IDENTIFYING THE INFORMATION-SEEKING BEHAVIORS OF STUDENTS, THE EXPECTATIONS OF FACULTY, AND THE ROLE OF LIBRARIANS IN WRITING ASSIGNMENTS THAT REQUIRE STUDENTS TO USE INFORMATION SOURCES IN SELECTED PENNSYLVANIA COMMUNITY COLLEGES: A MODEL FOR INSTRUCTION

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The intent of this exploratory study is to identify the information-seeking behaviors used by community college students when using information resources to complete a writing assignment, the expectations that faculty have in regard to that writing assignment and the role librarians can play in that process through information literacy instruction. The population identified for this study was the population of community college students in Pennsylvania involved with their first writing assignment and who may or may not have had exposure to an information literacy instruction class. Pennsylvania community colleges were chosen because Pennsylvania does *not* have a statewide community college system. Based on analysis of findings from the interactions among students, faculty and librarians, the researcher outlines some best practices for community colleges in Pennsylvania to adopt and proposes a model for instruction based on those practices. The best practices include: 1) faculty and librarian collaboration to address advanced information literacy instruction needs of students to complete the writing assignment successfully, 2) allocation of more time by faculty for librarians to instruct students on advanced searching skills and citation formats, 3) development and adoption by community college librarians of a set of standardized learning objectives based on performance indicators outlined by the Association of College and Research Libraries to ensure that all students receive the skills necessary to provide a strong foundation for using library resources.

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PREFACE

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I would also like to thank my husband, Greg, and my best friend, Teresa, for supporting me and helping me get through the past six years. Their encouragement and constant reinforcement got me through the toughest times, and in many ways, this degree is as much theirs as mine, since they have been with me every step of the way.

Finally, I would like to dedicate this dissertation and degree to my father, John B. Stout, Jr. (1917-1994). A graduate of West Virginia University and a mechanical engineer, my father valued education above all else. Throughout my higher education experience he always wanted to know when I was getting that, "next piece of paper." To him and my mother, Marian (1921-1990) I offer this work.

Barbara A. Stout Zaborowski
2008

1.0 INTRODUCTION

1.1 OVERVIEW

The intent of this exploratory study is to identify the information-seeking behaviors used by community college students when using information resources to complete a writing assignment, the expectations that faculty have in regard to that writing assignment and the role librarians can play in that process through information literacy instruction. Each semester in colleges and universities in the United States undergraduate students are assigned the task of writing a term paper. For some students, depending on the course, they are able to select a topic within a discipline that is of interest to them. For others, topics are assigned and students have little latitude for adapting the topic to something of personal interest. Students are instructed to develop a thesis statement or take a position on a topic, use available resources and produce a well-documented, well-written paper. For the average student, this assignment can prove daunting: How to narrow a topic? What are considered reputable, reliable sources? Where to begin? The Internet? The library?

The Association of College and Research Libraries of the American Library Association has identified standards, performance indicators, and outcomes that each college student should be able to demonstrate to be considered information literate. The first standard indicates that, "the information literate student determines the nature and extent of the information needed" (Association of College & Research Libraries, 2000). If it is assumed that the beginning of any term paper starts with the formulation of the information need, then it should be simple for the student with a topic to begin the writing process. How easy is it, however, for students to

formulate the "nature and extent" of the information needed? Spink, et. al (Spink, 2002) indicates that humans coordinate a number of elements, including their cognitive state, level of domain knowledge, and their understanding of their information problem, into a coherent series of activities as part of the information-seeking process. For undergraduate students taking a broad spectrum of courses the components of domain knowledge and understanding of the information problem may not exist for every discipline area for which a term paper is required. How then do students approach writing assignments that require the use of information sources?

In most situations there are two additional resources that students have at their disposal when beginning a writing assignment--the librarian and the faculty member. Unfortunately, in the case of the librarian and the use of library materials, college students are either unaware of these resources or they do not know how to use them. Many students move from course to course with only a marginal understanding of how to use research tools and how to evaluate resources (Quarton, 2003). Likewise, students are reluctant to seek help from a faculty member or professor even though it may save them an incredible amount of time because they believe either it is inappropriate or they are too intimidated to initiate such as request (Leckie, 1996a).

So what is the result of the student writing process? For students it can be a frustrating endeavor fraught with overwhelming amounts of information and a final product that does not meet the expectations of the instructor. For the librarian, the desire to assist the student may be overwhelmed at times by the number of students needing assistance and the result is frustration, annoyance, and possibly even anger at a situation not of the students' making and beyond their control (Leckie, 1996a). For the faculty member, the process results in a final paper that does not meet the definition of research, "The research aspect [of the papers] were not good. Only four or five got the research part." (Valentine, 2001a).

Before examining the process students use when completing a writing assignment and how they use information resources, it is necessary to understand the information-seeking behaviors of students, the expectations of faculty and how they communicate that expectation to students, as well as the role the librarian plays in supporting information-seeking behaviors through instruction in the use of resources.

1.2 CONCEPTS

1.2.1 The Community College

For the purpose of this study, the information-seeking behaviors of community college students will be examined. Because community college students bring to the writing and information-seeking process a variety of experiences and domain knowledge, they differ from four-year undergraduates who tend to be more traditional in demographics and experiences. Enrolling traditional students (age 18-24) and non-traditional students (older than 24), community colleges are unique in that students attend for a variety of reasons and for a much shorter period of time; two- years versus four-years. According to the National Center for Education Statistics (NCES), 44% of all college students in 2005 were enrolled in two-year institutions (National Center for Educational Statistics, 2005).

It is equally important to study community colleges because of the distinct mission of the community college, which is different from that of a traditional four-year institution. Community colleges have "open-door" admissions policies that do not require any test for students to be admitted (e.g., SAT or ACT). This open-door policy has resulted in a faculty focused on teaching rather than on research. Dedicated to pedagogy, community college faculty typically do not engage in research studies. Using traditional definitions of scholarship, it is commonly accepted that community college faculty do not conduct as much research as do four-year faculty

(Ford, 1999). Therefore, studies of information-seeking behaviors of community college students are limited because there appears to be no faculty in the field conducting and publishing research in this area. As a result, existing research that focuses on information–seeking behaviors of students in four-year institutions is not applicable to community college students because of the diversity of the populations and the differences inherent in the missions of the institutions.

