congress passed the Morrill Act in 1862, which granted each state 30,000 acres of federal land on which to establish a university. The purpose of these public universities were to prepare students for careers in agriculture, engineering, and military science. At the same time, the concept of public high schools was taking hold to offer education to children beyond elementary school. Later, it was perceived that an additional bridge between high school and the institutions of higher education was needed. There was

also a need for trained workers that was not being met by the traditional universities (Cohen & Brawer, 2003). Today a diverse group of students attend community colleges for a large variety of reasons. While it is impossible to detail all the diverse student groups that enroll in community colleges, it is important to get a feel for some of the trends shaping the community colleges and set the context for this study.

### **Current students**

Over 10 million students attend credit and non credit offerings at community colleges in this country. Compared to students at four-year institutions, community college students are more likely to be older, female, and from low-income families, and are less likely to be Caucasian. Nearly half (47%) are younger than 24 years. Students in their late 20s accounted for 18%, while those 30 and older comprised 35% of the community college students (Horn & Nevill, 2006). Currently, the average age of the community college student is 29, but this number is decreasing. There has recently been an increase in the number of traditional-age students (17-21) (Phillippe & Sullivan, 2005).

Students choose community colleges for many reasons. These include proximity to home, low cost, availability of programs, and opportunities for remediation. Community colleges have also become increasingly concerned with the transfer function for students seeking to obtain a bachelor's degree (Miller, Pope, & Steinman, 2005). The percentage of adults earning an associate degree, the highest degree offered by community colleges and most often used for transfer purposes, has risen from 6% to 8.4% during the past decade (Chronicle of Higher Education, 2006).

Despite the rising numbers of traditional-age students, community colleges still primarily serve independent students. Students are considered to be “independent” if they meet any of the following criteria: age 24 or older, veteran of the armed forces, enrolled in a graduate or professional program (beyond a bachelor’s degree), married, orphan or ward of the court, or have legal dependents other than a spouse. In addition, financial aid officers may designate students who do not meet these criteria to be independent if the students can document they are, in fact, self-supporting (Phillippe & Sullivan, p. 176). Approximately one-third of independent community college students were married parents and one-fourth were single parents (Horn & Nevill, 2006).

### **Non-traditional**

Pascarella and Terenzini (1998) described the community college population as consisting of “disproportionate numbers of non-resident, part-time, older, non-white, and working class students” (p. 155). These non-traditional students are often associated with community colleges. The definition of non-traditional students varies in the literature, and even more widely from institution to institution (Kim, 2002) Recently, a Chronicle Forum (Chronicle of Higher Education Online, 2006) entitled, “What the heck is a non-traditional student?” was created. This forum had 83 postings from August 2006 through October 2006. The majority of respondents agreed that a traditional student was 18-24 years old and a full-time student, but there was no common agreement as to what constituted a non-traditional student.

In a work dedicated to enhancing the experiences of commuter students Stewart and Rue (1981) identified non-traditional students as being 25 or older. Some factors included in

the analysis were commuting, age, and part-time attendance. Bean and Metzner (1985, p. 488) offered the suggestion that non-traditional students be considered those who were *not* 18-24 years old, and attending college full-time.

### **In need of remediation**

Forty-three percent of students who enrolled in community colleges reported having taken a remedial course as compared to 28% enrolled in four-year institutions (Horn & Nevill, 2006). Cohen and Brawer (2003) postulated, “By their nature, by deliberate intent, the community colleges sought to become open-access institutions” (p. 70). This commitment to educating all comers has produced some large challenges in the area of unprepared and underprepared students. These students have backgrounds and academic experiences that have not prepared them for the reading, writing, or math demands of postsecondary education (Perin, 2004).

Little is known about the effectiveness of remedial education in community colleges. Most studies are descriptive and provide few comparisons between students that are remediated and those who are not (Bettinger & Long, 2005). Oudenhoven (2002) looked at five issues affecting remedial education in community colleges. These issues included: (a) what level of education should provide remediation; (b) how to provide services for diverse students; (c) resolving the inconsistency of policies and procedures; (d) mandatory placement; and (e) basic skills instruction embedded into the standard curriculum.

Oudenhoven concluded that:

There are no consistent standards for what constitutes a remedial student; assessment instruments and cutoff scores vary from institution to institution, even within the same state; placement in basic skills courses is not always required, despite assessed need; and although there are some promising

alternatives to course delivery, basic skills are taught, more often than not, in traditional stand alone classes with little connection to the regular curriculum. (p. 42)

### **Future students**

The changing face of the community college mirrors the changing face of the United States. Phillippe and Sullivan (2005, pp. 158-160) posited that, by the year 2015, there will be a growth of 4 million in the traditional-aged college student, with Hispanics accounting for 49% of that growth. This growth will be seen most dramatically in the states of California, Texas, New York, Florida, and Georgia. They postulated that, over the next decade, community colleges can expect an increase of approximately 13%. Distance education and dual enrollment of high school students will become increasingly important.

### **English as a Second Language (ESL)**

While not entirely new to community colleges, ESL programs have grown at a fast pace. Cohen and Brawer (2003) related that ESL expanded from 30% of the foreign language enrollment in 1983 to 43% in 1986, and 51% in 1991. At that time, it was estimated that approximately 250,000 students were taking ESL for credit, and nearly as many for non-credit (p. 327). Demographic shifts suggest there will be an increasing need for strong ESL programs in the future.

Blumenthal (2002) described several different categories of ESL programs at community colleges. There are academic ESL programs offered for credit, ESL classes offered to improve skills for students wanting to transfer to another institution, and adult education ESL programs offered to assist students in basic functions for everyday life or employment.

Another phenomenon, coined *Generation 1.5*, is also present in this new student population. Generation 1.5 students are U.S.-educated ESL students. They usually arrive in the United States as teens or preteens, and receive their education in U.S. middle schools or high schools. They have highly functional conversational speech and seem well assimilated; however, they encounter difficulties in grammar and pronunciation (Blumenthal, 2002, p. 49).

### **Millennials**

A group of students to watch and plan for now and in the future are the *Millennials*. This generation of college students has been called Generation Y, the Net Generation and Generation Next, but most often they are called *Millennials* (Alvermann, 2002; Howe & Strauss, 2000, 2003; Lancaster & Stillman, 2002; Oblinger & Oblinger, 2005). Millennials are described as being born sometime after 1982. Millennials exhibit the following characteristics. They...

- gravitate toward group activity;
- identify with their parents' values and feel close to their parents;
- spend more time doing homework and housework and less time watching TV;
- believe "it's cool to be smart";
- are fascinated with new technologies;
- are racially and ethnically diverse; and
- often (one in five) have at least one immigrant parent. (Oblinger, 2003, p. 38)

Millennials are multi-taskers who are smart but impatient; they expect immediate results. They usually own multiple electronic devices and know how to use them. When using computers, they often have several windows open, using various software from Instant Messenger and iTunes to Word (Carlson, 2005, p. A35). Frand (2000) posited that these students have an *information mindset*. Ten attributes are used to describe this *mindset*:

1. Computers are not technology. Students in this group have never known life without computers and the Internet.
2. The Internet is better than TV. These students do not like the inactivity of television.
3. Reality is no longer real. Things that appear real over the Internet may not be. Students are more wary of pictures and stories they read.
4. Doing is more important than knowing. Knowledge is no long the ultimate goal. Results and actions are considered more important than accumulation of facts.
5. Learning more closely resembles Nintendo than logic. Gaming requires trial and error. Students don't mind failing if they learn from it.
6. Multitasking is a way of life. Students are comfortable when engaged with multiple sensory tasks. They listen to music, send messages, do homework and chat on cell phones simultaneously.
7. Typing is preferred to handwriting. Penmanship is no longer taught throughout the school years.
8. Staying connected is essential. Students stay in touch with each other and their families throughout the day. They use a variety of methods including email, instant messaging and cell phones.
9. There is zero tolerance for delays. Students have grown up in a customer service culture and expect instant service. They believe help should be available 24x7.
10. Consumer and creator are blurring. It is a cut and paste world. Students lose track of creator, owner and consumer of information. They believe if something is digital, it is everyone's property.

### **Iowa Community Colleges**

In 1965, the Iowa General Assembly enacted legislation permitting the development of a statewide system of two-year postsecondary educational institutions. These were known as “merged area schools” and consisted of either community colleges or vocational schools (Iowa Department of Education, 1992). The Iowa Community College system currently consists of 15 community colleges, each having a local board. The boards are comprised of elected officials who represent the constituents of their merged areas (American Association of Community Colleges [AACCC], 2003).

The 2004 fall enrollment in Iowa public two-year colleges was 82,027, 8.7% of which was minority enrollment (Chronicle of Higher Education, 2006 p. 10). Females accounted for 56.4% of the Iowa community college population, which was predominately white (86.3%). The ratio of full-time (52.9%) to part-time (47.1%) students was fairly even, but the full-time students were overwhelmingly in the 18-21 year-old age group (68.5%).

Projected state demographics covering the years 2000 through 2010 indicate slight growth in minority populations of 1.4%, for a total of 7.0%. Growth in the Hispanic community would account for the largest projected increase at 0.6%, followed by Asian/Pacific at 0.5%. The number of high-school graduates was predicted to fluctuate over the same period of time, peaking in 2008 to approximately 35,000 and dropping off in 2010 to approximately 33,000 (AACC, 2003, p. 55).

## **Role of Information Literacy in Higher Education**

### **Justification of need**

There is increasing demand for students to become information literate and to develop critical thinking skills in order to become competent members of our modern society. This need for critical thinking skills was described by Rockman (2002):

With internal and external public pressures for students to graduate with skills commensurate with the academic rigor of a comprehensive program of study, universities in the last decade have sought to restructure their curricular offerings to bring them more in line with current societal needs to attract and retain students, and to help students progress toward graduation with critical reading, writing, thinking, and speaking well developed. Such restructuring would integrate the co-curriculum with the undergraduate experience; emphasize information literacy as an active learning process; inspire intellectual desire in students; promote the importance of continuous lifelong learning; and document to accreditation agencies, professional associations, legislative bodies, and other entities that under-graduate students are

graduating with skills, knowledge and abilities, viewed as valuable assets in the workplace, in graduate schools and in society at large. (p. 187)

There has been a shift in the mission of academic libraries to become more than mere repositories of resources. Today academic libraries must become centers for student learning, with the ultimate goal of producing information literate individuals. Students are no longer viewed as passive receivers of information. Rather, they must be coached through the ever-changing maze of information so that they can become sophisticated users of information resources and technologies (Breivik, 1998).

Another impetus for the need to manage information and information technology resulted from the efforts of the Clinton administration and the president's Technology Literacy Challenge. This challenge is referred to in the Department of Education Report: *Getting America's Students Ready for the 21<sup>st</sup> Century: Meeting the Technology Literacy Challenge* (U.S. Department of Education, 1996). In a letter contained within this work, the Secretary of Education, Richard W. Riley, stated:

Computers are the "new basic" of American education, and the Internet is the blackboard of the future. But the future is here and now, and we cannot miss this opportunity to help all of our young people grow and thrive. I strongly believe that if we help all of our children to become technologically literate, we will give a generation of young people the skills they need to enter this new knowledge- and information-driven economy. (p. 3)

Information literacy is defined as 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 (ALA, 1989). As early as 1989, the American Library Association issued a report on the need for time, money, and effort to be directed toward education in the area of information literacy. In the report from the Presidential Committee on Information Literacy, it was stated that information literacy is a survival skill in the Information Age. Instead of

drowning in a flood of information, literate people know how to find, evaluate, and use information effectively to solve a particular problem or make a decision (ALA, 1989).

The American College and Research Libraries (ACRL, 2000) stated:

Information Literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their learning. (p. 1)

This increasing need for students to become information literate gave rise to the creation of standards. The ACRL approved the following standards on January 18, 2000:

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

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

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.

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

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.

The need for information literacy skills is reflected by the National Assessment of College Student Learning (Jones, 1995). Some of the skills detailed in their report parallel the ACRL Information Literacy standards:

- Pre-writing Skills/College graduates should be able to research their subject and identify problems to be solved that their topic suggests. They should be able to locate and present adequate supporting material.
- Critical Thinking Skills/Evaluation skills: The ability to evaluate the credibility, accuracy and reliability of sources of information.
- Critical Thinking Skills/Inference skills: Collecting and questioning evidence, determining what is the most significant aspect of the problem or issue that needs to

be addressed, prior to collecting evidence. Determining if one has sufficient evidence to form a conclusion.

## Curriculum

A growing number of researchers believe that information literacy should be included into the curriculum of higher education (Holleman, 1990; Kuh & Gonyea, 2003; Lindauer, 1998; Rockman, 2002; Sellen, 2002; Shapiro & Hughes, 1996). Shapiro and Hughes (1996) actually called information literacy a *new liberal art*, and suggested:

It should extend from knowing how to use computers and access information to critical reflection on the nature of information itself, its technical infrastructure, and its social, cultural and even philosophical context and impact – as essential to the mental framework of the educated information-age citizen as the trivium of basic liberal arts (grammar, logic and rhetoric) was to the educated person in medieval society” (p. 3).

Sellen (2002) spoke to the need of including information literacy into general education:

One of the goals of general education is to give students the skills and knowledge to be citizens who live useful lives in a democratic world. The new technologies of electronic publication and the dissemination of information add another dimension to this citizenship. ... Minimally, information literacy gives students the skills to understand the structure, use, and evaluation of information. Through this understanding students gain a framework to evaluate the impact of these technologies on the decisions and choices they make... Using technology to its highest potential is the basis of information literacy, allowing it to stand on its own as an emerging and essential course in the general education for the 21<sup>st</sup> century. (p. 125)

There is support for changing university curriculum to include information literacy from external stakeholders including the business community. Rockman (2002) stated that Anthony Comper, president of the Bank of Montreal, told the 1999 graduating class at the University of Toronto that information literacy is essential to success in the next millennium:

Whatever else you bring to the 21<sup>st</sup> century workplace, however great your technical skills and however attractive your attitude and however deep your commitment to excellence, the bottom line is that to be successful, you need to acquire a high level of information literacy. What we need in the knowledge industries are people who know how to absorb and analyze and integrate and create and effectively convey information. (p. 188-189)

### **Community college setting**

In addition to the application of the Information Literacy Standards for Higher Education (ACRL, 2000) related by Iannuzzi (2000), and the required course at North Florida Community College (Hiss & Boatright, 2003) described in Chapter 1 of this research, there are other examples of community college efforts to infuse information literacy into the curriculum. The California State University and Community College system made a commitment throughout their entire organization. Their ultimate aim was to ensure that each graduate of the California State University knows how to find information, evaluate it, and use it effectively. Every graduate must also be able to demonstrate these skills in a performance-based test (Breivik, 1998).

One program in California that was developed as a result of this initiative is at the Glendale Community College Library (Moore, Brewster, Dorroh, & Moreau, 2002). Several different approaches are used to deliver information literacy skills. The program consists of on-demand instruction sessions, standardized workshop series, two transferable credit courses, and infusion of discipline-related research skills into major courses.

Many of the subjects important to community college librarians are covered in the work edited by Kalick (1992), and entitled *Community college libraries, centers for lifelong learning*. Topics are addressed, such as effective managers, urban college libraries, faculty perspectives, bibliographic instruction, and standards. Meisel (1992) stated, “Making our

students information literate—information literate not only in academia but in the world they will inhabit after leaving their campuses—is the obligation of all librarians; whether in the formal classroom setting or out on the reference floor, it is incumbent upon us to reinforce this awareness” (p. 110).

Loomba (1992) addressed the unique role of community college libraries. She outlined how community college libraries are expected to serve the students, the community, faculty and staff and local high school students. Loomba stated, “it is assumed that students reaching their doors know very little about library research, so each moment is a teachable moment” (p. 62).

### **Social Learning Theory/Self-efficacy**

#### **General**

As discussed previously, the concepts of social learning theory and self-efficacy were explored in this study. In order to explore these concepts, it is important to know their basis and to be aware of research applicable to information literacy. Self-efficacy beliefs provide the foundation of human motivation, well-being, and personal accomplishment. People have little incentive to act or to persevere unless they believe that their actions can be successful (Pajares, 2002)

From the earlier discussion of the new Millennial students, it is apparent that students now choose to be more self-directed and self-regulating. The concept of self-regulation linked closely to self-efficacy has been described by several learning theory scholars (Bandura, 1977a, 1997; Pajares, 1996; Schunk, 1985, 1989; Zimmerman, 2000). Self-

efficacy is an important component of lifelong learning. Bandura (1986) asserted that students who develop a strong sense of self-efficacy are well equipped to educate themselves.