1.2.2 Types of Student Writing Assignments

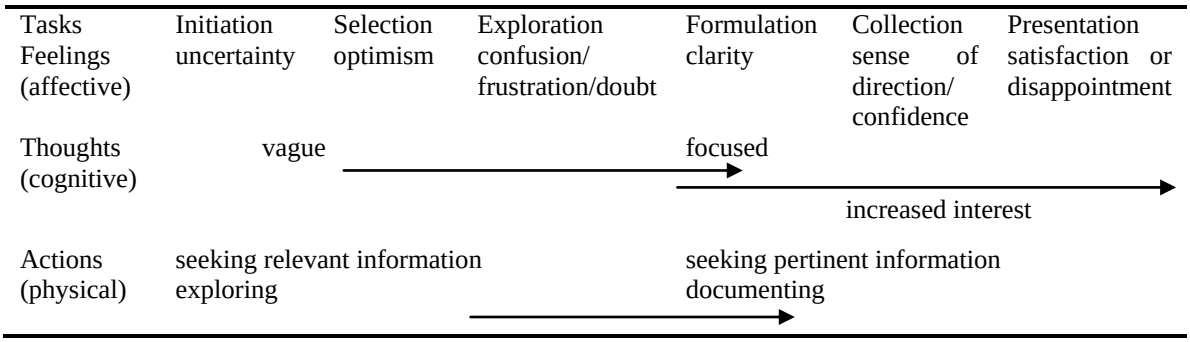
Just as there are specific differences in the age and composition between community college students and four-year university students, there are differences in the definition of what constitutes a writing assignment between a community college and a four-year institution. In community colleges, a "paper" can actually encompass a wide variety of lengths, formats, and resources. When asked to prepare a paper that uses information resources, many first-year college students tend to submit a position paper filled with opinions and unsubstantiated claims rather than a research paper (Broskoske, 2005). Students also tend to confuse papers that require use of information resources with essays or term papers. For most community college students, the terms "essay," "term paper," and "research paper" are interchangeable. Through personal experience, community college students will describe a need for citations for a "research paper." When asked about the length of the paper, however, students respond by indicating a paper length of five to ten pages.

The American Psychological Association's (APA) publication manual has clear guidelines for reporting research. Key parts of reporting research include an introduction and statement of the problem, methods used, results found, and discussion of those results (*Publication Manual of the American Psychological Association*, 2002). For students restricted to a length of five to ten pages, it would seem impossible to meet the guidelines as outlined by

the APA. For community college students who must identify a topic, take a position regarding the topic, identify sources that support the position or topic, and report on the findings, restricted page limits pose a problem to information-seeking and writing. For the purpose of this study, the phrase "writing assignment" will be defined as a piece of written work that a student prepares on a topic related to a particular course of study and requires the use of information resources.

1.3 INFORMATION-SEEKING PROCESS AND MODEL

The first step for a student in the writing process is to identify a topic and either narrow or broaden the topic. This can be quite difficult for students depending on their domain knowledge, information-seeking skills, and ability to process information once identified. Even once identified, students struggle with the actual “how” of identifying resources to use for a term paper. The confusion experienced by students has been identified by Carol Kuhlthau through a process referred to as the “information-seeking process.” The Kuhlthau information-seeking process consists of six steps that students move through as they are identifying information and reformulating their information need. The six stages are: initiation, selection, exploration, formulation, collection, and presentation. During each of these stages students exhibit certain characteristics of information-seeking that are unique to that stage.



Note. From *Seeking Meaning* (p.82), by C.C. Kuhlthau, 1991. Connecticut: Libraries Unlimited.

Figure 1. 1 Kuhlthau information-seeking model (1991)

It is at the "Exploration" stage that students experience the greatest anxiety and confusion regarding a topic they have chosen. Overwhelmed by the amount of information available students struggle with how to assimilate the information they have gathered and determine how to proceed. Likewise, once students have identified key references, they move into the "Formulation" stage at which time they feel more confident about their topic and are willing to aggressively move into the Collection stage. While in the Formulation stage, students are more apt to engage with a librarian or instructor to solidify the selected topic and to begin identifying materials to use as resources in the paper.

1.4 ROLES OF FAULTY AND LIBRARIANS IN THE INFORMATION-SEEKING PROCESS

After assigning a term paper, a faculty member can interact with students and explain the assignment and can help alleviate student anxiety. Communication of the writing assignment has a direct bearing on the quality and number of scholarly citations used. Davis (2002) determined that written assignments that included specific expectations resulted in an increase in the number of scholarly citations used. Similarly, verbal instructions by faculty and teaching assistants resulted in no change in the quality of citations used (Davis, 2002a). While faculty are the

primary resource for students, it is also important to note that although most faculty are fairly adept at performing research in their own fields of literature and rhetoric, they are not necessarily equipped to teach library research strategies for the broad range of student topics (Emmons & Martin, 2002)

Ideally, the academic library should be the first stop on a student's search for resource materials. In the academic library, Leckie (1996) has defined a two-fold role for librarians when interacting with students. The first role is that of information gatekeeper and guide to identifying and locating materials needed by students engaged in a writing assignment. The second role is that of instructor on the uses of library materials and the determination of appropriateness of resources. The first interaction usually takes place with students and librarians at the reference desk. In regard to reference librarians, some students are reluctant to approach a librarian while others want librarians to help them in narrowing a topic, finding citations, evaluating those citations, and retrieving the materials. The second role of the academic librarian is that of instructor in information literacy. For librarians an opportunity exists in which collaboration with faculty can help in refining assignments for students and improving access to library materials (Davis, 2002a, 2002b; Leckie, 1996b) .

1.5 EPISTEMOLOGICAL FRAMEWORK

The theoretical perspective that will address the information-seeking behaviors of students and also enable the creation of an instruction model is that of "constructivism." Constructivism builds on prior knowledge and gives students and adults an opportunity to make sense of the world by engaging them in exploratory processes. Meaning is constructed out of natural phenomena and everyday experiences. Students can explore an area of interest, propose tentative explanations and solutions, explore again, and evaluate the concepts through personal action.

A tested model that incorporates the theoretical perspective of constructivism has been used by Carol Kuhlthau (2004) to develop a model of information-seeking behavior. In her book, *Seeking-meaning: a Process Approach to Library and Information Services,* she identifies the three learning theorists who form the basis for her constructivist approach to the learning process.

The theories of John Dewey identify learning as an active individual process. For Dewey, learning takes place through a series of actions of acting and reflecting. Learners reflect on actions and through that reflection form new actions. The cycle of acting and reflecting is the process through which learning takes place (Kuhlthau, 2004). Dewey further expands on the process of reflective thinking by identifying the five phases of this process: suggestion, intellectualization, guiding idea, reasoning, and testing by action (Kuhlthau, 2004).

A second theorist that Kuhlthau (2004) draws upon in developing her model is George Kelly and his Personal Construct Theory. Littlejohn (2005) supports the Kuhlthau model by stating that constructivism is based partially on George Kelly's theory of personal constructs, which proposes that persons understand experience by grouping events according to similarities and distinguishing between things by their differences. Kuhlthau identifies Kelly's five phases of construction; namely, confusion and doubt, mounting confusion and possible threat, tentative hypothesis, testing and assessing, and reconstructing. By outlining these phases, Kelly proposes that in information-seeking these phases may be envisioned as either styles or traits that are habitually followed or as strategies and states that arise from a particular problem or stage of the process (Kuhlthau, 2004).

The final theorist that Kuhlthau draws upon for her information-seeking process model is Jerome Bruner. Bruner is important because he incorporates the processes identified by Dewey

and Kelly but also draws from a cognitive psychology framework. Bruner proposes that cognition is centered on the interpretation of information by an individual. Bruner identifies a five-stage process consisting of perception, selection, inference, prediction, and action (Kuhlthau, 2004). By taking a cognitive approach, Bruner recognizes that individual learning is a process upon which thoughts, actions, and feelings have an impact.

Building on the theoretical perspectives identified by Kuhlthau (2004) enables an understanding of a student's information-seeking processes and thus allows for the creation of an instruction model that addresses and adapts to those processes. The weakness in the Kuhlthau model, however, is that it is a longitudinal model and a short-term study may not provide the same results.

1.6 PROBLEM STATEMENT

With the onset of competency-based standards established by either the Association of College and Research Libraries (ACRL) of the American Library Association or by regional accrediting bodies such as the Middle States Association of Colleges and Schools, library instruction has been focused on teaching these standards and competencies without assessing student skill levels or information-seeking behaviors before applying instruction. This is evidenced by the number of post-instruction assessment tools such as the Information-seeking Skills Test (ISST) that is administered to students at the end of the second semester at James Madison University (James Madison University).

When examining the relationships between student information-seeking behavior and the impact on those behaviors by interaction with the faculty member and the librarian, there are several interactions that can take place. The following diagram depicts the possible interactions that students can have with or without interaction with either a faculty member or a librarian.

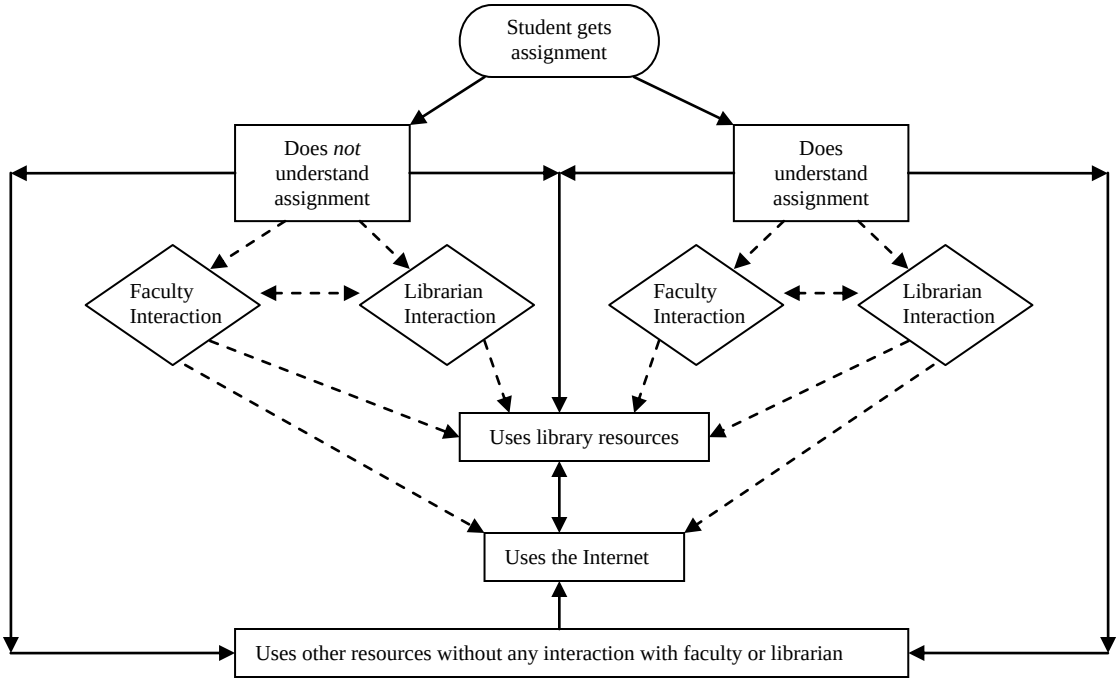


Figure 1. 2: Proposed Zaborowski model of student perceived interactions with faculty, the librarian, and information resources

In this diagram, choices made by the student determine which of these interactions occurs. Once given a writing assignment, a student's first decision is to determine whether or not he understands the assignment. If he has an understanding of the assignment, the student may choose to interact with the faculty member for additional clarification or interact with the librarian to identify information resources or interact with both. If the student does not have an understanding of the assignment, the interaction with the faculty member may be more imperative to refine the information need and the interaction with the librarian may be necessary to begin to formulate an information-seeking strategy. The faculty member and librarian may also interact for clarification of the assignment. In either case, the student could choose to go directly to the Internet to search for material on the writing assignment topic. In 2005, a study conducted by OCLC Online Computer Library Center determined that 72% of college students

surveyed indicated they would use a search engine before any other information sources including the physical or online library (OCLC Online Computer Library Center, 2005). Each of these interactions, therefore, is designed to determine if there is a difference in the information-seeking behaviors of students and ultimately to determine the quality of the writing assignment based on whether the student interacted with the faculty member or the librarian, with both or with neither.

The focus of this research, therefore, is to examine the information-seeking behaviors of students and what the impacts of interactions or lack of interactions with the faculty member and the librarian have on the students' information-seeking process. The ultimate result will be a proposed model for instruction based on the information-seeking behaviors of students, the expectations of faculty, and the role librarians can play to enhance the writing process for the students.