Bandura (1977a, 1997) defined perceived self-efficacy as one's own judgment of the capabilities to perform a task. Self-efficacy is task specific and focuses on performance rather than personal qualities or characteristics. These judgments refer to the future. They allow students to describe how they think they will do on a specific task. They are not considered to be the same as self-esteem, but rather predictions by a person of how well they believe they will perform. They are often related to prior task reactions and are most predictive when a task is familiar (Zimmerman, 2000).

Pajares (2002) cautioned, however, that one's beliefs about their own competency and reality do not always match. Someone who is talented might not perceive their skill, while another student could possess inflated perceptions of her own skill. Self-efficacy alone cannot make a person successful in her endeavor.

Bandura (1986) described an optimal condition for instruction. He called it a guided mastery approach:

A variety of opportunities are provided for guided practice in when and how to use cognitive strategies in the solution of diverse problems. The level of social guidance is progressively reduced as competencies are being acquired. Activities, incentives, and personal challenges are structured in ways that ensure self-involving motivation and continual improvement. Growing proficiencies are credited to expanding personal capabilities. Self-directed mastery experiences are then arranged to strengthen and generalize a sense of personal efficacy. Each of these modes of influence is structured in ways that build self-regulative capabilities for exploratory learning and strengthen students' beliefs that they can exercise some control over their intellectual self-development. (pp. 226-227).

### **Information literacy and related topics**

Several researchers have found close ties between self-efficacy and information literacy. Kurbanoglu (2003) posited, “Societies of the information age need confident, independent, self-regulated learners equipped for lifelong learning” (p. 635). Kurbanoglu assessed students’ perceived self-efficacy using an 89-item self-efficacy scale. The findings revealed that students had a positive perceived self-efficacy, and it increased slightly through the years, with its highest level achieved in the third year of college. There was no gain in positive self-efficacy for the fourth year. The results indicated that students need more opportunities to practice skills and have positive experiences. Students need feedback and guidance in this process.

A similar study completed in an elementary school assessed levels of self-efficacy in different aspects of information literacy. Brown (2005) assessed 11 different phases of information literacy. Students scored themselves highest in these four phases: managing work, finding sources, choosing sources and evaluating solutions. They rated themselves lowest in locating information *within* a source, evaluating sources, and presenting information. Brown suggested that repeated self-assessment could help students become more aware of their strengths and weaknesses and could help them set appropriate learning goals.

An earlier study by McCarthy (1995) assessed students’ perceived effectiveness of using the university library. The study was designed to explore needs for an upcoming library expansion. Surveys were collected from 608 students who were asked to rate their effectiveness, satisfaction, and needs in the use of the library. The majority of the students perceived they were effective seekers and users of library resources, whereas 40% indicated

they were not satisfied with their searches for information and materials they had located. Students recommended better organization and availability of materials. They also wanted more books and journals, further training, and more staff and staff assistance.

The remainder of the studies reviewed in the current research paired self-efficacy and computers or online resources (Hasan, 2003; Monoi, O'Hanlon, & Diaz, 2005; Ren, 2000; Shih, 2004). These studies are more and more relevant in the digital age. Colleges are experiencing a large increase in online offerings, and the use of technology in the delivery of classes and resources (Ren, 2000). Ren posited that "performance is both the antecedent and the consequence of self-efficacy. On one hand, performance outcome is the most influential source of self-efficacy. Performance successes lead to high self-efficacy but failures to low self-efficacy. On the other hand, self-efficacy affects performance outcome. People are generally more interested in performing activities in which they have high self-efficacy" (p. 323)

Ren (2000) surveyed 85 students before and after library instruction. The findings revealed that student self-efficacy in electronic information searching increased after training. The study also assessed the relationship between self-efficacy and students' attitudes, emotions, and experiences. Ren concluded:

Library instruction has the potential to induce students to engage in electronic information searches on their own if it not only teaches technical skills but also cultivates self-efficacy beliefs. Self-efficacy and electronic information searching will reinforce each other so that higher self-efficacy leads to more frequent and effective electronic searching, which, in turn, further enhances self-efficacy. (p. 328)

### **Summary**

This chapter reviewed the evolution of community college students and their modes of learning. Just as information literacy has evolved to reflect changes in technology and delivery systems, so must learners evolve to interface with technology. The increased pace of learning, the de-emphasis of depth of knowledge, popular culture, and the changing needs of the workplace have combined to condition modern learners to process information differently.

The major topical areas informing this study were reviewed. In addition, the community college system in the U.S. and the characteristics of community college students were discussed to reveal the significance of information literacy in higher education with a special focus on community college. Social learning theory and self-efficacy were addressed to reveal the relationship to information literacy attainment by current students. The next chapter presents and discusses the research methods used in this study.

### CHAPTER 3. METHODOLOGY

*“I will tell you what I am trying to do. It’s a fabulous story.” Each of her listeners agreed to keep the matter confidential and leaned forward expectantly as she began.*

(Keene, 1972, p. 44)

The power of a story is undeniable. Clandinin and Connelly (1994) noted that stories give a point of reference (i.e., a way to imagine experiences): “...people live stories, and in the telling of these stories, reaffirm them, modify them, and create new ones. Stories lived and told educate the self and others” (p. 425). Narrative inquiry uses storytelling to capture individual experiences. It is described as being four dimensional: inward, outward, backward, and forward. Inward is described as the subject’s feelings; outward the subject’s environment; and the backward and forward refer to the temporal components—past, present, and future. According to Clandinin and Connelly, “to experience an experience—that is, to do research into an experience—is to experience it simultaneously in these four ways and to ask questions pointed each way” (p. 50).

The purpose of this study was to illuminate the experiences that help shape community college students’ concept and development of information literacy skills. The goal was to explore the experiences of a small group of students at Des Moines Area Community College.

Two research questions guided this study:

1. How do community college students describe their concept of information literacy?
2. How do they describe the people, places, events and experiences that shaped their understanding of information literacy?

These questions are best answered by using *qualitative* methodology. Qualitative research strives to look at the stories or descriptions that illuminate how people behave in the world.

Qualitative researchers explore processes and meaning of actions rather than end products or outcomes (Bogdan & Biklen, 2003).

The word *qualitative* implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured....Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. (Denzin & Lincoln, 2000, p. 8)

Qualitative research, also called naturalistic inquiry, is an “in-depth study of people, situations and events” (Mellon, 1990, p. 1). Lincoln and Guba (1985) described the following five naturalist axioms:

1. Realities are multiple, constructed, and holistic
2. Knower and known are interactive, inseparable
3. Only time- and context-bound working hypotheses
4. All entities are in a state of mutual simultaneous shaping, so that it is impossible to distinguish causes from effects
5. Inquiry is value-bound (p. 37).

### **Philosophical Assumptions**

The experiences that shape the concept and development of community college students' information literacy skills could be best described through their words, thoughts, and actions. The use of a constructivist epistemology enables students to construct their own meanings in regards to information literacy. According to Crotty (1998), “What constructionism claims is that meanings are constructed by human beings as they engage with the world they are interpreting” (p. 43). Constructivist researchers, in particular, strive to understand the contextual underpinnings of a given situation. Greene (2000) described the first task of the researcher as understanding “people’s constructions of meanings in the

context being studied, because it is these constructions that constitute social realities and underlie all human action” (p. 986).

In this research, the stories about the development of their concept of information literacy were gathered from community college students. The students’ experiences and the meaning of their experiences were explored by using the theoretical perspective of interpretivism, and framing it within social learning theories.

### **Methodological Approach**

#### **Narrative inquiry**

Narrative inquiry is a way of understanding ones own and other’s actions, of organizing events and objects into a meaningful whole, and of connecting and seeing the consequences of actions and events over time. It is not merely a chronology of events; it provides the point of view, feelings, and thoughts of the narrator. It is meaning making and retrospective. Contemporary narrative inquiry is a mixture of analytical lenses, diverse disciplinary approaches, traditional and innovative, that revolve around an interest in “biographical particulars as narrated by the one who lives them” (Chase, 2005, p. 651).

The use of narrative inquiry for this study was appropriate to capture the voices of community college students as they described their development of information literacy skills. Labov and Waletzky (1967) were among the first researchers to present the idea that ordinary people’s oral narratives of everyday experiences are worthy of study in themselves. Labov and Waletzky posited that narrative discourse consists of clauses that match the temporal sequence of reported events. They identified five sociolinguistic features of oral narratives:

1. Orientation, which informs listener about actors, time, place, and situation.
2. Complication, which is the main body of the narrative; it represents the action.
3. Evaluation is explained as the point of the story.
4. Resolution becomes the result of the action and
5. Coda, which returns the listener to the current moment.

Similarly, Chase (2005) described five analytic lenses of narrative inquiry. First, narrative is a distinct form of discourse that involves feelings, thoughts, and interpretations. Second, narratives are verbal action. Narrators “explain, entertain, inform, defend, complain, and confirm or challenge the status quo” (p. 657). Third, narrative researchers view subjects’ stories in relation to social and economical context. Fourth, narrative inquiry is interactive, variable, shaped by the setting of the interview. It is “a joint production of narrator and listener” (p. 657). Finally, narrative researchers view themselves as narrators as they develop interpretations and find ways in which to present or publish their ideas.

### **Reflexivity statement**

A reflexivity statement is intended to demonstrate to the audience the researcher’s “historical and geographic situatedness, their personal investments in the research, various biases they bring to the work” (Denzin, 2000, p. 1027). As a librarian in a community college in the Midwest, I have a lifelong love of libraries and a special interest in the delivery of information literacy skills to students, faculty, and staff members. I was raised in a comfortable household in the Midwest and had many opportunities to visit libraries throughout my life. I believe the ability to find information and use it effectively is the basis of all learning. I bring to the study of information literacy, the skills of being a trained

librarian who is very adept at using information. It is sometimes easy for me to forget how foreign many of these skills are to students and faculty. I became interested in conducting this study due to my awareness of an observable gap between the librarians' knowledge of community college students' experiences and their actual experiences.

### **Role of the researcher**

It was important in this study to present myself as a graduate student and a researcher. Since this study was completed at the institution at which I was a librarian, it took a special effort to collect unbiased information from the students. I needed to step away from my role as a librarian to acquire the best information possible. The topic of how to present oneself was addressed by Fontana and Fey (2000), who cautioned researchers to be very careful on how they first present themselves: Once "cast," there is a profound impression left on respondents (p. 655).

### **Participants**

Participants were chosen from students enrolled at the Des Moines Area Community College (DMACC). Seven students were interviewed in this study. Des Moines Area Community College is a publicly supported two-year institution serving the Des Moines metropolitan area and 11 surrounding counties. It was officially created in March of 1966. It serves approximately 15,000 FTE in credit classes as well as over 33,000 students in continuing education programs. It offers over 75 degree programs.

The College is comprised of 6 campuses and 2 centers. The College district encompasses 6,550 square miles; nearly 25% of Iowa's population resides within the DMACC service area. The campuses are in Ankeny (Main Campus), downtown Des Moines

(Urban Campus), West Des Moines (West Campus), Carroll (Carroll Campus), Boone (Boone Campus), and Newton (Newton Campus). The DMACC Success Center is located on the South side of Des Moines, and the DMACC Career Academy, Hunziker Center is located in Ames. DMACC serves several distinct demographic populations in one college system. It is an urban college; enrolling the largest minority population of any higher education institution in Iowa. It is a rural college, as one of its campuses serves rural communities with declining populations. Other campuses serve suburban areas and small cities (DMACC, 2004).

Purposive sampling was used in this study. Merriam (2002) stated that it is important to select a sample from which the most can be learned. Patton (1990) argued that it is important to select “information-rich cases for study in depth” (p. 169). In this study, it was important to find students who had some development of information literacy skills in order to illuminate the processes they used to gain these skills. Purposive sampling enables the researcher to “enable detailed exploration and understanding of the central themes and puzzles which the researcher wishes to study” (Ritchie & Lewis, 2003, p. 78).

### **Human subjects approval and informed consent**

Prior to conducting the research with human subjects, the organizational plan of the study was submitted to the Institutional Review Board at Iowa State University for review and approval (Appendix A-1). Students were chosen based on whether they had earned at least 24 semester hours of classes and had completed or were presently enrolled in a Composition II course. The initial plan was to select one-half of the participants based on receipt of a grade of B or above in a Composition I course, and the second half based on

receipt of a grade of C or below in a Composition I course. There was a question on the information sheet that pertained to the grade received in this course. It was not indicated if a certain grade was desired. In reality, only one participant with a C or below participated in the study. The students produced at least two examples of research papers by the end of the semester, one from a Composition II course as well as one from a discipline course for document analysis. This information was gathered from students by the use of the Informed Consent Form (Appendix B-1) and the Information Sheet (Appendix B-2).

Faculty members in classes which require research and documentation as well as Composition II course instructors were recruited in early November to distribute materials soliciting participation by students. An informational meeting was held for the group of interested participants to explain the process in greater detail.

### **Data Collection Procedures**

Data were gathered from the participants over a three-month period. Member-checking was also used later in the process. Interviews took place between December 2006 and February 2007. Two primary data collection procedures were employed in this study: interviews and document analysis.

### **Interviews**

One of the purposes set forth for interviewing in qualitative research is to improve the understanding of the social context of learning. These can be contexts within schools or classrooms or in informal settings. Understanding context means exploring contextual experience, actions, and relationships from within the interview process rather than merely describing behaviors or objectifying the subject (Tierney & Dilley, 2002).

In-depth interviews were conducted with the participants in this study. A series of three one-hour interviews was utilized. Interviews were semi-structured and tape-recorded. The data were later transcribed and converted to computer files. The interview questions were first used in a pilot study with work-study students at DMAACC. The Interview Protocol is included in Appendix C.

In-depth interviews involve a “certain style of social and interpersonal interaction” (Johnson, 2002, p. 104). In-depth interviews are often used to collect personal narrative, to describe events over time that shape a person’s story or development. This methodology is often used by a current or former member or participant in an activity to explore or check their understandings of a process. This technique was helpful to me as someone close to the topic of information literacy and its development in students.

Siedman’s (2006) three-interview series technique was employed. According to Seidman, “people’s behavior becomes meaningful and understandable when placed in the context of their lives and the lives of those around them” (p. 17). The first of the three interviews was used to focus on the participant’s context. Information was gathered about the person’s background, childhood, and as much of their past lives as possible. The purpose of the second interview was to concentrate on the details of the person’s present life as it related to information literacy. Finally, the third interview was a time of reflection. The participant was encouraged to reflect on the meaning of their experiences.

This type of interview is also referred to as a field interview. Field interviews are “unstructured, nondirective, in-depth interviews that differ from formal survey research” (Neuman, 2003, p. 390). They involve a mutual sharing of experiences; the outcome is

collaborative and rich. The subject's story is the focus. Subjects are encouraged to express themselves in their own style; jokes and narrative stories are retained in their natural form.

### **Preparation**

Lincoln and Guba (1985, pp. 270-271) described the steps involved in the interview process. First, one must choose whom to interview. Second, one must prepare by doing homework on respondents, practicing the questions on a stand-in, and deciding sequence of questions. Third, the interviewer should plan her initial moves, brief the subject on informed consent and warm the subject up by starting with broad, general questions. Fourth, attention must be given to pacing the interviewing and keeping it productive. This includes being flexible as the interview progresses, following up on interesting ideas, and using probes. When the interview has wound down and no new information is evolving, it is time for the interviewer to wrap up the session. It is a good time to review the participants' responses and check for any misunderstanding.

This study explored a specific process of skill attainment: information literacy. The interview sessions included in-depth or probing questions that enabled participants to detail their individual experiences in context. Because the subjects are describing a process learned over time, structuring the interviews chronologically is basically used to assist with recall (Arthur & Nazroo, 2003).

An interview or topic guide was first created using the process described by Arthur and Nazroo (2003). The guide aids the researcher to utilize a broad agenda of subjects and themes. The topic guide for this study is included in Appendix C.

### **Document analysis**

Documents provide a useful source of data for several reasons. They are easily available, stable, and rich sources of information. A document is defined by Lincoln and Guba (1985) as “any written or recorded material that was not prepared specifically in response to a request from the inquirer” (p. 277). This includes artifacts such as letters, diaries, speeches, term papers, scripts, etc. Students in this study were asked to provide copies of research papers from past assignments. These documents were analyzed to determine the emergence of themes or commonalities to further illuminate their stories of information literacy development. The rubric that was used to assess these research papers is provided in Appendix D.

### **Data Analysis**

Collection and analysis in naturalistic inquiry is an integrated activity. The analysis is ongoing during the initial collection phase to help the researcher focus the study and determine if new directions should be explored (Mellon, 1990, p. 64). The qualitative data collected throughout the research study (via interviews and document analysis) were analyzed using categorizing and contextualizing strategies. Categorizing strategies are a way of organizing data based on themes within the data. These themes are drawn from the theory driving the study (Maxwell, 1996; Merriam, 1998).