1.7 RESEARCH QUESTIONS

The study has been designed to investigate the following questions and propose a model for instruction that takes into consideration the experiences and expectations of faculty, the information-seeking behaviors of students, and the role librarians play in bridging the gap between faculty expectation and student information-seeking skill levels.

1. What factors influence a student's topic selection for a writing assignment that requires the use of information resources and to what degree does the student's selection of that topic have an impact on his/her information-seeking behaviors?
2. How do the interaction(s) or lack of interaction with the faculty member and/or with the librarian influence the information-seeking behavior of students?

3. To what degree do faculty expectations regarding student writing assignments and how those expectations faculty members communicate affect the students' information-seeking behavior?
4. To what degree do librarians influence students' information-seeking behaviors either through direct interaction with students in the library setting or through information literacy instruction?

Based on analysis of the responses to these queries, a model for instruction has been developed.

1.8 LIMITATIONS

Both internal and external validity are important for the credibility of the process and ultimately for the conclusions derived from the study. Krathwohl (1998) defines validity as the following:

> The evidence that permits the inference of whether a cause and effect relationship exists is described by a concept called internal validity (LP) where the LP stands for "linking power" – the capacity provided by a research study for readers to link cause and effect. In similar fashion, the evidence permitting inference of generality is described by external validity (GP) where GP stands for "generalizing power" – the capacity provided by the research study for readers to generalize the casual relationship beyond the study's particular constellation of circumstances (p. 137).

The primary threat to the internal validity of the study is attributable to the fact that the researcher was the only investigator who interacted with all the survey respondents, who analyzed the data, and who interpreted the results. The researcher is also a librarian in a Pennsylvania community college and has a prior knowledge of challenges and practices of other Pennsylvania community college librarians. A secondary threat to internal validity is that the study does not address the teaching skills of either the participating faculty or librarians. The skill levels of the faculty and the librarians could have an impact on the information-seeking skills of students; the study, however, is limited in its ability to address these potential

deficiencies. A final threat to the internal validity is the lack of control over the scope of the writing assignment and the lack of criteria for evaluating the types of information resources used to complete it. Meeting the expectations of faculty for the completed assignment was based on a variety of assessments applied by each faculty member.

The threat to the external validity of the study was the limited scope of the geographic location and the number of participating community colleges. While the findings may not be applicable to all community colleges in the United States, the findings may be applicable to the other community colleges in Pennsylvania and are certainly applicable to the community colleges that participated in the study.

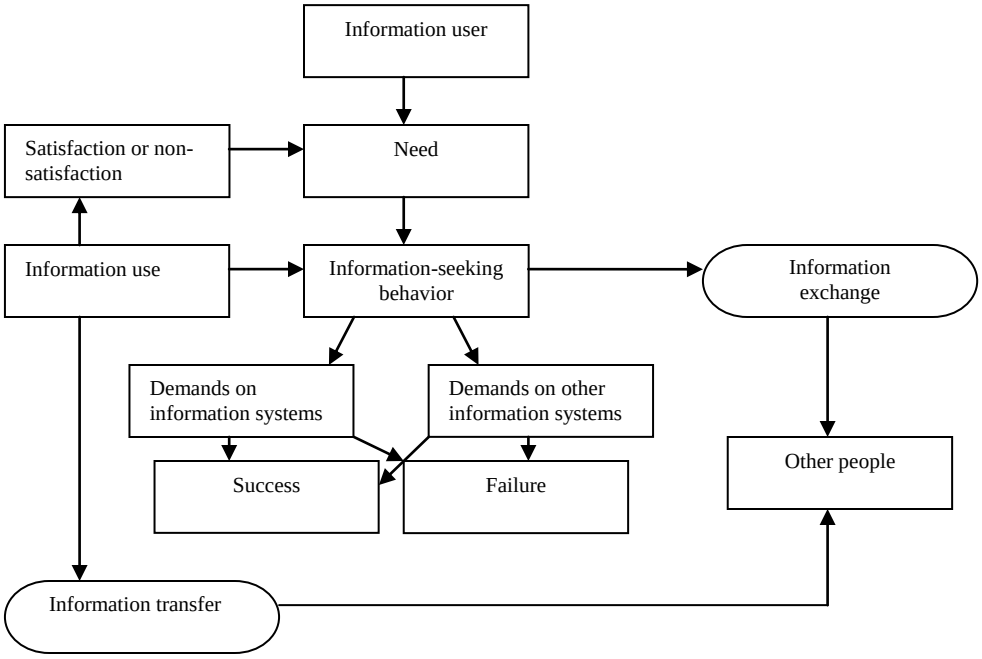
2.0 LITERATURE REVIEW

To understand the way in which community college students seek information it is necessary to provide an overview of information-seeking models and behaviors and how those translate to activity in a community college setting. The information-seeking models selected in Section 2.1 are from Wilson, Krikelas, and Kuhlthau. Coupled with information seeking models are the information-seeking behaviors of users. Section 2.2 identifies the behaviors exhibited by students seeking-information, faculty communicating information, and librarians providing information instruction. Finally, Section 2.3 sets the framework for an understanding of community colleges and the role and expectations of faculty.

2.1 INFORMATION SEEKING MODELS

2.1.1 Wilson Model

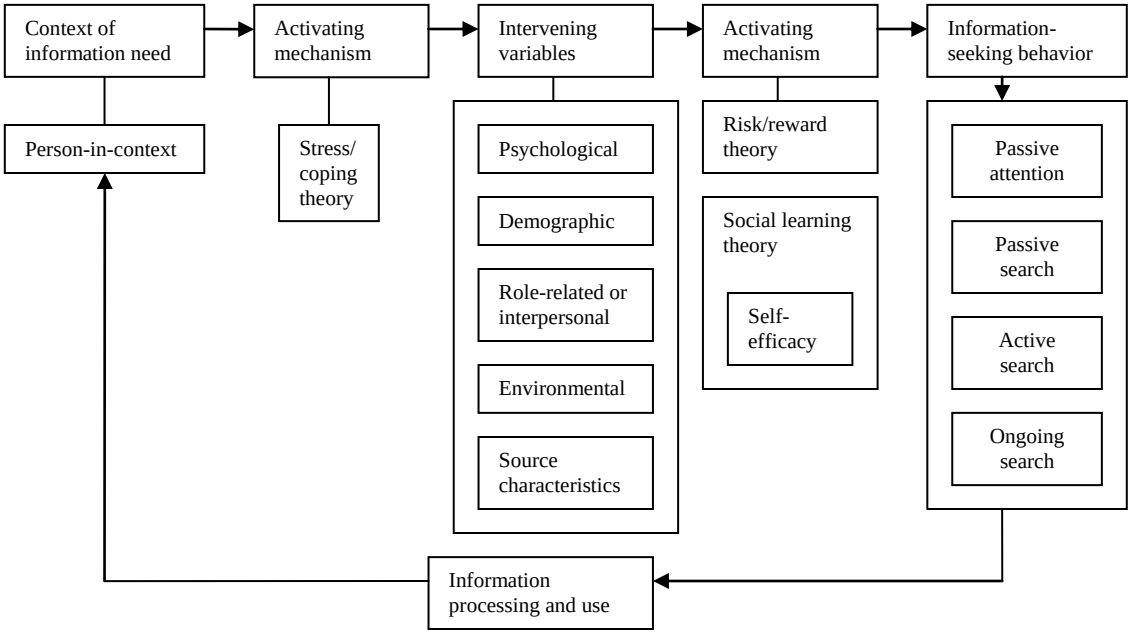
Wilson's model, first identified in 1981, is based on a user having a need that may or may not stem from previously acquired information. This model suggests that information-seeking behavior arises as a consequence of a need perceived by an information user, who, in order to satisfy that need, makes demands upon formal and information sources or services, which results in success or failure to find relevant information (Wilson, 1999).



Note. From "Models in Information Behaviour Research," by T.D. Wilson, 1981, *Journal of Documentation*, *55*, p. 251.

Figure 2. 1: Wilson's Model of Information Behavior (1981)

The 1981 model contains 12 components and was adapted in 1996 by Wilson into a second information model that draws from a variety of fields other than information science, including decision-making, psychology, innovation, health communication and consumer research (Wilson, 1999).



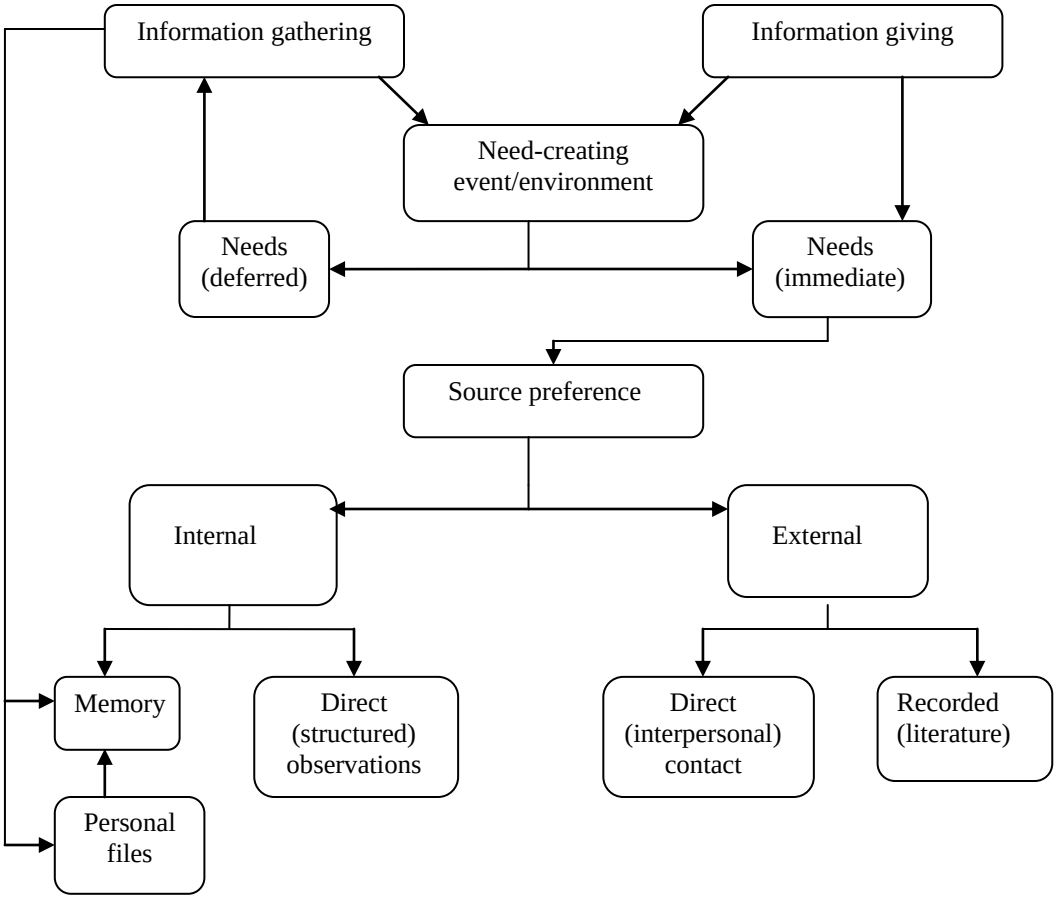
Note. From "Models in Information Behaviour Research," by T.D. Wilson, 1981, *Journal of Documentation*, *55*, p. 257.

Figure 2. 2: Wilson's 1996 Model of Information Behavior

By drawing on theories and components from other disciplines, the revised model clarifies the difference between being exposed to information and actively seeking it out.

2.1.2 Krikelas Model

The Krikelas model contains 13 components and claims to be a general model that would apply to ordinary life. In the Krikelas model there are two distinct actions-information gathering and information giving. Information gathering come in response to deferred needs, which in turn have been stimulated by an event or the general environment of the seeker (Case, 2002). Information giving is defined as the act of disseminating messages that maybe communicated in written (graphic), verbal, visual or tactile forms (Krikelas, 1983).



Note. From "Information Seeking Behavior: Patterns and Concepts," by K. Krikelas, 1983, *Drexel Library Quarterly*, *19*, p. 17.

Figure 2. 3: Krikelas model (1983)

One appealing aspect of the Krikelas model is its simplicity. The model is a simple, one-dimensional flowchart in which all of the arrows travel in one direction and no one part of the process encompasses another (Case, 2002). This simplicity is also the fundamental problem with the model. As other models have demonstrated, information-seeking is not a linear process but one that requires that information seekers gather information, reassess and seek additional information.

2.1.3 Kuhlthau Model

As described in section 1.3, in 1991 Carol Kuhlthau proposed a six-stage model for information-seeking behavior based on longitudinal studies conducted with high school students and later when the same cohort of students were in college. The result of the study identified the six-stages that students progress through when identifying an information need, seeking information, evaluating information, and ultimately using information to satisfy the need. Specific activities take place at each step of the process allowing information seekers to move from a state of uncertainty to confidence in the information they have selected.