Contextualizing strategies are a way to understand data within the environment in which they were gathered. Contextualizing strategies are often used in analyzing case studies, profiles, and narrative analysis. This strategy focuses on understanding an individual’s

relationships that connect statements and events within the context of a coherent whole (Maxwell, 1996).

Analysis of narrative inquiry data is different from a typical qualitative narrative. One of the goals of narrative inquiry is “highlighting the particularity of the narratives” (Chase, 2005, p. 667) to capture that unique voice of the narrator. Instead of locating distinct themes across interviews, it is important to first locate distinct themes within each interview.

### **Member checking**

After the initial analysis of the gathered data, participants were consulted for verification with the researcher’s analysis. Follow-up was conducted with participants using a combination of email and face-to-face questions. This process is called member checking. Merriam (2002) discussed how member checking adds to the validity and reliability of studies. When using member checking, the participants should be able to “recognize their experiences in your interpretations” (p. 26).

### **Design Issues**

Trustworthiness is very important in qualitative research. Lincoln and Guba (1985) defined trustworthiness as the act of performing research in such a way as to persuade the audience that the findings of an inquiry are worthy of attention and notice. Furthermore, trustworthiness enables the researcher to anticipate arguments or criticisms that could be mounted that would be persuasive to the issue (p. 290). Trustworthiness incorporates several aspects of qualitative research, namely, reliability, validity, generalizability and triangulation.

## **Reliability**

Reliability is generally understood to be concerned with the ability to replicate research findings. However, the extent to which replication can occur in qualitative research has been questioned throughout the years. Lincoln and Guba (1985) believed that it was naïve to think that qualitative research could be replicated given the complexity of human experience. Others argued that qualitative research was dynamic and interactive and not only cannot be, but also should not be repeated (Gubrium & Holstein, 1997). Questions to consider when determining the reliability of a study are:

- Was the sample design/selection without bias, ‘symbolically’ representative of the target population, comprehensive of all known constituencies; was there any known feature of non-response or attrition within the sample?
- Was the fieldwork carried out consistently, did it allow respondents sufficient opportunities to cover relevant ground, to portray their experiences?
- Was the analysis carried out systematically and comprehensively, were classifications, typologies confirmed by multiple assessments?
- Is the interpretation well supported by the evidence?
- Did the design/conduct allow equal opportunity for all perspectives to be identified or were there features that led to selective, or missing, coverage? (Ritchie & Lewis, 2003, p. 274)

An effort was made in this study to interview a diverse group of students to best represent the community college. The fieldwork was consistent and structured. Participants were able to explore their experiences during three interviews that were conducted over time. The researcher followed up with participants at subsequent interviews if data seemed inconsistent or confusing.

## **Validity**

Validity is concerned with the plausibility of the data. Validity is more difficult to establish with narrative inquiry. It is complicated due to the fact that language is not transparent and there is no single standard of truth. One has to ask, Is the experience

described “lifelike, believable and possible?” (Ellis & Bochner, 2000, p. 751). Neuman (2003) posited that qualitative researchers are “more interested in authenticity than validity” ... Authenticity means giving a fair, honest, and balanced account of social life from the viewpoint of someone who lives it every day” (p. 185).

### **Generalizability**

As discussed previously, contemporary narrative inquiry is unique in that it looks for the particulars of a story as opposed to the generalizations (Chase, 2003). Therefore, it is important to capture the voice of the participant to help others see their own story in the narrative. While narrative inquiry research is not necessarily generalizable, there is a chance that people will connect to individual stories and validate their own experiences (Clandinin & Connelly, 2000). It is important that readers find the results reasonable and can put themselves into the context. Peer review was used to establish this believability. The researcher shared findings informally through conversations with library colleagues as well as in a formal setting. Preliminary findings were shared at the DMAACC Information Literacy Forum in 2007. The results were consistent with the librarians’ experiences.

### **Triangulation**

It is possible to help support the trustworthiness of a narrative inquiry by the use of triangulation. Triangulation involves the use of different methods and sources to check the integrity of, or extend, inferences drawn from the data (Ritchie & Lewis, 2003).

Triangulation contributes to the validity and reliability of research because it compensates for the fact that each data collection method has strengths and weaknesses (Esterberg, 2002).

This research used a combination of in-depth interviews, document analysis, member checking and peer review to triangulate the data.

### **Limitations**

The ultimate goal of narrative investigation of human life is the interpretation of experience (Josselson & Lieblich, 1995). It is difficult to conduct objective narrative investigative research because interpretation and experience are complex concepts to delineate. Furthermore, all interpretation of qualitative data is subject to the interpretation of the researcher. In addition, interpretations could vary from one researcher to the next.

The use of narrative in qualitative research does invite other limitations as well. Memories can be distorted or romanticized; they are said to “fictionalize life” (Ellis & Bochner, 2000, p. 745). Narrative is a story about the past and not the past itself. It is also subject to the researcher’s interpretations. Critics argue that narrative inquiry is overly personal and interpersonal (Clandinin & Connelly, 2000). Narrative inquiry experts also warn against what the authors call falling victim to the *Hollywood plot*, wherein everything works out well in the end (p. 181). Findings and ideas were shared with library colleagues to help mitigate these limitations. Member checking with the participants also provided an important double check to ensure the statements were recorded and interpreted accurately.

### **Implications**

The data collection/analysis in narrative inquiry can be used to inform future curriculum planning in the area of information literacy. Librarians and administrators need to hear the voices of students as they describe the experiences that led them to their present level of information literacy before any changes can be made. Descriptions of student

experiences in their own words are valuable clues to addressing factors that may inhibit the teaching of information literacy skills to students.

## CHAPTER 4. RESULTS AND ANALYSIS

*‘There’s figures woven in here and they mean something. I’m sure of it!’ she told herself. ‘If only I could get at the meaning of the thing, I might have a valuable clue!’*  
(Keene, 1947, p. 121)

The purpose of this study was to explore the experiences of a group of Des Moines Area Community College students and their development of information literacy by examining the family, public, private and academic experiences of each student. Social learning theory informed the design of this study; specifically, Social cognitive theory and the concept of Self-efficacy.

Two questions guided this study:

1. How do community college students describe their concept of information literacy?
2. How do they describe the people, places, events and experiences that shaped their understanding of information literacy?

Information was gathered through individual interviews and document analysis. The participants of this study are introduced and the findings of the research are presented. The major themes and supporting evidence will be detailed as well.

### **Participant Narratives**

A total of seven individuals participated in this study. A purposive sampling method was employed to identify the students for this study. An effort was made to gather participants with a wide variety of high school, academic, and family experiences. Three of the participants were female and four were male. Six of the seven were White, with the seventh being Hispanic. Five of the participants were United States citizens while two were not. The participants represented a variety of academic programs. Students were assigned a

pseudonym to protect their identity. The following narratives help set the scene for the interviews and findings.

### **Nancy**

Nancy is a 19-year-old, second-year student. She attended a series of local private Catholic schools, including elementary and high school. Her high school is located in a MSA (Metropolitan Statistical Area) (National Center for Education Statistics) which has a student body of approximately 1,000 students (Iowa Department of Education, 2006). She comes from a closely knit family and still lives at home.

*I have a little brother and I live with my brother and parents. I'm really close to them especially going to DMACC. I've noticed I've gotten even closer to them, which has been really nice. My brother is a freshman at my old high school and he actually loves it. He is very intelligent and a total jock, so it is really nice to have him help me with my homework.*

Her mother has a master's degree in social work; her father dropped out of high school but later obtained a G.E.D.

*My dad just finished his sophomore year in high school, so he didn't go a whole lot. He went back and got his GED and has taken a couple business classes. He's kind of managed on his own, I guess. My mom went to Iowa State....she struggled, but she has never worked so hard, so she has a masters in social work, she said she struggled, but it was worth it.*

Nancy loves to dance and has taught dance to children for several years. She plans to transfer to a state college and finish her degree in elementary education.

*I've always loved being around little kids. I taught at the dance studio for a while, for about 4 years and I just started to realize that this was something I really wanted to do. Teaching lives, I just think it is an awesome area to get into. I mean I want to touch peoples' lives, especially little kids, to see them develop into who they are. I think it is very rewarding.*

Nancy was not familiar with the term information literacy. When asked, she believed information literacy has something to do with finding texts or literature. Although she was not familiar with the term, she described skills that were important to an information literate person.

*First I would start off with, obviously, I would research my main topic, and then later go to subsets of the main topic, if there are little subsets of the main topic, I would look at those.*

She described the skills she thought an information literate person would have:

*Know how to use online access, obviously, that's a big one, but also understanding how to read things in a deeper way and from there taking what they have learned and searching farther...the domino effect, take one and then leads to others.*

While in high school, Nancy basically depended on the Internet or Google searches to complete her research. The use of the term Google as a verb has become widespread. Google was actually added in 2006 to the Oxford English and Merriam-Webster 11<sup>th</sup> Collegiate dictionaries as a verb (Gozzi, 2006).

Google is defined as, “to use the Google search engine to find information on the Internet”, (OED Online, 2008). In the etymology it is explained that the name for the search engine is actually attached to the term *googol*. Googol is described as “a fanciful name (not in formal use) for ten raised to the hundredth power.” It was believed to be used in reference to the large amount of information available on the Web. Nancy related:

*I would just like Google it or Yahoo. I would just go to the Internet and just type in what I was studying and just go from there. I would just go to further links that they would suggest or similar websites...Teachers told us not to use Wikipedia, but they would suggest like Google, or I found that Dogpile was really helpful.*

It was not until college that instructors talked to Nancy about online databases or evaluating web sources.

*I've learned a lot. A lot more than I ever have in high school or anything. My teachers have been just...I just remember after the first couple of weeks of college, my teachers just really drilled into me how it all works. How to research things and how to look up things, how to find materials to use stuff like that. Very helpful.*

*Basically we would take a class period and the teacher would just go about how to find information, good resources, how to document things. They would give us handouts, different types of structures for the papers.*

It is no surprise that Nancy finds her college composition teacher to be the most influential in the development of her information literacy skills.

*My comp teacher, I keep coming back to her, but she is just so knowledgeable of what she is doing. I think if every teacher knew how to go about researching things or finding things it would help a lot.*

## **Bess**

Bess is a 32-year-old, second-year student. She is in the process of completing her Associate of Science (A.S.) Degree, and plans to transfer to a private college in Minnesota. She is married and the mother of a two year old. She attended a small town high school in rural Iowa and was in a graduating class of 75 students. Her father has a master's degree in math and teaches math in her high school. Her mother has a high school diploma.

*I am the youngest of three children. My dad was a high school math teacher. My mom worked as a bookkeeper at the bank. I grew up in a small town and lived there my whole life. Ummm, pretty normal life I guess, normal childhood.*

This is the second college experience for Bess. She first completed a certificate program in computer science in a community college in her hometown.

*My first college experience was definitely much more tailored toward certain classes, so we just had a certain program, like computer programming and then these were the classes you had to take. It was a two year degree, a trade, so we didn't do ...at that time much internet stuff or any research or any of that.*

She has worked full-time in the insurance industry for many years. Bess has a desire to change her career and become a physical therapist. She will continue her degree and aspires to reaching the level of master's degree.

*Well, I kind of, well in high school I never really knew what I wanted to do, so my dad mentioned, well, why don't you go into computer programming? There was a two-year school down there so I went. As I was working as a computer programmer, well I liked parts of it, but not all aspect of it. But one of the main aspects I liked about it was helping people and so when I started at Farm Bureau I started to do more research about what I could do to help people better and then I did some profile tests on job skills, whatever they call those, depending on the answers you give they give you different jobs that might be for you.*

Having a computer and technology background influenced Bess's perception of information literacy. Her first thoughts on the topic reflect that concept.

*Information literacy? Well, the first thing that comes to my mind when I hear "information" is I expect someone to say, "information technology" just because I have worked with IT, but I think when I hear information literacy I think about being able to read, evaluate a source.*

When asked what skills an information-literate person would need, she responded:

*I think they definitely, well first they need to be able to read. They need computer skills, to be able to use various software for searches to find what they are looking for. They probably need some skill on how learning how to discern if something is a good source as opposed to a not as accurate of a source.*

Bess spoke often of her hometown public librarian when discussing her development of information literacy skills.

*I remember we went to the public library, she showed us how to use the card catalog, stuff like that. Basically I would look up stuff in the encyclopedia or*

*books about a person. Just kind of general research type books. They would take us from school to the public library to learn things like that.*

She felt a bit stressed as an older student returning to college. The issue of plagiarism had grown in importance in the time between her first entry in college and now.

*For one thing I've noticed a big change between then versus now...on the emphasis on plagiarism and not doing that. So I guess I was a little bit concerned about that, because of being, you know, an older student, I guess I wasn't sure that I'd have the necessary skills to make sure that I wasn't plagiarizing, using resources, citing what I needed to cite.*

Bess found that experience at her job and interactions with her composition teachers were two of the most influential factors affecting her development.

*Well, I would say definitely I started using the skills more on my job... just because I did a lot of trouble shooting for products and things like that. So, I would have to know how to read the manual and then those skills that I learned on the job helped me when I came back school just to do research on the Internet.*

As for classes, Composition II proved to be the most helpful.

*I would say definitely my Comp II class was the one that required the most and had the most experience...because we had to do an annotated bibliography, a works cited page, citations. I don't think that the other instructors...I think they were more relaxed about things like that. If you didn't do it exactly correct, 'cause I'm sure they didn't know exactly how to do it either! Comp II class was the only class that showed us how to get to the library online and then she had us attend a library orientation class.*

## **Hannah**

Hannah is a 19-year-old, second-year student. She was born in Chile and has attended high school in the United States since tenth grade.

*I'm from Chile. I lived there for 14 years then I moved to California and then I lived in two different cities when I was in California, and I lived 6 months in each city, 2 different high schools. It wasn't all that great, after that I moved back to Chile because my dad didn't have a job in the US anymore and he didn't want to become an illegal immigrant, so we moved all our stuff again.*

*That was pretty much unnecessary because right after we got there, we arrived at my grandma's house and my dad got a call to go back to the US. He was like, "Yeah! Yeah! Absolutely." So we were just kind of hanging out there with no house, no nothing. I was living between my friends' houses, like for 6 months and then I moved to Iowa.*

Hannah graduated from a large high school in suburban Iowa. Her graduating class was almost 400. Her school ranks 21 out of 465 for size in Iowa (Iowa Department of Education, 2005). Both parents have masters' degrees; her father's is in Engineering and her mother's is in chemistry. Hannah and her family are in the United States on H4 visas. Only her father can work legally in the United States. Hannah plans to transfer to a state school and work toward a degree in psychology. Her ultimate goal is to be a doctor, particularly a psychiatrist or music therapist.

*I've wanted to be many things, like a lawyer, actress, singer, dancer, model, but I'm short. So...I don't know. It was kind of weird. I started visiting a psychiatrist when I was younger because my parents thought I had ADHD. They didn't know what it was called. They thought I was hyper. But I didn't think I was and I got good grades and I didn't really want to go, but they forced me to go and they put me on Ritalin and I didn't like the feeling of being all drugged up and I hated my psychologist and I don't know...and then I started to read more about it and then I decided maybe the psychologist I went to wasn't all that great...So I thought maybe I could become a psychologist...a good one.*

Hannah puzzled over the term information literacy.

*My concept of information literacy? If I'm not mistaken, I think literacy is your ability to read and write...so...is that what you want to know? I'm confused. It could mean what other people, like you, when you are doing a study, when you need information about other people's literacy...could that be?*

When prompted that it was also called research skills, Hannah had a much clearer understanding.

*Well a person should know how to use the Internet, how to use books. Like for example if it is a person at DMACC he or she should be able to use the library*

*homepage, the library section, because they have all kinds of resources there. You can find magazines, journal articles, videos.*

Hannah went on to describe evaluating material and the type of material her high school instructors preferred.

*My teachers didn't like the web a whole lot. They'd tell us to make sure that our websites should be .edu, .gov. or .org and we could only have one that wasn't. My English teacher said that basically that you can put anything you want on the Internet and make it look official, like it comes from somewhere. She didn't trust it. She required that we used Ebscohost.*

She continued to learn more about sources in college.

*I learned to use Ebscohost better versus just like a web search or something. There are different databases, more. I try to pick those. I guess I know more about more databases, not just Ebscohost. And I, uhm use the library and you know, I get the books I want. I already know how to do things from high school, here I just use more sources.*

Hannah found her advanced composition class in high school to be the most influential in her development of information literacy skills. It is where she first learned to evaluate sources, look up a variety of resources and use MLA documentation. She named her high-school composition teacher and college Composition II teacher as most influential. One big difference she saw in college writing was the APA documentation format being used.

## **Ned**

Ned is a 25-year-old student at the rural Boone campus of DMACC. He was home-schooled until he reached high school age.