The Kuhlthau model represents the user's sense-making process of information-seeking incorporating three realms of activity: physical, (e.g., actual actions taken); affective, (e.g., feelings experienced); and cognitive, (e.g., thoughts concerning both process and content (Kuhlthau, 1991).

2.2 INFORMATION SEEKING BEHAVIORS

2.2.1 Students

When looking at a student's information-seeking behavior, it is important to place the student in the perspective of the total academic community that exists on college and university campuses. Students move through school with the goal of graduating. Their extracurricular commitments—employment, sports, social lives—are just as important to them personally as their academic ones (Valentine, 2001a). So students approach the writing process as just one more task they need to accomplish in a schedule that is already filled with other academic and non-academic responsibilities. The demographics of the typical college student are also quite different. Students are much more diverse today—with a wider range of ages, a broader range of ethnic

and linguistic groups and disabilities. They can also be full- or part-time students and can be commuters or residents. There are more information resources available, but also more technologies to master. It is now more difficult determine that students in any given class will have uniform skill levels in using the complex and varied resources of academic libraries to produce a research paper (Leckie, 1996a).

Another important factor affecting student information-seeking success is the domain knowledge that a student brings to the process. The term "domain expert" is used to identify individuals who have expert knowledge in a subject domain or field of study. The term "non-domain expert" is applied to individuals who do not yet have expert knowledge in a subject domain or field of study (Drabenstott, 2003). Because of the nature of undergraduate coursework, students often find themselves completing writing assignments that required the use of information resources in areas for which they have no domain knowledge. This lack of domain knowledge has an impact on the way in which students go about seeking information.

Faced with the overwhelming task of conducting well-developed and well-cited information sources, students tend to approach the topic for a writing assignment by using identified information-seeking behaviors. Historically, there have been several attempts to identify those behaviors or those factors affecting behavior. Stoan (1984) determined that undergraduate students especially did not know the names of researchers active in particular areas, did not know the journals that publish research relevant to their interests and, except for their instructors, they had no knowledgeable colleagues to consult for suggestions. Students then resorted to searching by subject in the library's literature. Once a book was located, students would supplement their searching by using area scanning to locate materials shelved together nearby.

When searching online databases regardless of topic, novice searchers (i.e., searchers with no previous training in online searching) displayed no differences in their use of search tactics. A possible explanation could be that searchers need to have a certain amount of search experience for subject knowledge to have any effects on them (Hsieh-Yee, 1993). Both Stoan (1984) and Hsieh-Yee (1993) concluded that a student's level of domain knowledge has an impact on information-seeking behaviors and subsequent use of information. A 1991 study conducted by Carol Kuhlthau focused on the search process that high school students go through when seeking information. The strength of the Kuhlthau model is that it was tested using students in high school and studied them longitudinally through college. For these users, the information search process had become an important way to learn rather then just a means for fulfilling requirements for a course (Kuhlthau, 1991).

Each stage of the Kuhlthau six-stage model is characterized by specific behavior on the part of the information seeker. In the "initiation" phase a student becomes aware of his lack of domain knowledge and has feelings of uncertainty or apprehension. During the "selection" phase, the student selects a general topic and then determines the best approach in which to pursue research.

"Exploration" is characterized by increased feelings of uncertainty. At this stage, students are intent on becoming more oriented to their topic and therefore seek out a focus for continued research. It is at this "focus" stage that students can be lead into a "false focus": a focus that is induced so that it comes too soon and is ultimately incompatible with the information need and interests of the user (Kennedy, 1999). Students who fall in the false-focus trap tend to pick topics based on expediency, without consideration of personal domain knowledge, which then has an impact on their ability to synthesize information retrieved. To help students avoid the

false focus dilemma, librarians need to control the desire to direct students into a "focused" path. Students at this stage need to be able to access a broad array of materials on a topic so that they can have a greater understanding of the issues and then narrow the topic at this point. Librarians can assist with this understanding of the larger topic or issue by assisting students in matching search strategies with the topic of the focus so that students are able to retrieve materials best suited to their needs.

At this point students should progress into the "formulation" stage in which previous feelings of uncertainty disappear and more feelings of confidence emerge as the research topic is refined. "Collection" is the stage at which the student and the information system are in harmony and the task of gathering information has become an interactive process and information being retrieved is useful and supports the research topic.

The final stage is "presentation." At this stage a sense of relief is felt by the student accompanied by the notion that the research went well or not. It is at this point that active research stops and students prepare to synthesize information and write the paper. While these are stages that Kuhlthau has identified as the ones that students progress through, there are other external factors that also influence the information-seeking behaviors of students.

Students may also exhibit certain information-seeking strategies based on the perceived verbal behaviors of their instructors. Meyers (2001) conducted a study that compared communication behaviors in organizations with that of communication behaviors in a classroom. The particular information behavior tested was that of information seeking. In this model, five strategies were used by organizational newcomers: overt, direct, third party, testing, and observing. The overt strategy is the only one that requires direct interaction between two organizational members. The remaining four strategies are considered monitoring in which

members obtain information through ways other than direct communication (Myers & Knox, 2001). The perceived verbal communication of instructors could also influence the type of information strategy a student uses. Instructor behaviors include clarity, verbal immediacy, and verbal receptivity. When assigning research papers, instructors who are clear about the assignment and who provide students with examples, definitions, and feedback lower the level of apprehension of their students as well as increase the likelihood of students retaining course information. Verbal immediacy is a behavior that bridges the distance between instructor and students and leaves students with the impression that the instructor is approachable. Likewise when students perceive instructors as being verbally receptive, they also perceive the instructors as being verbally responsive.

Based on the information presented, there are definite pre- and post- information seeking behaviors that take place when students approach the process of writing a paper. Previous knowledge, experiences, and information retrieval skills they bring to the process and the verbal behaviors of the faculty when interacting with the students are factors that shape the decisions students make regarding information behaviors. The OCLC study revealed that 67% of college students learned about electronic resources from their friends, 50% from their instructor, and only 33% learned about electronic resources from a librarian (OCLC Online Computer Library Center, 2005). As students progress through the writing process, interactivity with faculty and success in focusing on a topic are two critical elements in what defines the final paper. Librarians can have an impact on this process by ensuring that students are able to match search strategies to the area of focus thereby enabling students to gather pertinent information. The post-information-seeking factors are those that occur once students have gathered information, synthesized it and produced a well-documented, well-presented paper. During this post-

information-seeking time, the student should be able to formulate an argument or thesis that is derived from personal knowledge coupled with a perspective that is derived from accumulated readings on the topic (Kennedy, 1999).

2.2.2 Faculty

The second factor which has influence on the way in which students complete the writing assignment is the faculty member or instructor. A recent analysis of undergraduate citation behavior indicated a possible crisis in undergraduate scholarship for which there is no simple answer. Professors, if they wish to see an improvement in the resources cited by students, have to provide more clearly defined expectations in their assignments (Davis, 2002b). So why aren't faculty having more of an impact on the quality of student papers? As with students, faculty members have to be considered by their positions and roles in the academic community as a whole. Educators develop professionally within the institution, carry on its traditions, and define the rules by which students become "educated." For while students tend to interact with persons across the whole organization, professors tend to cluster within their disciplines and departments (Valentine, 2001a). Does this limited focus correlate to faculty information seeking? The answer lies in examining the information-seeking behaviors of faculty.

David Ellis, et al (1993) proposed a model in which the information seeking behaviors of social scientists were identified. This model contained the following elements: starting, chaining, browsing, differentiating, monitoring, extracting, verifying, and ending. Each of these steps centers on the individual's domain knowledge in a particular area. Starting, chaining, browsing, and differentiating all concentrate on the faculty's use of professional literature. Faculty know which journals are important in their particular discipline and, therefore, tend to focus their information-seeking on those journals. Monitoring and extracting occur when a faculty member

scans the discipline for new developments or studies that support personal research objectives. Lastly, verifying and ending are the final stages that ensure that a research paper ready for presentation contains the best possible information available within a discipline. So while the student tends to seek information from a broad, eclectic group of resources, faculty tend to select materials from a narrow focus within a particular field.

Likewise, faculty often do not make personal visits to the library and are more likely to access information resources electronically. The information sources that faculty members tend to rely upon most are communications with colleagues, and references in publications and bibliographic tools, such as the catalog. Faculty also consult sources such as electronic listservs or newsgroups and their collections in times of information need (Hurst, 2003).

As identified above, the perceived verbal behaviors of instructors by students have a direct impact on influencing how students seek information. When instructors engage in relational behaviors that enhance instructor-student interaction, students will use overt information seeking-strategies; when instructors engage in relational behaviors that do not enhance instructor-student interaction, students will use monitoring information-seeking strategies (Myers & Knox, 2001). While students with limited domain knowledge largely use subject searching, they adopt the information-seeking behaviors of domain experts when guided. The impetus for this guidance comes from the instructors (Drabenstott, 2003).

Finally, student use of the library is also affected by the interaction of faculty with students. In a three-year longitudinal study of students from their freshman through junior years, students who interacted with faculty (e.g., talked with the faculty member; asked for information related to a course; discussed term paper/project with faculty; asked for comments/criticism

about work) also engaged in more academic library activities during all three years of the study (Whitmire, 2001).

Faculty members use different information seeking behaviors when conducting research from those used by undergraduate students approaching a research project (Ellis, 1993). While these skills differ for two major reasons (i.e., the role of the researcher within the academic community and the level of domain knowledge), the skills of the faculty member can be transferred to the student through fundamental channels (Valentine, 2001b). Initially, a faculty member needs to be very clear and precise when assigning a research project to an undergraduate student. If there are expectations by the instructor as to the level of resources used, the length of the paper, and the number of citations, each of these variables needs to be defined in advance for students (Myers & Knox, 2001). The second major factor contributing to the success of undergraduate research papers is the level of involvement of a faculty member with the student during the process. Faculty should not assign a project without periodically required updates throughout the semester. This tactic keeps students on task and enables the faculty member to provide much needed feedback and guidance to students to help them "focus" on the topic (Kuhlthau, 1991). Lastly, the faculty member needs to be involved with the librarian and the library. Communication with the librarian prior to assignment of a writing project enables the librarian to ensure that materials are available and also to prepare to assist students in locating relevant information (Carlson & Miller, 1984b).

2.2.3 Librarians

The academic library has two major roles to play in undergraduate research. The first role is as the repository for collections of materials to support research, including books, periodicals, and access to online databases and the Internet, and the second role is as the place on campus that

students recognize they can obtain assistance on research projects. So how do libraries and librarians fulfill the dual role of working with faculty and students while maintaining a current and relevant collection? Librarians are in a unique position in the organization of being intermediaries between teaching faculty and students. They interact with a wider cross-section of the student population than individual professors and so may have a better opportunity to see patterns in the "recruit" behavior that cut across disciplines (Valentine, 2001a).

There is a "chicken and egg" phenomenon in dealing with faculty, students, and librarians. With whom should librarians work most? Faculty? Students? In supporting undergraduate research, the librarian needs to look at both faculty and students and their different roles in the academic community. As stated earlier, faculty members are more likely to remain in their positions and develop professionally within an institution. While their information-seeking behaviors for their own research projects might not support interaction with the library, the projects they assign to students do. The library, therefore, needs to take a more proactive approach when trying to get faculty to become more involved with the library. If non-library-using faculty continue to design courses and course assignments without consulting their library's collection or librarian, student may not having access to resources essential to the completion of the course or project (Stamps, 1984).

Librarians building relationships with faculty are critical in creating an environment that fosters collaboration between teaching faculty and librarians in information literacy instruction (Black, Crest, & Volland, 2001a). So what about information literacy instruction by the librarian? How can librarians use information literacy instruction to reach faculty? As faculty members attend library instruction classes with their students, they will be exposed to information literacy concepts (Carlson & Miller, 1984a). Likewise, as librarians conduct

information literacy courses directed at specific disciplines, faculty members have an opportunity to see what resources the library has in a particular discipline to support undergraduate research. Course-integrated instruction is the most effective was of delivering information literacy instruction to students (Carlson & Miller, 1984a) and can accomplish the dual purpose of educating faculty about library resources.

Because faculty members have the most potential long-term impact on the library and are the primary campus contacts for students, librarians need to focus more attention on improving the interaction and collaboration between faculty and librarian to facilitate the collection development that needs to occur to support undergraduate research assignments.

Librarians support student research in two primary ways; (1) through contact with students at a reference desk and (2) through information literacy instruction that can take place in the library or in a classroom outside the library.