*I guess when I was being home-schooled..., we spent a lot of time, I guess the curriculum is a little less rigid, you know. So if there was something I was really really interested in, I was encouraged to dig into it. ...with that, yeah if there was something I really liked my parents said, "go ahead learn as much as you can." They'd take me to the library, the college, and stuff.*

Ned attended high school in a medium sized city with close to 1500 students. His high school was located in a Midwestern university town. Ned entered college at the main campus of DMACC in the neighboring town immediately following high school, but stopped attending without withdrawing. As a result, he received non-passing grades in several classes.

*I've worked construction and I find it kind of dull, between going to DMACC and dropping out...well, I guess I didn't drop out, I just quit coming...So I got F's on my transcripts...I was working at a detailing shop, 50, 60 hours per week. Every job I've had until now has been manual labor. This is my first desk job. I was kind of surprised. I didn't think I would enjoy it. Yeah... now I like it... I could do this sort of thing.*

Ned currently works for his father at a financial planning firm. He recently started back to college at the age of 23. He attends the more rural Boone campus of DMACC and finds it is a better fit. He plans to transfer to the state university and pursue a degree in Finance. His mother has a bachelor's degree in education and his father has a bachelor's degree in finance. His father was the pastor of a local church for many years and the church had a large influence on Ned's life.

*The church I went to....had a really nasty split when I was in 7<sup>th</sup> grade. So everyone I looked up to, became just bastard people for like 6 months. I had nothing to do with it, I wasn't involved in any way. I was just trying to grow up. All these people were important in my life, and then all of a sudden they couldn't be trusted. Sort of an odd experience...*

Ned displays a more thorough understanding of information literacy. His initial response was, "Basically just a basic idea of how you get information and how you use it." Pressed further to describe what skills an information literate person would need he went on to say:

*They would have to know how to use an Internet search engine, or any search engine. ... they would have to know the difference between a good source and a bad source, a great pet peeve of mine. I guess they would have to be used to using the library, or at least not intimidated by them. It wouldn't kill them to*

*know how to use the card catalog, but it is not necessary anymore. You just have to know how to find stuff, or at least know where it is. Know about Internet databases and about how libraries are arranged. They are arranged by ideas or subjects.*

Ned talked about his own research strategy:

*I start with background material, I usually don't have a plan in mind, I want to know everything so I start running it down. I read the first material and then sit down and think. What I like to do is go through EBSCOhost and download maybe about 20 or 30 articles. I usually don't take just anything...you know there is a little box there that you can check that is peer reviewed... you don't want to take anything that is not. Basically, it is going to make your search a little bit easier. If you don't have that checked in you search, you are going to get little news briefs and little AP wire stuff. An all kinds of other garbage you don't want.*

Ned did not credit any one experience or person for his development of information literacy skills.

*It wasn't any one class or anything. It was just growing up with my parents, especially my dad. I am just one of those people who want to know absolutely everything. And so, since I want to know everything, I have needed to develop the tools to do that. I am not very good at knowing everything, but I like to know what is going on. I like to have information; I like to read, I like to study. I like to know as much as I can. So, in terms of information literacy, it is just a natural progression from that to how you better find more effective ways to gather information so I can learn more in a shorter amount of time and retain more. It is really nice if I can get all the noise filtered out before I get into something.*

### **Dave**

Dave is an 18-year-old, first-year student. He attended the same large high school in suburban Iowa as Hannah. That district has nearly 1,500 students in grades 9 through 12. The high school consists of grades 10-12 and has approximately 1,100 students. Dave answered that he had received a C in his Composition I class on his informational sheet. He is not sure of his plans after DMACC. When posed the question he replied:

*I haven't decided yet. I'll decide when it is finished here. I might transfer, but I don't know if I want to, 'cause I don't know what I want to major in. I guess I just feel like if I pick a career I would be stuck in that without finding out what I really wanted to do.*

He does not want to continue on to a four-year school without a plan. His mother is currently working on her BA and Dave was unclear as to the level of schooling his father had obtained. Dave is very soft spoken and replied to many questions with the comment, *"I can't remember."*

Dave did not have much to say regarding the topic of information literacy. Similar to the other participants, he believed it had something to do with reading. *"I think a person would have to have reading comprehension and...that's about it. Just reading, desire to study the topic. They would need to practice the computer part of it."*

Dave also mentioned the issue of reliable sources. His teachers told him to pay special attention to the domain of the website, i.e., gov, .edu. EBSCOhost was again mentioned as the most reliable source for research. As for MLA documentation, Dave related being taught the MLA style since the 8<sup>th</sup> grade. He felt very comfortable in the use of the system in college. *"That's been put on pretty hard since about the 8<sup>th</sup> grade. I remember we learned about MLA in I think 8<sup>th</sup> or 9<sup>th</sup> grade, and that has been pretty much everything I've known."*

Dave believes his knowledge comes from being taught early and having it reiterated throughout his school career. He said no one experience stood out, but his advanced writing class in high school and his Comp II class at DMACC probably gave him the most practice.

## **Burt**

Burt is a 21-year-old transfer student at the Boone Campus. He grew up in a near by small town and attended high school with a student body of about 500 students. He describes and unsettled early life. He was born in Mexico and moved several times before settling in the town where he attended high school. He described his parents as “older” and his dad as somewhat a mystery.

*I was born in Mexico, a place called San...San something. My family did a lot of traveling, in an RV, a recreational vehicle, a small green van. Eventually we settled in Iowa about 12 years ago.*

When asked why he might have been born in Mexico, Burt responded:

*Yes, my father...my father was a ....he was over there for a short time buying land or something, he wanted a person, he wanted one of his children to have their name, he wanted the Mexican birth certificate, with their name on it...*

He spoke mostly of his mother and mentioned that she had a master’s degree, but he was not sure as to the discipline. Burt plans to transfer to a state school and pursue a degree in biology and psychology. He has an ultimate goal of becoming a doctor.

Burt likewise first equated information literacy with reading. When posed the question, “What is your concept of information literacy?” He answered, “*Information literacy, I guess...I understand literacy to be reading*” [long pause] When prompted that another way to think of it was library research, Burt pondered if that meant the computer, “*Are you talking about research on the computer? Google, Yahoo?*” Further probing led Burt to think about researching on EBSCOhost and works-cited lists.

Burt did have significant experience with writing through an advanced composition class in high school. In that class he learned about evaluating resources, and about MLA citation format.

*They were very meticulous about the web sources we used. Make sure that it had the correct information. That's still the way. They are not very reliable. I can understand why they didn't want us to use them. Primarily it was Ebsco that they wanted.*

Burt believed that he learned most of his skills on his own. If he wanted to know something he would do research and find out for himself. He added that, if he had to choose any classes or experiences that added to his development, it would be his high school Advanced Composition class and his composition classes at DMAACC.

### **Carson**

Carson is a 21-year-old international student. English is his third language. He is from a small country in Central Asia that was formerly part of the Soviet Union.

*Yeah, I am an international student from Uzbekistan. So, English is my third language; however, my second language is not as good as English. It is Russian. The first is Uzbek. Uzbek people talk the Uzbek language. I am still good at the Uzbek language, but in Russian, the speaking part of it, I am relatively good at it. I can understand. I can still read, but the writing part is hard. It is the English that is still complex. English is the third one and during my childhood in the fifth grade I learn. It has got to be fun to learn something different, but we never understood the importance of language.*

Carson is very proud of his ability to speak English. It is a special honor in his country to be chosen for these classes.

*We started when I was in fifth grade. We were lucky because I was in the special selected group of people out of ten classes. One class out of the fifth grade, they gave us special attention, which we were good in science, math and physics. We were exceptional students and that is why English was granted to us.*

Carson came to the U.S. as a foreign exchange student in 10<sup>th</sup> grade. He graduated from a high school that could be defined as a rural high school in a Metropolitan Statistical Area (MSA). This means the characteristics of the school are rural, but the location places the

school in an MSA. The school ranks 20<sup>th</sup> out of 465 in Iowa for size and has a student population of about 1500 students. When asked why he came to the United States, he replied:

*First it was just the interest, the curiosity. We were so motivated and were so convinced like it was a competition; like if you know English, then we could go to the United States, spend a year with a host family and it is cool.*

Carson's entire family is in his home country. His father has a BA degree in engineering and his mother has a BA degree in education. She is a teacher. His father was a project manager until the political climate changed things for him.

*He used to be like a manager-type. Something like a supervisor. He was in charge of a group of people and then suddenly for some reason, it was Independence Day in 1991 or 1992, the economy just crashed and he had to quit. He is like a salesman now, but it not like being a salesman here in the United States. It is not an official job, so you cannot make your retirement and stuff.*

Carson plans to transfer to a small private college in town and finish his BA in Business Administration. He still has a great love for his country and would like to some day be an ambassador.

*I am good at accounting, so I like working with numbers. I recently applied to Allied Insurance, so I would like to go into insurance underwriting. The other possibility is if I am going to improve my language abilities and my international relations. My ultimate goal is to be an ambassador. Possibly to get my United States citizenship and go back to Uzbekistan and represent the United States and live in my country.*

Carson first associated information literacy with the ability to write. When first posed the question about his concept of information literacy he answered, "*Information literacy, how do you say it... You mean analytical or the writing knowledge or your knowledge and information pertaining to sentences and stuff like that.*" When prompted that it was about gathering and using information Carson went on to say:

*Well obviously, it is a technique called skimming, which is the basic information or the basic principal in the business field. How do you say, in a big research paper, you just skim through. You skim through so many lines; so many paragraphs and then you highlight the best information, the best applicable information.*

He also mentioned that citation format and note taking were particularly important. When asked the best way to start research, Carson referred to his ability to search the Internet.

*I think if you have a skill such as searching through online, and I have great skills. I can find almost any information. Like Googling is one of the best. I am good at it and lucky me, note taking skills.*

Because of Carson's status as an ESL student, he enrolled in preparatory classes for reading and writing. He felt that these were essential in his development of information literacy skills.

*I was very thankful to take a writing class and the prep reading class, so once I took the Comp I, I was nervous because I thought it was going to be hard but it was not. It could have been if I hadn't taken any college prep reading and writing classes.*

## **Summary**

The participants in this study were diverse in their age, family background and career aspirations. They did share some similarities, however. All seven students indicated that they chose a community college because it was affordable. Each reported the need for the use of information resources in several of their classes while attending the college. However, their information literacy experiences varied considerably. On one hand, the participants expressed knowledge of parts or most of the information literacy skill set. On the other hand, no one could easily articulate all aspects of literacy.

Although the participants varied in age, background, and experiences, their recollections provided rich data that helped illuminate the experiences of young people as

they try to become information literate. Although their voices detailed individualistically in the students' narratives, common themes emerged. The next section explores the main themes and supporting evidence.

### **Document Analysis**

Each student provided a copy of two research papers from their classroom assignments at DMACC. One copy was a sample of a Composition II paper whereas the other was paper from a subject of their choice. The researcher chose to collect the final drafts before they were graded by the instructors. This would ensure the resources were the focus without preconception of grade awarded. A total of 14 papers were collected; one was not scored by the researcher as it was an essay rather than a research paper. The papers were analyzed by the researcher using a rubric (see Appendix D) designed by Joyce Valenza, librarian at Springfield Township High School. Valenza (2007) is a frequent speaker for library groups and author of several articles, book chapters, and online venues on the process of creating and providing tools to help students keep from plagiarizing: "We developed organizers to help students restructure information, and we developed rubrics that value academic integrity and original thoughts and the research process itself" (Rohrbach & Valenza, 2005).

The rubric in the current research did not assess the quality of the content of the papers but, instead, focused on the research process. The categories addressed were:

1. Thesis/Problem/Question
2. Information Seeking/Selecting, and Evaluating
3. Analysis

4. Synthesis
5. Documentation;
6. Product/Process

The students' scores ranged from 8/24 to 20/24 as determined by the researcher. The rubric entry of "Student(s) gathered information from a limited range of sources and displayed minimal effort in selected quality resources" was chosen for half the papers. Three out of the 14 papers achieved the highest category of sources. This is described as the following on Valenza's (2007): "Student's gathered information from a variety of quality electronic and print sources, including appropriate licensed databases. Sources are relevant, balanced and include critical readings related to the thesis or problem. Primary sources were included if appropriate."

The majority of the scores were at the two and three level. Further analysis of the works cited pages revealed the following:

- 74 resources were cited in total:
- 25 were to resources found through EBSCOhost
- 20 to printed books
- 19 to open URL's from the web
- 5 to printed journals
- 2 to online reference books
- 1 to a government document
- 1 to a television program

Open URLs (i.e., Uniform Resource Locators) refer to the address of a document on the web. These documents differ from the documents contained in library databases such as

EBSCOhost in that they can be placed on the web by anyone. Documents in library databases are usually from established journals and often appear first in print publications. They are brokered to libraries through professional librarians and are purchase on subscription basis. The open URLs had various domains attached. Domains are an indication as to the type of organization that is responsible for the appearance of the materials on the web. Students spoke of instructors who steered them toward domains listed as .gov or .edu. Hannah reported, *“My teacher didn’t like the web a whole lot. So he made sure to tell us that our websites should be .edu, .gov, or .org...and we could only have one that wasn’t...”*

The most common domains are:

- **gov** - Government agencies
- **edu** - Educational institutions
- **org** - Organizations (nonprofit)
- **mil** - Military
- **com** - commercial business
- **net** - Network organizations

Eight of the sources from the papers were from domains with the extension of .com, five from .org, two from .info, two from .gov, one from .edu, and one .net. Interestingly, the students reported they were told that Wikipedia was unacceptable, however, one student did cite it. Nancy, who mentioned the importance of library databases several times in her interviews did not cite one library database. Her citation lists consisted entirely of books or open URLs.

The most solidly referenced papers relied heavily on EBSCOhost, which is an article database. The majority of the students had a firm grasp of how to cite this online database when they used it. Nevertheless, one student (Ned) used a long list of citations without referring to an online format; thus, his citations appeared to be from printed sources. The

researcher, who is familiar with the holdings at the DMACC Libraries, perceived the citations were the full-text online database from EBSCOhost. A follow-up email to the student confirmed this. Ned stated:

*In that particular paper I didn't know I was supposed to cite the database until after I had collected my research (I think I skipped class that day). I decided not to go back and get the additional info; either I ran out of time or I ran out of motivation. As a general rule I cite the DB, unless it's a magazine/journal I subscribe to. I do just get lazy sometimes and not cite the DB. I have software on my computer now that automatically collects the bibliographical data from EBSCOhost etc., so the work itself isn't much of an issue, as long as I'm on my own computer.*

There were some unexpected findings from analyzing the students' papers. Two students used photographs in their papers. One student (Carson) used original photographs he took on a trip, but he made no mention of their origin in the paper. Another student (Ned) used photographs that appeared to have been taken from the Internet in a paper about violence in South Africa. No reference was made to the photos whatsoever. They were placed within text as though they were part of a textbook.

One student in particular (Bess), who had been the most concerned about plagiarism in her interviews, exhibited this concern in her writing. She had a total of 54 in-text citations in a six-page paper. The first three pages had only one sentence without a text reference. The following is a passage from Bess's paper:

*Dr. Ruth describes midlife as the "Whitewater Years" (Westheimer 1). Dr. Ruth compares the stages of midlife with that of the Disney ride Space Mountain. Space Mountain does not have large hills or lightening fast speed, it instead takes place entirely in the dark (Westheimer 3). The rider is unable to see each change in direction and is surprised by the twists and turns (Westheimer 3). If you were to ride Space Mountain in the light, it would probably be boring (Westheimer 3). But, in the dark, the ride can be quite a scary adventure (Westheimer 3). The Whitewater Years are like Space Mountain (Westheimer 3). They are like an internal roller coaster that is not visible to those around you (Westheimer 3). Roller coasters are not everyone's*

*choice of an entertainment ride, so some people do not even board one (Westheimer 3). The Whitewater Years, unlike roller coasters, is a ride that everyone must take and in order to be prepared, you'll want to make sure the lights are on (Westheimer 3)!*

For Carson, the international student who considered English his third language, the grammar in one of his pieces made it difficult to ascertain his understanding of the information he had gathered, or whether he was using English appropriately. No citation was given for the following passage:

*The Salado practiced both distinctive and quite equivalence culture from the Hohokam. Same as the Hohokam, the Salado were farmers. However, the most vivid signs of this group reflect from their pottery and sewing works. Apartment-style architecture of the Salado shelter adds more enthusiasm in the masonry art that are made of the quartzite stones and the combination of the mortar and caliche soil. A shelter consisting of nearly 30 rooms and reaching as high as 2 to 3 stories had assisted for more than 60 people and was for sleeping, storage, and protection.*

### **Themes and Analysis**

Three distinct themes emerged from the data. They are described with supporting evidence and placed in context with existing literature. The themes included:

- Information literacy is a synonym for \_\_\_\_\_ (fill in the blank)
  - Sub-theme – EBSCOhost is synonymous with information literacy
  - Sub-theme – mastery of MLA or APA documentation style equals information literate individuals
- Teacher as center of the universe, librarian as satellite
- Plagiarism as end of the world

### **Information literacy as a process**

Library literature and teaching materials describe the teaching of information literacy as a process. The Big6 program used in schools worldwide was developed by Mike

Eisenberg and Bob Berkowitz (1999). This method breaks the process into six steps, with each step having two sub-stages. The steps are described by the authors as:

1. Task Definition
    - 1.1 Define the information problem
    - 1.2 Identify information needed
  2. Information Seeking Strategies
    - 2.1 Determine all possible sources
    - 2.2 Select the best sources
  3. Location and Access
    - 3.1 Locate sources (intellectually and physically)
    - 3.2 Find information with sources
  4. Use of Information
    - 4.1 Engage (e.g. read, hear, view, touch)
    - 4.2 Extract relevant information
  5. Synthesis
    - 5.1 Organize from multiple sources
    - 5.2 Present the information
  6. Evaluation
    - 6.1 Judge the product (effectiveness)
    - 6.2 Judge the process (efficiency)
- (Eisenberg & Berkowitz 1999, p.12)

Kuhlthau (2004) also described the process, but included the affective side of research. Her studies were concerned with the research process as well as the feelings the students experience as they work through it. According for Kuhlthau, a Model of the Information Search Process is comprised of:

- 1) Task Initiation – Students realize they have an assignment that requires information. They begin to talk to others and browse the library collection. This stage is associated with feelings of uncertainty.
- 2) Topic Selection – Students select a general topic. They weigh prospective topics against their personal interests, the assignment requirements, the available materials and the amount of time they are allowed. The student in this stage is feeling mostly optimistic.
- 3) Prefocus Exploration - Students locate information, begin reading and taking notes. They learn more about the possible topic. As they begin to focus the student may feel some confusion, frustration or doubt.

- 4) Focus Formulation - Students start to process what they have read. They read notes to look for possible themes. This is when they chose a particular focus and discard others. As the student learns more about the subject they begin to sense clarity.
- 5) Information Collection – Now students use the library to gather information. They formulate keyword searches and perform comprehensive, focused searches. They make use of library indexes, databases and search tools. They find material in a variety of resources, in a variety of formats. In this stage, students have a sense of direction or confidence.
- 6) Search Closure – In the last stage before they begin to write, students recheck resources to make sure they have not overlooked material. Students are careful to check the accuracy of bibliographic information for future citation need. The student feels a sense of relief (pp. 44-50).

The process was described as a continuous cycle by Callison (2006), with five elements of information inquiry:

1. Questioning – based on human curiosity. This component interacts with the other four as a student works through the research process.
2. Exploration – This is the initial action a student takes to try and answer their questions. Students explore available resources, begin their searches, gather information.
3. Assimilation – Students begin to absorb the new information. They consider what they already know, how the new information fits into this knowledge and develop new or confirm existing thoughts. Students should be critically analyzing information at this point.
4. Inference – Students at this point take action given the new information. They begin to write, to prepare their ideas to present to others. Assimilation and inference are two skills that interact continually. It is more than stating ones own personal beliefs, it is a way to present informed arguments or ideas supported by valid resources.
5. Reflection – This stage is the completion of the cycle. Students ask themselves if they were successful in answering their own question; if they used the best information possible to support their claims; if the audience was able to learn what the student intended (pp. 6-9).

Information literacy taught as a process did not come through from the data. While some students could articulate bits and pieces of what they believed to be information literacy or the research process, they could not describe the process in detail. Instead, what surfaced

were two distinct substitutes for the concept of information literacy; the use of EBSCOhost and proper MLA or APA Citation format.

### **EBSCOhost as information literacy**

Students independently and repeatedly talked about EBSCOhost in their definition of information literacy. EBSCOhost is the vendor name for an online library database subscribed to by many libraries throughout the world. EBSCOhost is particularly visible to students in Iowa because a statewide contract through the State Library and the Area Education Associations makes it possible for every public school and public library in Iowa to have access to this database (Williams, 2002). The statewide contract has been in place for more than five years, therefore, most students entering college have had some exposure to it.

While there is agreement that using online databases result in finding resources with more reliable origins, it is not clear how the dependence on one resource provided by a single corporate entity has affected the research process for students. Dependency on one resource certainly limits the students' scope of knowledge and their experiences with a variety of materials. It appears from the interviews and data collected from the participants that EBSCOhost was a key component of their working definition of information literacy. Six of the seven participants of this study mentioned the use of EBSCOhost as being essential to their research. Their experiences are detailed as follows:

When Burt was asked what kind of skills an information literate person would have, his immediate response was, "*Be able to use EBSCOhost, to be able to write a reference to any material you are using.*"

Burt talked about being introduced to EBSCOhost in high school:

*Well our teachers would bring us in several times and then they would have the librarian show us how to use the EBSCOhost. Once again, there were like 40 students in there and one librarian at one computer and they tried to show everybody.*

Ned talked about his research process. While he was slightly more sophisticated and included references that indicated he was selective about types of resources, he did not show a process or a plan:

*I start in the background and I usually don't have a plan in mind, usually I want to know everything so I start running it down and through that, I will start to sit and think...What I like to do is go through EBSCOhost and download maybe about 20 or 30 articles. I usually don't take just anything...you know there is a little box there that you can check that is peer reviewed...you don't want to take anything that is not. Basically, it is going to make your search a little easier. If you don't have that checked in your search, you are going to get little news briefs and little AP wire stuff. All kinds of other garbage you don't want.*

Bess mentioned other databases, but she indicated she still preferred EBSCOhost.

*I usually use brainstorming to figure out just kind of the different subjects I might want to look up or whatever, then I would just go out there, most of the times I use the library databases and usually I go to EBSCOhost and do a search and go from there. Sometimes I might do a quick search just using Google to come up with some other ideas and do a more refined search in EBSCO.*

Carson said he became aware of online databases through his Composition I class:

*Yeah, I remember in Comp I, we had a whole class like 45 minutes, we studied how to do research online. Usually the EBSCOhost and Ebsco Master, something like that.*

Hannah and Dave attended the same high school and both spoke extensively about EBSCOhost. References to EBSCO were sprinkled throughout Hannah's transcript:

- *My teachers didn't like the web a whole lot....they required EBSCO...*
- *And well, I had to use EBSCOhost so I would try to get my .com source from the website, but then most of my searches were in EBSCOhost...*
- *Yeah, my teacher, she told us one day, how to use EBSCOhost.*

- *I learned to use EBSCOhost better in college, vs. like FirstSearch or something...they are like EBSCOhost but they are different. They have different ones of those. I guess I know more about more databases, not just EBSCOhost....*
- *For my Comp I and Comp II papers, we had a choice of MLA or APA, I chose APA, we had to do in text citation and a reference page, and we had to have valid sources...so .edu or .gov or .org. We had to use EBSCOhost and have like 3 books...*
- *Sometimes...well, sometimes even using EBSCOhost I find a magazine and I think, okay this is valid, but I can't find the publication date or something...*
- *Well...uh...I use EBSCO host a lot...*
- *I did a paper on song lyrics...I used EBSCOhost to see its correlation to domestic violence...*

Dave also mentioned EBSCOhost frequently and talked about learning that there were also databases other than EBSCO.

- *At our high school, they had their own service, EBSCO; they had their own account so anywhere in the high school you could get it.*
- *Mainly I would just use EBSCO...or I would do a Google search for information.*
- *In Comp II we had to have at least three articles from a scholarly journal and we got those from EBSCO. They are articles that have information approved by a certain group...academic scholars. There was a box in EBSCO you could click to just bring up academic journals.*
- *I received information in my study skills class about EBSCO.*

These students used databases brokered by their librarians, on the advice of their instructors and it appeared that they were taking EBSCOhost at face value. In Dave's comments, he indicated that he believes that peer reviewed articles from EBSCOhost are "approved" by someone. While they may have passed an editorial screening board, being printed in a journal that happens to appear in EBSCOhost does not make the information approved.

Information Literacy Competency Standards for Higher Education Standard Three calls for the information-literate student to evaluate information sources critically and

incorporate selected information into his or her knowledgebase and value system. It specifically directs students to examine and compare information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view. (ALA 1989). This standard is meant for all information from all sources, including Ebscohost.

### **MLA or APA documentation as information literacy**

The goals for citation styles used by researchers and students are to identify sources used and give readers specific information to enable them to find the sources themselves (Lipson, 2004). Two of the most widely used formats are the MLA and APA styles.

The Modern Language Association [MLA] designed a handbook for use by students particularly in the humanities. The MLA is an organization of teachers and scholars that was founded in 1883. The handbook was designed to simplify the task of preparing manuscripts for publication (MLA, 2003, p. xv).

The American Psychological Association [APA] responded to the need for commonly accepted writing guidelines in the field of psychology. There was a special need to indicate dates and authorities within the text of writing. It was important to note how recent studies were conducted and when certain studies occurred in relation to others. While APA style began in the field psychology, it is now widely applied in education, engineering, business and the social sciences (Lipson, 2004, p.107).

While appropriate citation of materials is part of the information skill set, as described in Information Literacy 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” (ACRL, 2000), it is not the only task that must be accomplished. Participants in the current study described their instructors as often referring to the citation lists, citation styles, and necessary types of materials needed. They did not spend time, however, detailing the research process or how students might find the information.

Burt relayed, *“For the human biology paper we were required to use different types of sources, I believe we had to have 5 different types. The instructor was very particular that we cite them properly.”*

Nancy echoed Burt’s concern: *“Instructor’s would spend time with MLA handouts, how to use them, basically formatting. They would usually spend a class period on this.”*

Bess’s description followed suit:

*In college we were basically given no direction, except in my Comp II class. For other classes, it was like, “find 3 sources, cite them correctly”. I would say my Comp II class was the only one that required that you learn about research. We had to do an annotated bibliography and a works cited page. That instructor actually had a librarian come and give us an orientation to library materials. They were all online.*

Carson, the international student, referred to documentation systems when asked about information literacy. He described learning about information literacy in college:

*In college, you have to acknowledge, you have to give attribute to whoever wrote the research. Their hard work should be given emphasis. During high school, not at all, we hardly ever included references.*

There has been a shift from the traditional teaching of grammar and citation formation in higher education to a practice of using the *handbook* or *manual*, such as the MLA (Modern Language Association) or APA (American Psychological Association) to teach all (Harris 2005). Students frantically finish their papers at the campus library and try

to find the “5 sources” that are required. The assignment becomes a quest to fill a quota, not gain relevant knowledge. In the article, *Desperately Seeking Citations*, Leckie (1996)

ponders:

*Do undergraduates have a good understanding of how scholarly sources are produced, and for what purposes? Do they understand why a textbook may not be considered an appropriate source for a research paper? Are they aware of where all those encyclopedia articles come from, and when one might best use them? Do they realize that the person who writes in Newsweek and one who writes in the Annals of the Association of American Geographers are two very different types of authors, writing for different audiences and purposes? (p. 205)*

### **Teacher as the center of the universe; librarian as a satellite**

The participants in this study repeatedly mentioned their teachers as the most important people in their development of information literacy skills. Composition teachers were particularly held responsible for this instruction. Librarians, on the other hand, had a more ancillary role as someone to cultivate as needed or consult as a last resort.

Dave described this phenomenon from high school: *“I believe the teachers themselves some would instruct you, how to get the most out of your library research. There really wasn’t any specific class that I know of. I didn’t take one.”* In college the trend continued, only if *“I couldn’t find information still, I’d go to a librarian.”* When asked what advice he would give high school students to help develop information literacy skills, Dave replied, *“Pay attention to your English teachers, do your assignments, search for relative sources, if you don’t know where to get those, ask your English teachers.”*

Nancy echoed with these thoughts:

*My teachers have been just... I remember after the first couple weeks of college, my teachers just really drilled into me, how it all works and how to research things and how to look up things, how to find materials to use stuff*

*like that...I feel like teachers are more knowledgeable about what they are doing and then they can help me out a little better than high school about information. They are very specific about how to go about doing things. They give me resources to use.*

Nancy remarked later about instruction:

*Basically we would take a class period and the teacher would just go about how to find information, good resources, how to document things. They would give us handouts.*

It is not unusual for students to lift their teachers to the expert level. Perry (1970) described a scheme of intellectual and ethical development as starting with the stage of dualism. In this stage there is one right answer: the teacher is regarded as expert, students expect facts to be passed on to them, and knowledge is the receiving of truth. Community college students are particularly affected by this as they are in the first two years of their formal higher education and developing as students.

The participants were asked who they believed should be responsible for instruction of information literacy skills. Of the seven participants, only Burt mentioned the responsibility of teaching information literacy skills as being the priority of librarians, and he also stressed instructors and self as being important. Five of the seven listed teachers first and foremost as key to providing instruction. Only Ned, the home schooled student, mentioned his parents.

Burt's positive interactions with librarians might provide an understanding of his ranking of them as key to instruction. He explained that his teachers often referred students to the library throughout his school years. In elementary school he detailed, *"I remember being walked down to the library and being shown the Dewey Decimal system by the librarian."* Later, in middle school, he described that *"...teachers would tell us what kind of resources*

*they wanted and then send us to the librarians for help.*” Burt knew the community college librarian at his campus by name and described her as being, *“knowledgeable and friendly.”* His Orientation to College instructor took the time to have the class visit the library and have resources presented.

Burt also described his love for reading and expressed an almost a mystical remembrance of the library in his grade school, *“It was like on a second floor of the building, it was set aside, there was lots of light in there, it was magical. I liked that.”*

The literature supports the majority of participants in this study who expressed the belief that the teacher was responsible for information literacy instruction. Students often felt uncomfortable asking for help in the library and would spend large amounts of time looking for material instead of asking for help (Waldmen 2003). Two studies by Kuhlthau (1983, 1988; as cited in Kuhlthau 2004) confirmed this phenomenon.

The high school students in the initial study did not consider librarians to be major contributors to the accomplishment of their information-seeking tasks. Constructs of the role of the librarian in their search process were very restricted. When asked if they needed the librarian’s assistance with researching a topic, only three of the twenty-five students responded either “almost always” or “often”. When asked if they requested help before choosing a topic, the students’ responses indicated that this type of assistance was not considered to be the librarian’s role (p. 108).

The latter study verified the limited role of librarians and “disclosed a perception of the librarian as a ‘last resort’ source locator.” [Furthermore,] “seeking help from a librarian was seen ‘as an easy way out’ and not as a legitimate approach to researching a topic or as an integral part of the research process (Kuhlthau, 2004, p. 108).

### **Plagiarism as the end of the world**

The Council of Writing and Program Administrators (2003) authored a Best Practices statement on plagiarism. In that statement, they set a definition of plagiarism: “In an instructional setting, plagiarism occurs when a writer deliberately uses someone else’s language, ideas, or other original (not common-knowledge) material without acknowledging its source” (p. 1).

It is interesting to note that the Council distinguished between intentionally submitting someone else’s work and careless or negligent use of another’s work. They stated that “students are not guilty of plagiarism when they try in good faith to acknowledge others’ work but fail to do so accurately or fully” (p. 2). The Council established responsibilities for both students and instructors to fight this problem. They charged students with understanding their research assignments which should be considered “opportunities for genuine and rigorous inquiry and learning”. [Whereas, faculty have the responsibility to] “design contexts and assignments for learning that encourage students not simply to recycle information but to investigate and analyze its source.” (p. 3).

In his work, *The little book of plagiarism*, Posner (2007) put forth the notion that plagiarism is “fraudulent copying” (p. 49). Posner suggested that the harm of plagiarism is that a person relies on the plagiarized material and acts differently than they would have if the material had not been plagiarized. He gave the example of a teacher who gives a higher grade than would have been given if the material had not been plagiarized. There is also harm to the student that did not plagiarize because of the unfair advantage the plagiarist gained

The notion of plagiarism as fraud is an important one. Most discussions of plagiarism center around the “stealing” of work or ideas, but, to take it a step further in the case of student plagiarism, it is the fraud—the presenting oneself as having the skills or having taken the effort that one has not done—that is notable. Plagiarism is linked to academic misconduct as described by Rocklin (2005), “I propose that academic misconduct occurs when a student misrepresents his or her engagement in one or more activities designed to promote learning” (p. 172).

The ease with which students can access, copy, and paste material into Microsoft Word documents from the Web has resulted in rampant plagiarism. Contributing to this phenomenon is the amount of material available electronically. Park (2003) called it “Digital Plagiarism” which he described as:

Recent years have witnessed the emergence and proliferation of a new form of plagiarism, from digital sources, which offers new opportunities and ease of access and which poses particular challenges across the whole education sector globally. Students now have ready access to a huge variety of digital sources...most of which are rapidly accessible 24 hours a day 7 days a week and can be downloaded from the safety and comfort of their own rooms. (p. 481)

Online plagiarism has also given rise to its own vocabulary: “cyberplagiarism” (Anderson, 1999), “Cut and Paste 101” (Renard, 1999), “mouse click plagiarism” (Auer & Krupar, 2001). At one time, the greatest source of copying was by elementary school students who feverishly copied pages with a yellow Number 2 lead pencil from the *Encyclopedia Britannica*. Wholesale paper mills on the Internet were not imagined. Now, entire websites and databases exist with the sole purpose of selling term papers to students. Sites such as SchoolSucks.com, Genius Papers, Speedypapers.com and others make thousands of dollars each year selling term papers (Thompson 2006).

Students are often unclear on the topic of plagiarism. Many students commit *unintentional plagiarism*, which was described by Renard (1999):

*These students have never learned how to properly use and document resources in papers. They are likely to copy something word for word from the Internet, never documenting, and present it as their own. Confronted, they don't usually admit wrongdoing because they don't understand the alternative – documenting the source. (p. 38)*

Other studies point to the fact that students often do not realize that material on the Web is protected in any way. They are unclear of when documentation is necessary and are oftentimes confused about how to document correctly (Auer & Krupar, 2001; Maramack & Maline, 1993).

The students in the current study reflected this uncertainty. Bess expressed her worry over plagiarism:

*I'd have to say my college experience now, has been, for one thing I've noticed a big change on then versus now, is the emphasis on plagiarism and not doing that....uhm so I guess I was a little bit concerned about that, because of being you know an older student, I guess I wasn't sure that I'd have the necessary skills to make sure that I wasn't plagiarizing, using resources, citing what I need to cite.*

Ned seemed to have a better grasp of what he believed plagiarism to be than did Bess, but even he wavered somewhat in his description:

*If you are using anybody else's work uncited. Typically, it is usually if you take it verbatim. I don't know what the legal definition of it is, but if you are pulling the general stuff, like I see people who take a paragraph from whoever it is and re-word it slightly. Technically, that is your writing, but come on; you are really walking the line on that one. I think anytime if you are going to quote somebody, if you are going to paraphrase somebody or if you are going to draw from somebody else's work even or build from someone else's work you ought to cite it in some way so that you aren't claiming it as an original idea. I think that is the core of it.*

While the students were somewhat confused about how to avoid plagiarism, the instructors were adamant that students must avoid it, even if they did not spend time teaching them helpful avoidance strategies. Ned comments on his experience with plagiarism at DMAACC:

*In Ankeny, one of the teachers was this uh...He was just like “if you plagiarize, the world will end. It will stop spinning and you will fly into space”. I have others who are just like, “don’t plagiarize” so...There is always something about it in the Student Handbook and there is always something about it in the course syllabus. I have never had an instructor who didn’t mention something about it. Some of them, it is the hell fire and brimstone speech about plagiarism and others it is “we take this seriously and if you do this, you are going to fail the class and probably be expelled from school.”*

Bess, echoed that fact that each of her instructors at DMAACC covered plagiarism, “Every one of my instructors have in their syllabus a section on plagiarism, they usually read through that, talk about the consequences of what happens if you plagiarize, that’s about it.”

Burt provided his understanding on the consequences of plagiarism at DMAACC: “I believe that plagiarism is followed by a zero on whatever you happened to be working on, then you may be kicked out of college.”

So much time seems to be focused on the doom and gloom of avoiding plagiarism that development of original thoughts or individual interpretations from the students are neglected. It should be communicated that:

Research writing is a contribution to academia. It should not be mere regurgitation of the facts and the ideas of scholars and specialists. As educators, we must teach students to realize that they are required to have their own insights into source materials. They must engage in a dialogue with the sources they consult. Without this dialogue their research is meaningless and becomes a mere exercise of collecting and organizing. (DeSena, 2007, p.1)

The previous example of Bess citing an author after every sentence in her paper is indicative of this problem. The instruction centers around what students are taking from other researchers, and not on their own interpretations, synthesis, and thoughts:

Asked about accepted conventions for acknowledging the use of the words or ideas of others within their writing, first year students are flustered. Having been taught that the ideas of authorities are preferable to their own ideas, these students subscribe to the notion that the essay is a crazy quilt of quotations in which the acquisition of authorities – like scraps of fabric for patchwork quilting—is the primary task. Secondary or ignored in the concepts students bring to my classes are the ideas of achieving personal mastery of information, having one’s own carefully considered opinion, and analyzing where one’s own position falls with respect to the positions of others. (Whitaker, 1993, p.509)

Students also talked about the punitive side of plagiarism, such as the use of anti plagiarism software programs like Turnit In. Turnit In is a document sources analysis application that compares students’ papers against other texts and provides a report of the amount of similarities that occur (Brandt, 2002). Detecting plagiarism is taken seriously at Nancy’s campus:

*They don’t tolerate it. I guess there is a program that they would type our papers in and if there were any duplicates of it or any similarities they would just not tolerate it. You’d get a zero for it.*

When asked if the teachers spent any time describing how to avoid plagiarism, Nancy’s response was, *“well..., they spent a little time talking about it, they didn’t really talk about avoiding it. I mean how to avoid it is to not take another person’s work or work from another class.”* She went on to describe the difference between high school and college, *“Yeah, I guess in high school it was just like “don’t copy” but in college there were consequences for it. So it was a little more “threatening” I guess [nervous laughter] in college.”*

The practice of policing students instead of nurturing their development is common in higher education. It is rather a vicious cycle: as more incidents of plagiarism are reported, instructors become more militant and aggressive, while students lose more and more of their creative edge. “A culture of surveillance often substitutes for compassion, content knowledge, and engagement” (Selber, 2004, p. 110).

### **Information Literacy Debate**

It is little wonder that students and instructors are confused by the concept of information literacy. Librarians, themselves, continue to have difficulty defining the term or agreeing on how literacy skills should be taught. In an article by Snaveley and Cooper (1997) entitled, *The information literacy debate*, the authors examined the use and misuse of the term *information literacy*. They quoted Stephen Foster as saying [literacy is] “*a phrase in quest of a meaning*” (p. 10). Foster continued by asserting that it is “an exercise in public relations” and “an effort to deny the ancillary status of librarianship by inventing a social malady with which librarians as ‘information professionals’ are uniquely qualified to deal (as cited in Snaveley & Cooper, p. 10). After a lively debate presented by the authors who attempted new terms and to redefine the old term, it seemed they made little or no progress.

Ten years later, (Doku, 2007) continued to lament the problem of information literacy. The assertion this time was that the term should be changed because of its negative connotation. That is to say, if someone can be information literate, is a person who lacks those skills illiterate? After both discussions, it was conjectured that too much ground had been gained by the acceptance of the phrase, information literacy to lose it to new phrases that could be just as easily misunderstood. Instead, the focus should be brought to redefine

and clarify what one means by information literacy and how it contributes to the learning process (Snaveley & Cooper, 1997).

Recent studies introduce the concept of multiple literacies and 21<sup>st</sup> century learning and learners (American Association of School Librarians, 2007; Brown, 2006; Deane, 2004). Brown (2006) prompted to teach students “how we can communicate effectively using image, text, sound, movement, sequence and interactivity.” According to Brown, “Such skills are crucial today, given how challenging it has become to capture and hold someone’s attention” (p. 21).

The American Association of School Librarians (AASL) has recently adopted a new set of standards for “21<sup>st</sup> Century Learners (2007):

The definition of information literacy has become more complex as resources and technologies have changed. Information literacy has progressed from the simple definition of using reference resources to find information. Multiple literacies, including digital, visual, textual, and technological, have now joined information literacy as crucial skills for this century. (n.p.) [<http://www.ala.org/aasl/standards>]

The standards are listed as:

1. Inquire, think critically, and gain knowledge.
2. Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.
3. Share knowledge and participate ethically and productively as members of our democratic society.
4. Pursue personal and aesthetic growth.

The participants in the current study talked about the need for similar changes they imagined in the future. When asked to imagine how the information world would look like in 10 to 20 years, the students offered progressive ideas.

Burt perceived that computers would be everywhere:

*They will be small and possibly woven into clothing. When you shake hands with someone they will immediately know things. It will transfer information. You will be able to talk to your friends anytime, anywhere at school. You can watch movies in the table at your desk. There will be all sorts of wonderful things.*

Nancy imagined a world wherein “*there will be icons on your desk, you will just press one and information will pop up. Everyone will get information through their cell phones.*”

Ned contemplated how the future of information will continue to change:

*Newspapers will completely disappear. All the news will be online and involve video, sound, images. Blogs will become more and more important, big corporate media moguls will lose power. Independent companies will be able to establish news presence on the Web.*

Bess had a more conservative feel regarding what would change in education:

*I think it will be easier to access material, but there will be so much material available it will be hard to find things. I think classrooms will look somewhat different, but it seems that progress is usually pretty slow in education. I think sometimes the world changes and it is 10 or 20 years before the general public sees it.*

Visions such as Bess’s are important. While community colleges pride themselves in their responsiveness to change, they are large, bureaucratic entities. This is true for most educational enterprises and not limited to the United States. A recent article by Richardson (2007) in *Education Canada*, lamented similar issues: [we are] “*preparing students for a world that has long since passed, instead of a future that is already here*” (p. 23).

The purpose of this study was to capture the voices of community college students in regard to their concept of information literacy as well as the experiences that helped them to develop these concepts. Ultimately, the purpose was also to inform future instructors of

students. Examining the past and projecting about the future is necessary to develop direction. The effects of learning theory and teaching techniques must be considered in this endeavor.

### **Context of Social Learning Theory and Cognitive Process**

The fractured way in which the students in the current study experienced the development of information literacy skills points to the lack of building block or schematic learning in this area. Research supports the need for new models that include scalable learning. Mackey and Jacobsen (2004) described such a model:

The authors argue for IL [Information Literacy] instruction that starts in a comprehensive way in lower-level courses, and then continues in discipline-specific courses at the upper undergraduate level, as well as in graduate school. This multi-tiered approach suggests that new models must be designed to reflect an expanded and integrated role for IL education. This will lead to practical and innovative assignment options to enable instructors to effectively incorporate IL in a multiplicity of credit bearing courses. (p. 201)

When given single assignments, chance instruction, students are not building a scheme or a constructive way of thinking. Bruner (1960, as cited in Kuhlthau, 2004, p. 22) looked at the past behavior of students and their experiences as being what enables them to learn and construct new knowledge. He described this as the “Interpretive Task” that involves five phases: (1) Perception, defined as encountering new information; (2) Selection, defined as recognizing patterns; (3) Inference, defined as joining clusters and categories; (4) Prediction, defined as going beyond the information given; and (5) Action, defined as creating products of the mind.

The students in the current study described sporadic assignments or lack of any research assignments. When the students did receive instruction, it was often in the repeated

50-minute orientation that simply covered the resources available through the library. In response to questions about formal instruction about research in school, each participant remarked:

*Burt: I believe the instructors themselves, some would instruct you, how to get the most out of your library research. There really wasn't any specific class that I know of. I didn't take one.*

*Nancy: We would go to the library almost every year. The librarian would teach us how to use the card catalog. It was pretty much the same thing every year. In high school, there were no classes, no instruction. I think most of the time if you didn't know, you had to ask, but I don't think we were ever taught.*

*Ned: Since I was home-schooled we didn't really have a school library. My dad had a big library in his office, though. My parents would take us once a week or so to the public library. We had these worksheets where we had to go and find answers to questions. Kind of like a scavenger hunt. Once we went to the big university library when I was in fifth grade, I thought that was cool.*

*Bess: I can't really remember the library in my elementary school. I think it was shared with the cafeteria. We mostly used the public library for assignments. I remember using encyclopedias a lot. I'm a little older so I don't remember computers being used for research. We mostly used them to learn typing. The funny thing is, I don't remember doing any research projects. I probably did, but mostly I just remember reading textbooks and taking tests.*

*Carson: In my elementary school we had a library, but things were different there. The librarian mostly guided students toward books to help them with their classes. In my country it was very uncommon to write a paper. In high school they would come in and pass out sheets and kind of give you a quick overview of research and how to use the library.*

*Hannah: When I was in elementary school, I did not go to the library at all. At the German school I did go a little bit, but it wasn't like a library here. It was more like a computer lab for little kids. Later...I took an advance composition class in high school. The librarians at my high school had a lot of materials made up to teach you about research. They had helpful webpages to guide you to a topic. There wasn't any formal instruction, though.*

*Dave: I don't remember this happening for my class, but in high school they would bring in groups and show them the library, group by group. They must*

*have started it after I was a freshman. I do remember using EBSCO in my high school. They were big on teaching you that.*

The disjointed way that information literacy is often approached in our K-12 schools as well as in our community college is problematic for students to get a true sense of where information literacy fits in their educational repertoire.

Teaching specific topics or skills without making clear their context in the broader fundamental structure of a field of knowledge is uneconomical in several deep senses. In the first place, such teaching makes it exceedingly difficult for the student to generalize from what he has learned to what he will encounter later. In the second place, learning that has fallen short of a grasp of general principles has little reward in terms of intellectual excitement. The best way to create interest in a subject is to render it worth knowing, which means to make the knowledge gained useable in one's thinking beyond the situation in which the learning has occurred. Third, knowledge one has acquired without sufficient structure to tie it together is knowledge that is likely to be forgotten. An unconnected set of facts has a pitifully short half-life in memory. (Bruner 1960, p. 31)

Information literacy is too often regarded as just a task to obtain information:

Severing information literacy from critical thinking reduces it to a skill set, devoid of meaningful connections to ways of knowing and constructing information. Teaching it only as a part of a specific assignment likewise neglects its utility as a thinking process, relegating it to a means towards an end. (Reed & Stravreva, 2006, p. 437)

Closely related to the social cognitive theories and cognitive learning models used to frame this study are the concepts of situated cognition and more specifically problem-based learning. As the students' words and experiences began to emerge, a need for a type of learning more situated into their own life, solving their real life problems emerged. Situated Cognition has been described as "activity in which knowledge is developed and deployed...not separable from or ancillary to learning and cognition (Brown, Collins, & Duguid (1989, p. 32; as cited in Moore (1998, n.p.). The students in the current study said

instruction was received in short orientation-type sessions that were not connected to their work. Hung (2002) described the use of situated cognition:

By immersing students in activities and authentic problem tasks which have rich conceptual meanings and encouraging them to explore and discover, they acquire the skills and dispositions necessary to participate in disciplinary discourse, which could be called knowledge about a discipline. (p. 402)

The problem based learning model is often associated with and used in conjunction with situated cognition. Problem based learning [PBL] involves presenting students with problems that they experience in their own lives and helping them learn how to navigate processes to work out solutions. Simply put, PBL is a teaching technique wherein learning occurs in the context of solving real-world problems, and, in the case of academia, in the context of solving problems created by class assignments. Baud and Feletti (1997) described the tenants of PBL in their treatise on the subject. Most pertinent to information literacy are:

1. PBL takes into account how students learn. It is becoming increasingly apparent that learning takes place most effectively when students are actively involved and learn in the context in which knowledge is to be used;
2. The problem is encountered first in the learning process, before any preparation or formal study has necessarily occurred. The problem is presented in the same way that it would present itself in reality.
3. Students are encouraged to pose their own questions and seek the respective answers.
4. Having students work cooperatively as a group or collaboratively at a common task, exploring information in and out of class, with access to a necessarily subject expert and/or technical support expert who knows the problem well and can facilitate the group's learning process.
5. Getting students to identify their own learning needs and appropriate use of available resources.
6. Reapplying this new knowledge to the original problem and evaluating their learning processes.

Many of these tenants mimic the information literacy standards. There is discussion of having students form their own research questions, using appropriate resources, and

incorporating new knowledge into their framework. Consulting with experts and evaluating the results is also encouraged.

There are several features of PBL, as described by Hung (2002), that would be advantageous to the teaching information literacy skills:

1. Adapting to and participating in change;
2. Dealing with problems, making reasoned decisions in unfamiliar situations;
3. Reasoning critically and creatively;
4. Adopting a more universal or holistic approach;
5. Practicing empathy, appreciating the other person's point of view;
6. Collaborating productively in groups or teams;
7. Identifying own strengths and weaknesses and undertaking appropriate remediation, for example, through continuing, self-directed learning;
8. Fostering open-minded, reflective critical, and active learning;
9. Respecting both students and teacher as persons with knowledge, understanding, feelings, and interest who come together in a shared educational process; and
10. Reflecting the nature of knowledge – that is, knowledge is complex and changes as a result of responses by communities of persons to problems they perceive in their worlds. (p. 407).

### **Information Literacy and Problem Based Learning**

Librarians have begun to use the PBL strategies in higher education (Carder, Willingham, & Bibb, 2001; Enger et al., 2002; Fosmire & Macklin, 2002; Macklin, 2001).

These teaching strategies take more time and effort, but have substantial rewards. One problem PBL addresses is the tendency of students and faculty to assume that students know all there is to know about finding information:

That is, students can ostensibly find answers to simple information needs, but are unable to explore deeper concepts or determine if their answers are rigorous. Since students feel successful in answering simple questions, they don't believe they need information literacy instruction, and are consequently unmotivated to learn. (Fosmire & Macklin, 2002, retrieved from [www.istl.org/02-spring/article2.html](http://www.istl.org/02-spring/article2.html))

Two class collaborations were described by Fosmire and Macklin (2002). Librarians at Purdue chose to collaborate with teaching faculty in the sciences to promote problem based learning to engage students in their science classes. In each instance, librarians met with students on at least two occasions to implement their process. They perceived it to be essential that students are first presented with an overall orientation to the library and library resources at the Purdue Libraries. A second session was planned to implement the “real world” or subject specific problem.

Librarians and faculty members collaborated in advance to plan engaging scenarios for students to participate in while using library resources. In one class, students were asked to brainstorm possible solutions to the problem of global warming. They worked in groups. They considered what they already know about global warming and then proceeding to determine what they needed to know to present viable solutions. The students presented their findings in a panel discussion format. The librarians and faculty jointly determined a grading rubric to make sure the appropriate skills were being assessed. A similar process was used for a higher level science class that culminated into a research paper.

Shorter versions of the PBL process were brainstormed by librarians at a conference (Enger et al., 2001). Table 1 provides an illustration of the template for the 50-minute session:

In an article by Macklin (2001), the 50-minute instruction session was also addressed. It was suggested that librarians prepare “at least three or four well-developed cases or problems” (p. 308). It was also suggested that these problems be of varying difficulty to take into account the different levels of students in the session. It is best to challenge those who have some knowledge of library resources, but to also have something for novice users.

Table 1. Problem based learning (PBL) 50-minute session (Enger et al., 2001, p. 357)

| What to do  | How it could look   |
|---|---|
| 1. Design an issue or problem related to the subject presented by the faculty requesting library instruction<br>2. Draw out of the students what they already know about the problem, and where they would go to find resources to solve it *   | 1. Present problem to students<br>2. Query students about what type of information they will need to know how to develop a position on the problem.   |
| 3. Shape the student contributions of one or two basic concepts – definitions of the problem, then proceed to search methods (Boolean, keyword, subject headings, etc.). Conduct the information – gathering process: Introduce concepts and synonyms, perhaps by moving toward Boolean logic concepts, or keywords and subject headings, or the introduction of various databases (depending on the problem)** | 3. Demonstrate an effective search of relevant database/Web tool(s)   |
| 4. Provide students with tools for solving the problem, such as Web-based pathfinders and homepages, resource sheets or handouts, or facilitation with courses available in an online format through course management software, such as Blackboard and WebCT***  | 4. Ensure that students have access to legal, ethical, medical information to develop a position  |
| 5. Follow-up, if possible   | 5. Students present positions/solutions in class, if time allows. With the cooperation of the instructor (in person or by e-mail) complete the investigation process. In a writing class, this might take the form of an essay. Other follow-up activities could be class visits, presentations, or debates. In the best of all possible worlds, students reflect and report on their information gathering experiences, self assess for efficacy, and become ambassadors fro the principles of information literacy and the role of librarians in providing information to solve problems. |

\*In this context, PBL assumes: that students know something about the problem and that they can be encouraged to collaborate and share their knowledge

\*\*PBL takes the new material of student input and shapes it. The outcome approximates the collective prior knowledge of the students

\*\*\*PBL can give students the knowledge that they already “know something” and that given the tools, they can solidify what they know, refine their knowledge and discover more.

Macklin cautioned that it is important to build time for collaboration or peer mentoring.

Criteria for good problems are described as:

1. They are engaging
2. They have structure
3. They are adaptable
4. They are collaborative. (p. 309)

In the PBL process, the teacher becomes an expert or facilitator. The problem and its solution becomes the learning activity and the librarian is there to guide students to resources and help them refocus their searches. This helps direct the focus back on the students. Macklin comments on the difference, “Unfortunately, information literacy skills are often approached from the perspective of the librarian – rather than the student’s point of view or immediate needs” (2002, p. 310).

The understanding that students learn better in context, and the information from the study that illuminates the experiences of students lends itself to an examination of how students would best learn information literacy skills. The next chapter summarizes the findings of the research and suggests possible directions and implications for practice and future research.

## CHAPTER 5. SUMMARY, FINDINGS, AND RECOMMENDATIONS

*As Nancy walked to her room, she felt a combination of happiness at Ned's return and a kind of sinking feeling which always came over her when a mystery was solved...(Keene, 1974, p. 179)*

### Summary

The purpose of this study was to explore the experiences of a group of community college students and their development of the concept of information literacy. It was anticipated that reflection on their prior experiences would illuminate the meaning students make of information literacy, and could help inform instruction for future students. Data were gathered from interviews as well as document analysis.

This research was framed by two questions:

1. How do community college students describe their concept of information literacy?
2. How do they describe the people, places, events and experiences that shaped their understanding of information literacy.

### Findings

Answers to the first question were characterized by the participants' lack of clarity. Information literacy meant different things to different people. There was no one clear description of the term or the concept. Themes that emerged were centered on types of resources, documentation systems and fears of plagiarism. Information literacy did not emerge as a process learned over time by these students.

As for the people, places and events that most affected the participants' skill development, they overwhelmingly mentioned their instructors, particularly English instructors

as being the most influential. Librarians were rarely mentioned, and usually only after some prompting. Students that had more exposure to the process and to writing experiences were more comfortable and assured in their skills.

### **Limitations**

The implication of this research should be interpreted with caution based on the limitations of the study. This study was based on a small sample of student interviews, and interpreted by the researcher. Student recollection may not always be true to fact. The use of students who primarily attended Iowa primary and secondary schools could have also played a factor in their experiences, particularly the heavy use and reliance on EBSCOhost.

### **Implications**

While this study was framed by Social Cognitive Learning theories, it became clear after analysis of the data that a holistic, repeated opportunity for students to learn information literacy skills was lacking from their experiences. The basis for social learning theory was not realized; learning in groups over time. Students needed the opportunity to learn about research skills in context and apply methods to real world or academic issues.

A major theme in the theoretical framework of Bruner is that learning is an active process in which learners construct new ideas or concepts based upon their current and past knowledge. The learner selects and transforms information, constructs hypotheses, and makes decisions, relying on a cognitive structure to do so. Cognitive structure (i.e., schema, mental models) provides meaning and organization to experiences and allows the individual to "go beyond the information given. Bruner(1960) stated, "The first object of any act of

learning, over and beyond the pleasure it may give, is that it should serve us in the future” (p.17).

The participants in this study were taught in short 50-minute sessions, usually out of context for their assignment. It is much like trying to teach someone to make a quilt. If the student were really to master the art of quilting, they must be taught all the basics, from stitches, patterns, cutting, blocking and general quilting techniques. If the master quilter were to hover over the fledging seamstress while they completed one quilt square, much the same way the librarian hovers over the student as they complete one isolated assignment, when the lesson was over, what the seamstress would have is one quilt block, just as the student that is spoon fed a 50 minute instructional session will only have that limited set of skills. But taught the basics over time, a seamstress will be able to produce endless beautiful quilts, as a student will be able to apply knowledge to endless research situations.

### **Recommendations for Practice**

Several recommendations for practice are made based on the findings of this study.

#### **1. Educate the Educators**

The voices captured in this study did not speak of an orchestrated, scalable approach to learning information literacy skills. Students repeatedly mentioned instructors as the most influential in their development of information literacy skills. Instructors, however, do not always have the skills or training to fulfill the students' expectations. The lack of inclusion of information literacy concepts throughout these students' school careers, while not unusual, is very disturbing. A concentrated effort must be made to include information literacy in curriculum throughout the education process. Including information literacy skill attainment

into the course work of undergraduate and graduate level education students would help facilitate this.

Teachers and instructors at all levels need to become information literate themselves in order to plan curriculum that includes meaningful use of inquiry and information literacy skills. The call for teacher education to include these topics is not new. The original American Library Association report in 1989 from the Presidential Committee on Information Literacy included a specific recommendation addresses this. (ALA, 1989). Recommendation 5 stated, “Teacher education and performance expectations should be modified to include information concerns” (n.p.). Progress has not come quickly. The Association of Colleges and Research Libraries[ACRL] issued a follow up report nearly ten years later that revealed that while progress was reported in detail on all other recommendations, a one word response was listed for Recommendation 5, “none” (ACRL, 1998). More recently, states have begun to include technology and information literacy competency requirements into their state standards, in part in response to pressure from regional accreditation bodies (Henderson & Scheffler, 2003). When addressed at the teacher education level, there is more of a chance for teachers to learn and then teach information literacy as a process, not bits and pieces such as use of specific resources, MLA documentation or fears of plagiarism as found in this study.

The phrase *educate the educators* was selected purposely to introduce this section, over the more typical, *train the trainer*. Information literacy education is necessary through all levels of the education system. While there is an effort to begin to include an information literacy component in undergraduate education studies, prompted by the inclusion of technology and information literacy competencies in the National Council for the

Accreditation of Teacher Education [NCATE] Standards in 2002. (NCATE, 2002), large-scale progress has yet to be realized (Henderson & Scheffler, 2003). Added to this lack of progress is the large number of educators already in teaching positions in the K-12 system as well as higher education who are not affected by these new standards. Furthermore, academic deans and administrators who are charting the direction of institutions often do not have experience or training in information literacy.

Beyond teacher education, current teachers at all levels should also have professional development opportunities that focus on information literacy. Energy must be shifted from the one shot 50-minute sessions to a more systemic change needed in the teaching ranks and curriculum. As librarians expect the undergraduate students in these sessions to grasp the desired skills, shouldn't they also be able to expect the faculty member that sits through countless renditions of this same material in his classes to grasp the same? Always presenting library sessions away from the classroom out of context with curriculum makes it continue to appear as an *add-on*.

## 2. Curriculum and Context

An effort must be made to teach information literacy skills within context. Institutions must embrace this initiative as well as the libraries. Christine Bruce, an avid advocate of information literacy in Australia, commented on this, "It has been evident that little of the literature is appearing in mainstream higher education journals or discipline based journals, suggesting that the transformation of the information literacy agenda from a library-centered issue to a mainstream education issue is only beginning" (p. 113). Collaboration between teaching faculty and librarian faculty should be further explored. Learning communities teaming a discipline course with a research component would be models to strive toward.

A model is emerging in four-year institutions that embeds the information literacy course into the departments or disciplines. For example, a specific course would address research or information needed in Art History and would reside in the Art Department. Badke (2005) discusses how this technique gives buy in to the faculty and legitimizes the courses. Faculty are less likely to feel that their precious time in class is being stolen if the training they need for students happens outside of their general class time. He illustrates his point:

The distinction might be illustrated by the difference between my own backyard and the neighborhood bark down the block. I may tolerate some strangers in the bark, as long as they behave themselves, but I don't want them jumping my fence and helping themselves to my barbecue or swimming pool.  
(p. 75)

The viability of such a tactic should be explored in community colleges. While class structures differ and research is not primary to the mission of community college classes, there could still be a logical placement of some of these classes. Teaching students the skills they need, at the time they need them, within the context of subjects that interest them could be very advantageous. It would have the added benefit of involving faculty and curriculum committees in the process to widen the acceptance and knowledge of information literacy initiatives on campuses.

Another promising vehicle for teaching in context is Problem Based Learning [PBL]. As described previously in the PBL process, the teacher becomes an expert or facilitator. The problem and its solution becomes the learning activity and the librarian is there to guide students to resources and help them refocus their searches. Use of PBL tactics can facilitate instructors and librarians drilling down in curriculum to combine the information goals of the librarians with the academic goals of the instructors.

### 3. Collaborate

The idea of collaboration between librarians and faculty members is not new, but a new way of looking at this collaboration is suggested. In a chapter on collaboration in a recent guide to teaching information literacy, Caspers (2006, pp. 21-30) made the distinction between parallel work, cooperative work, and collaborative work. Parallel work was described as when an instructor has goals and the librarian has goals but there is a very loose connection at best between these goals. A typical example of parallel work would be an instructor asking a librarian to provide a basic orientation type of tour to her class while she is out of town at a conference. Cooperative work would be described as an instructor supplying a librarian with an assignment she would like the librarian to teach and provide the session. True collaboration would come from instructors and librarians working in advance on desired learning outcomes for students, by designing curriculum and assignments together that will provide these outcomes. Reviewing the final product or outcomes of the collaborative assignments by both the instructor and librarian would complete this process.

### 4. Capitalize on Plagiarism Dialogue

The participants in this study expressed grave concern about committing plagiarism, but were unable to describe how to avoid it. As described previously, the rampant abuse of intellectual property is compounded by the explosion of the Internet. Librarians and administrators should take this opportunity to become proactive in the teaching of ethics and academic integrity. Infusing into course syllabi and course curriculum conversations about the larger intellectual dialogue that occurs in disciplines will broaden students' minds and help them think critically about research. Modern day examples of how students and users of

blogs feel when someone uses their words in subsequent postings can bring these issues home to students.

#### 5. Concentrate on Student Experience

Students arriving at community colleges, whether 18 years old or returning students, often feel unprepared for the demands of information gathering and use. The participants in this study described their lack of experience with libraries or library material throughout their school years. The use of First Year Experience or Orientation Programs that cover basic skills including information literacy should be explored at community colleges. At St. Louis Community College a course called College 100 brought together a team to revise a library scavenger hunt that students regarded as busywork to an assignment that was meaningful in their beginning studies at the college (Hovis & Savoca, 2007). A first year seminar at Indiana University-Purdue University Indianapolis is taught by a classroom instructor, a librarian, an academic advisor, and a student mentor (Kuh, Boruff-Johnson, & Mark, 2007).

These experiences should make sense in students' everyday lives. Community college students come from a wide background of experiences and often have busy family and work lives. A program used at Paradise Valley Community College in Arizona combines the cohort atmosphere with an integrated set of classes designed around a theme. Students in the cohort register for a block of courses that include Freshman English, Introduction to Sociology, Strategies for College Success, and Introduction to Computers. Students are also required to attend local cultural events and complete service learning projects (Cornell & Mosley, 2006). To complete any of these courses or projects it is necessary to gather information, and evaluate and synthesize it into student work. Inclusion of information

literacy skills into this type of setting is logical. Programs such as these could transform community colleges in preparing students for success in subsequent years.

### **Future Research**

Research should be conducted to assess the experience that instructors in the K-12 systems and community colleges environments have had with learning and teaching information literacy skills. In order to affect change and proceed with the recommendation that instructors are also trained to teach these skills there must be an understanding of the level at which instructors now operate as well as what standards currently exist that support this shift.

Research is needed to aggregate the regulations and standards in effect concerning information literacy instruction nationwide. Follow-up research is needed in states that have begun to implement information literacy instruction in teacher education and state licensing requirements. Assessment of student learning in these states could reveal if progress is being made.

### **Policy Implications**

Information literacy must be addressed earlier in the educational process of our students. Students that had some contact with information literacy at younger grades had a better grasp of the skills, but none of the students were taught in a holistic, repeated manner. The concept of learning across time after multiple exposures to material needs to be addressed. Key to this process is the training of future teachers as well as professional development for current teachers. Including state licensure requirements for instructors in K-12 systems will help to embed the instruction into the curriculum.

Best practices from regional accreditation organizations should be shared and implemented among regions. Currently there is a lack of uniformity in the emphasis that regional accrediting organizations place on information literacy (Saunders, 2007, p. 321). Emphasis ranged from “minimal with no use of the term information literacy” by the North Central Association of Colleges and Schools to “extensive, includes the phrase information literacy” by the Middle States Commission on Higher Education. The Middle States actually publishes a guidebook that outlines how to develop and implement a mission-driven approach to integrate information literacy across the curriculum (Middle States Commission, 2003). This approach should be explored by additional regions.

### **Reflection**

Writing the recommendations section of this study underscored for me just how difficult it is to affect change in this area. Information literacy is such a large, multi-faceted issue which includes instruction throughout a student’s life. The overall feeling that surfaced was the magnitude of the undertaking and the realization that librarians cannot do this alone. The instruction of information literacy is not only their domain. Most notably brought to the forefront for me was the notion that, if we can expect students to learn the information literacy process, we must certainly expect teachers and college instructors to be able to grasp the process as well as teach the process.

As I reflect on this research journey, I realize that my thoughts and attitudes have changed significantly. As I changed positions in my professional life, I had several years to observe students, particularly community college students, and had also worked extensively with colleagues on the topic of information literacy. When I began this journey, I had a more

simplistic view of the information literacy skills that a student needs in order to be successful in higher education and in life. I viewed students more out of context and information literacy as a set of skills onto themselves. During the process of this research, I began to realize that information literacy is part of a larger outcome that I, as a librarian and a community college administrator, am concerned about; namely, the ability of students to use information to acquire, construct, and disseminate knowledge—to think critically and solve problems.

**APPENDIX A. HUMAN SUBJECTS APPROVAL****IOWA STATE UNIVERSITY****DATE:** November 10, 2006**TO:** Lisa Stock**FROM:** Office of Research Assurances**RE:** **IRS ID #** 06-547**STUDY REVIEW DATE:** November 3, 2006

Institutional Review Board Office of  
Research Assurances Vice Provost  
for Research 1138 Pearson Hall  
Ames, Iowa 50011-2207

515 294-4566 FAX  
515 294-4267

The Institutional Review Board has reviewed the project, "Exploring Community College Students Development of Information Literacy Skills" requirements of the human subject protections regulations as described in 45 CFR 46.101 (b )(1). The applicable exemption category is provided below for your information. Please note that you must submit all research involving human participants for review by the IRB. Only the IRB may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.

The IRB determination of exemption means that this project does not need to meet the requirements from the Department of Health and Human Service (DHHS) regulations for the protection of human subjects, unless required by the IRB. We do, however, urge you to protect the rights of your participants in the same ways that you would if your project was required to follow the regulations. This includes providing relevant information about the research to the participants.

Because your project is exempt, you do not need to submit an application for continuing review. However, you must carry out the research as proposed in the IRB application, including obtaining and documenting (signed) informed consent if you have stated in your application that you will do so or required by the IRB.

Any modification of this research must be submitted to the IRB on a Continuation and/or Modification form, prior to making any changes, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

cc: ELPS  
Frankie Santos Laanan

ORC 04-21-04

## **APPENDIX B. INFORMED CONSENT AND INFORMATION LITERACY SHEET**

### **B-1. INFORMED CONSENT DOCUMENT**

**Title of Study:** Exploring Community College Students Information  
Development of Information Literacy Skills

**Investigator:** Lisa A. Stock  
Ph.D. Student, Educational Leadership and Policies, Iowa State University, Ames.  
M.A. Library and Information Science, University of Iowa, Iowa City, July 1987.  
B.A. Child Development, Iowa State University, Ames, August 1984.

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 learn more about the development of information literacy skills, sometimes known as research processes, in community college students. You are being invited to participate in this study because you are a community college student who has had opportunities to complete projects or papers that included documentation of resources.

#### **DESCRIPTION OF PROCEDURES**

If you agree to participate in this study, your participation will last for approximately two months and will involve a time commitment of approximately 4 hours. During the study you may expect the following study procedures to be followed. You will be asked to participate in a series of 3 interviews that are approximately 1 hour in length. You will be asked to provide two past assignments; one Composition II paper that required documentation; and an additional paper that required documentation from a class of your choice. You may chose whether you would like to provide such documents. The interviews will be taped, identities will be protected and tapes will be destroyed at the completion of the study.

#### **Risks**

While participating in this study you may experience the following risks: There are no foreseeable risks at this time from participating in this study.

#### **BENEFITS**

If you decide to participate in this study you will benefit from reflecting on your past experiences and added to the knowledge base of community college leaders.

#### **COSTS AND COMPENSATION**

You will not have any costs from participating in this study. You will receive \$10.00 for each of the 3 visits in the study or a total of \$30.00 if you complete the study. If you withdraw from the study, then you will receive \$10.00 for each of the visits completed.

#### **PARTICIPANT RIGHTS**

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

#### **RESEARCH INJURY**

Emergency treatment of any injuries that may occur as a direct result of participation in this research is available at the Iowa State University Thomas B. Thielen Student Health Center, and/or referred to

Mary Greeley Medical Center or another physician or medical facility at the location of the research activity. Compensation for any injuries will be paid if it is determined under the Iowa Tort Claims Act, Chapter 669 Iowa Code. Claims for compensation should be submitted on approved forms to the State Appeals Board and are available from the Iowa State University Office of Risk Management and Insurance.

**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 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: Subjects will be assigned a unique code and letter and will be used on forms instead of their name. Records will be kept confidential in locked filing cabinet and password protected computer files. The data will be retained for 1 year after completion and publication of the study before erasure or destruction. If the results are published, your identity will remain confidential.

**QUESTIONS OR PROBLEMS**

You are encouraged to ask questions at any time during this study. For further information about the study contact Lisa Stock, (515) 201-3710, [lstock@iastate.edu](mailto:lstock@iastate.edu) or my major professor, Frankie Santos Laanan, Assistant Professor, Educational Leadership and Policy Studies, Iowa State University, (515) 294-7292, [laanan@iastate.edu](mailto:laanan@iastate.edu) If you have any questions about the rights of research subjects or research-related injury, please contact Ginny Austin, IRB Administrator, (515) 294-4566, [austingr@iastate.edu](mailto:austingr@iastate.edu), or Diane Ament, Research Assurances Officer (515) 294-3115, [dament@iastate.edu](mailto:dament@iastate.edu).

**SUBJECT 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 signed and dated written informed consent prior to your participation in the study.

Subject's Name (printed) \_\_\_\_\_

\_\_\_\_\_  
(Subject's Signature)

\_\_\_\_\_  
(Date)

**INVESTIGATOR STATEMENT**

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

\_\_\_\_\_  
(Signature of Person Obtaining  
Informed Consent)

\_\_\_\_\_  
(Date)

**B-2. INFORMATION SHEET – INFORMATION LITERACY****Principal Investigator, Lisa A. Stock, ISU doctoral student****Contact: (515) 201-3710 email lastock@iastate.edu**

Please help me gather important information from you to better help match the study needs with your backgrounds. Please fill out both sides of the document.

Name: \_\_\_\_\_

Preferred Contact (i.e. phone number, email address) \_\_\_\_\_

Age: \_\_\_\_\_

Sex: (check one) Male \_\_\_\_\_ or Female \_\_\_\_\_

High School Attended: \_\_\_\_\_ Year of Graduation: \_\_\_\_\_

Have you completed or are you presently enrolled in an English Composition II Class?

Yes \_\_\_\_\_ No \_\_\_\_\_ Date of completion or anticipated completion \_\_\_\_\_

Would you be willing to share a copy of a research paper with documentation from your English Composition II course? Yes \_\_\_\_\_ No \_\_\_\_\_

What grade did you earn in your basic composition course, Composition I (check one) Grade B or above \_\_\_\_\_ C or below \_\_\_\_\_

Do you have at least 1 example of a research paper with reference lists included, from a class other than Composition II, completed in college that you are willing to share for this project?

Yes \_\_\_\_\_ No \_\_\_\_\_

Availability for Interviews: (Three one hour interviews must be scheduled, please indicate times you would be most likely to have an hour available.)

|       | <b>Monday</b> | <b>Tuesday</b> | <b>Wednesday</b> | <b>Thursday</b> | <b>Friday</b> | <b>Saturday</b> |
|-------|---------------|----------------|------------------|-----------------|---------------|-----------------|
| 7 AM  |               |                |                  |                 |               |                 |
| 8 AM  |               |                |                  |                 |               |                 |
| 9 AM  |               |                |                  |                 |               |                 |
| 10 AM |               |                |                  |                 |               |                 |
| 11 AM |               |                |                  |                 |               |                 |
| Noon  |               |                |                  |                 |               |                 |
| 1 PM  |               |                |                  |                 |               |                 |
| 2 PM  |               |                |                  |                 |               |                 |
| 3 PM  |               |                |                  |                 |               |                 |
| 4 PM  |               |                |                  |                 |               |                 |
| 5 PM  |               |                |                  |                 |               |                 |
| 6 PM  |               |                |                  |                 |               |                 |
| 7 PM  |               |                |                  |                 |               |                 |
| 8 PM  |               |                |                  |                 |               |                 |
| 9 PM  |               |                |                  |                 |               |                 |

Please read and sign the following statement:

I realize that this is a voluntary study. I understand the parameters of the study after attending this informational meeting or reading the informed consent document. By signing this sheet I am consenting to being considered as a participant in this study.

Student Signature \_\_\_\_\_ Date \_\_\_\_\_

## APPENDIX C. INTERVIEW PROTOCOL – DMACC STUDENTS

As Seidman (2006) suggests, I will use a three session interview technique. The first of the three interviews is used to focus on the participant's context. Information is gathered about the person's background, childhood, and as much of their past lives as possible. The purpose of the second interview is to concentrate on the details of the person's present life as it relates to the subject being studied, in this case information literacy. And lastly, the third interview is a time of reflection. The participant will be encouraged to reflect on the meaning of their experiences.

### Interview I

*Introduction – explain purpose of study; confidentiality; timing*

#### *Demographic information*

Name

Age

Program of Study

High School attended

#### *Life Experiences*

1. Please help me to get to know you better. What can you tell me about where you grew up, any details you'd be willing to share about your family, your friends.
2. Do you remember either of your parents telling you stories about when they went to school?
3. What was the last grade either of your parents attended? Was it high school, a little college, something else?
4. What were your first memories of reading as a child? Do you remember the very first book you ever read?
5. Can you tell me about a time that someone read aloud to you? Did you like it? What was it like?
6. Were there ever any books you couldn't wait to buy from the store, or get from the library? Do you remember what they were? How did you feel when you read them?
7. Describe books that you might have found laying around your house.
8. Describe your interactions with the public library in your town.
9. What was it like, can you help me see how it looked and felt?
10. Describe your favorite person growing up, why were they special to you? Can you recall a special story about them?
11. Can you describe to me something that you are really good at? How did you learn about it or how to do it? What do you do now to learn even more about it?
12. What are you hoping to do when you are finished at DMACC?
13. Have you always wanted to do this? How did you learn about it?

Now we are going to talk a little about the basis of this study. This will help us get ready for our next interview. We need to figure out our definition of information literacy. Here are some questions that will help us.

***Information Literacy***

1. What's your concept of information literacy is?
2. If I told you that it that a lot of people call it library skills, research skills, or information gathering techniques, could you describe how that looks to you?
3. What kind of skills do you think an information literate person would have?
4. Describe how you think someone could go about becoming information literate or good at research?

***Experiences in elementary school***

1. Describe to me a favorite teacher from elementary school. What made them special to you?
2. Did your elementary school have a library? Can you describe it to me? What was the staff like? Does anything stick out in your mind?
3. Do you remember having assignments that specifically asked you to gather library resources? Can you describe those for me?
4. How did you go about it? Was it fun?
5. How much of the information did you find electronically compared to in print?
6. What kind of help were you given?
7. Did you ever go to the library because you wanted to, or always because a teacher took you there?
8. What is your favorite memory of reading and libraries from elementary school?

**Interview II**

This interview will look at the students most recent interactions with information literacy. It will focus on high school and college experiences.

***High School Experiences***

1. What can you tell me about your high school library that will help me to a picture it? What were the staff members like?
2. Do you remember the books on the shelves? Could you describe what kind of shape they were in, how they were laid out in your library?
3. What research project or paper do you remember the most from high school? What was memorable about the experience?
4. Describe for me any formal kind of library instruction you might have received in high school. What was it like? In what ways did you find it helpful or not helpful?
5. Can you describe for me how research papers or projects were usually assigned?
6. Can you recall if you had opportunities to work on projects in stages, maybe creating note cards, multiple drafts? Any thing like that?
7. Could you easily access any online databases, the kind the librarians usually show you, that aren't just web pages? Where were you at when you would use these? How did they work from home? Do you remember the names of any of them?
8. What kind of web sources did you use in general? How did your teachers feel about web sources? Can you recall anyone having strong feelings about types of materials?

9. Describe for me how you would typically go about finding information for a project in high school.
10. What kind of special events can you remember that required you to find information? Maybe a science fair, a club activity?
11. Explain to me the amount of time you usually put into researching a project. Do you recall researching in stages or finding information and then looking for even more later?
12. What kind of writing format did your teachers require? Did they ask you to use a particular form for reference lists? Do you remember if that had a name?

### ***College Experience***

1. Describe for me what your experience has been like with information literacy since you've been in college.
2. What classes have you had at college that required documentation on papers?
3. Could you describe the assignments?
4. In what areas have you felt prepared to take on the challenges of writing papers?
5. In what areas have you felt less prepared in this task?
6. Can you describe what kind of resources or documentation that your college professors require?
7. Do you feel confident that you can find what you need for a paper or project?
8. Describe to me the process you use to work on a project at the college level.
9. When you use material from the web how do you usually handle it? Do you print it off, cut and past parts into what you are working on at the time?
10. Describe the important parts of the web page that you might have to refer back to later.
11. Have you ever had any issue with an instructor about resources used in a paper or project? What was that like?
12. Who would you go to if you could not find the information you needed on your own? How would you go about it?
13. What types of materials do you usually use on projects? Are they in print or online?
14. Can you describe for me a project or paper that stands out in your mind for any reason? What was notable about it?
15. Describe your interactions with the library or librarians at your college.
16. How have you received information about resources available to you at DMACC?
17. How was the delivery of that information to you helpful, or not helpful?
18. Does anything really stick out in your mind that is different between what you learned about information literacy in high school and what you learned about it in college?
19. Do you feel equipped to find information you need for personal reasons, maybe buying a new car, looking up how to work your iPod, stuff like that? Where would you go to look for things like that?
20. Describe what kind of documentation style your instructors at DMACC would like you to use for papers. Do you feel confident that you can use them correctly?
21. Describe any interactions you might have with the public library in your hometown or here in Ankeny during your college years.

**Interview III**

We've talked about a lot of things in the last 2 interviews. In this interview, I'd like you to reflect on all the experience that you have told me about, and think about what they have meant to you.

***Reflection***

1. As you think about all that you've shared, can you describe the experiences or people that you feel have been the most influential in your development of information literacy?
2. Can you relate moments that you felt were times that you truly used information literacy to help yourself or others?
3. Can you reflect on and explain ways in which librarians or teachers could better help students to gain information literacy skills?
4. Is there anything that you want to tell me about this experience or thoughts that have occurred to you throughout this process?

**APPENDIX D. RUBRIC FOR RESEARCH**

|                                  | <b>Thesis/Problem/Question</b>   | <b>Information Seeking/Selecting and Evaluating</b>   | <b>Analysis</b>   | <b>Synthesis</b>   | <b>Documentation</b>  | <b>Product/Process</b>  |
|----------------------------------|--|---|---|--|---|---|
| <b>4</b>                         | Student(s) posed a thoughtful, creative question that engaged them in challenging or provocative research. The question breaks new ground or contributes to knowledge in a focused, specific area. | Student(s) gathered information from a variety of quality electronic and print sources, including appropriate licensed databases. Sources are relevant, balanced and include critical readings relating to the thesis or problem. Primary sources were included (if appropriate). | Student(s) carefully analyzed the information collected and drew appropriate and inventive conclusions supported by evidence. Voice of the student writer is evident. | Student(s) developed appropriate structure for communicating product, incorporating variety of quality sources. Information is logically and creatively organized with smooth transitions. | Student(s) documented all sources, including visuals, sounds, and animations. Sources are properly cited, both in-text/in-product and on Works-Cited/Works-Consulted pages/slides. Documentation is error-free. | Student(s) effectively and creatively used appropriate communication tools to convey their conclusions and demonstrated thorough, effective research techniques. Product displays creativity and originality. |
| <b>3</b>                         | Student(s) posed a focused question involving them in challenging research.  | Student(s) gathered information from a variety of relevant sources--print and electronic  | Student (s) product shows good effort was made in analyzing the evidence collected  | Student(s) logically organized the product and made good connections among ideas   | Student(s) documented sources with some care, Sources are cited, both in-text/in-product and on Works-Cited/Works-Consulted pages/slides. Few errors noted.   | Student(s) effectively communicated the results of research to the audience.  |
| <b>1</b><br><b>1</b><br><b>2</b> | Student(s) constructed a question that lends itself to readily available answers   | Student(s) gathered information from a limited range of sources and displayed minimal effort in selecting quality resources   | Student(s) conclusions could be supported by stronger evidence. Level of analysis could have been deeper.   | Student(s) could have put greater effort into organizing the product   | Student(s) need to use greater care in documenting sources. Documentation was poorly constructed or absent.   | Student(s) need to work on communicating more effectively   |
| <b>1</b>                         | Student(s) relied on teacher-generated questions or developed a question requiring little creative thought.  | Student(s) gathered information that lacked relevance, quality, depth and balance.  | Student(s) conclusions simply involved restating information. Conclusions were not supported by evidence.   | Student(s) work is not logically or effectively structured.  | Student(s) clearly plagiarized materials.   | Student(s) showed little evidence of thoughtful research. Product does not effectively communicate research findings.   |

Source: Valenza, J. K. (2006). Rubric for a Research Project. Retrieved October 7, 2006, from <http://mciu.org/~spjvweb/resrub.html>

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