As beginning researchers, undergraduates usually do not know enough about specific disciplines to choose a focused area of research and to develop a manageable research question (Quarton, 2003). It is the librarian's role to assist students in developing the focus and to avoid students concentrating on the false focus defined earlier. When a student asks, "I want everything you have on women in American politics," the first reaction of the librarian, recognizing the vast extent of the topic might be "No, you don't." But this initial reaction can be a wrong one. This situation calls for the information professional to act as a true gatekeeper and to provide the tools to assist the student in finding the appropriate path to achieving a topic focus (Kennedy, 1999).

Once a focus is identified, students also expect the librarian to help them in narrowing their topic, finding citations, evaluating those citations, and even retrieving the relevant material

(Leckie, 1996a). This problem can be somewhat alleviated through information literacy instruction.

Information literacy instruction is commonly presented to students through courses such as "the first year experience," "college study skills," or "introduction to research." These broad-based approaches to information literacy instruction, however, may not be the best suited to students who may not have a research project in which to apply these newly learned skills. Evidence from case studies reported in the literature indicates that a curriculum-integrated approach is usually very successful particularly in helping students to realize that learning how to find and utilize relevant information is an essential part of their education (Leckie, 1996a).

Integrating information literacy instruction directly into discipline-specific curriculum also supports the different information-seeking behaviors that are inherent to students within specific disciplines. Undergraduates majoring in the soft, pure, and life disciplines engaged in more information-seeking activities than undergraduates majoring in the hard, applied and non-life disciplines. The greatest differences in information-seeking behavior patterns were between undergraduates majoring in the pure sciences versus applied disciplines (Whitmire, 2002). To address these differences in information-seeking behaviors by discipline, therefore, the only effective method is through information literacy training that recognizes these behaviors and addresses them directly. This type of directed instruction can not be accomplished in broad-based information literacy training. It can be accomplished by shifting information literacy skills instruction to faculty members and using, resources that complement course content (Leckie, 1996a). This shift can only occur through collaboration with faculty members and the librarian to ensure that faculty members have a comprehensive understanding of the resources available to students. By having faculty members more actively involved in information instruction, students

would be better prepared for research assignments and faculty would be more satisfied with the results.

2.3 FRAMING RESEARCH WITHIN A COMMUNITY COLLEGE SETTING

To conduct research into the information-seeking behaviors of community college students it is necessary to determine the research conducted at the community college level. To demonstrate the limited amount of research about community colleges compared with that of four-year universities and colleges, a search was conducted on July 17, 2006, of the ISI Web of *Knowledge Social Sciences Citation Index*. The Index includes the *Science Citation Index,* the *Social Sciences Citation Index,* and the *Arts and Humanities Citation Index* covering the period 1992-2006. The searches and results are outlined in Table 2.1.

Table 2. 1 : Search Results for Community Colleges and Universities

Search term	*Hits*
"community college"	492
"community college study"	492
"community college research"	1
"university"	100,000
"university study"	100,000
"university research"	1,112

Clearly, a comparison of the number of citations available demonstrates considerably more publications and research about universities than about community colleges.

2.3.1 Community College Faculty and Research

Community colleges have open-door admissions, are usually lower in cost to attend than four-year institutions, emphasize teaching, offer a wide range of programs and services, and attract a diverse student body. As a result community colleges tend to focus on a single mission: teaching. To support that single mission, community college faculty are not under pressure to conduct research or contribute to a discourse on community college issues. Using traditional definitions of scholarship, it is commonly accepted that community college faculty do not conduct as much research as do four-year university professionals (Ford, 1999). Prager (2003) citing a 1984 study by Pellino, Blackburden, and Boberg concluded that only 22% of community college faculty engaged in any form of research and that about 60% had not been active in research since graduate school.

To contribute to the discourse within a subject area, community college faculty would need to have a solid foundation in their professional fields and keep abreast of new developments. Since teaching is the focus of most community colleges, emphasis on individual subject knowledge is less emphasized. In addition, obstacles to research also include limited access to research materials and a lack of support, encouragement, and rewards from the institution (Prager, 2003).

Even faculty at four-year schools that practice open admissions who work with non-traditional students appear to be more active scholars than faculty at community colleges (Prager, 2003). Collective bargaining units in community colleges also contribute to the lack of scholarship. A study conducted by Marshood (1995) of 19 community college presidents and

academic deans in the State of New Jersey found that 61% of the respondents indicated that faculty unions are not interested in scholarship and they have not negotiated for it in their contracts. Only 19% indicated that the unions were interested and actually negotiated for scholarship incentives in their contracts. The remaining 19% indicated that faculty unions are, in fact, interested in scholarship but have not negotiated for its provision.

Community college research literature is limited for a number of reasons. Community college faculty are not provided with incentives to conduct research, and the mission of community colleges does not support research. It is difficult, therefore, for faculty to contribute to a positive learning experience for their students when writing research assignments if they themselves are not conducting research or keeping abreast of what is happening in the field. It is the absence of scholarship and not the presence of teaching that most distinguishes community colleges from other two-year and from many four-year schools (Prager, 2003).

3.0 METHODOLOGY

3.1 EPISTEMOLOGICAL FRAMEWORK

To begin to look at the methods involved in studying information-seeking behavior, it was necessary to lay a foundation for information-seeking within an epistemological and theoretical perspective from which methodology and methods follow. There are three major epistemologies: objectivist, constructionism, and subjectivism. Objectivist epistemology holds that meaning, and, therefore, meaningful reality, exists as such apart from the operation of any consciousness. Constructionism holds that there is no objective truth waiting for discovery. Truth, or meaning, comes into existence in and from engagement with the realities of the world. There is not meaning without a mind. Meaning is not discovered but constructed. Finally, there is subjectivism in which meaning does not come from an interplay between subject and object but is imposed on the object by the subject (Crotty, 1998).

So where does information-seeking behavior fit within these three epistemologies? For Brenda Dervin and her sense-making model, information-seeking behavior has a theoretical grounding in the constructivist theories of John Dewey and Jerome Bruner (Case, 2002). Likewise, Carol Kuhlthau also posits her model of information-seeking within constructionism. The constructivist view of learning, which offers insight into what the user experiences, is a particularly valuable way to understand information-seeking from the user's perspective (Davis, 2002b). Both Dervin and Kuhlthau cite the theories of Dewey and Bruner, both of whom recognize that individuals construct knowledge and actively make sense of the world around them. Constructionism, therefore, is the epistemology that formed the basis for examining information-seeking behavior.

Having identified the epistemological framework that was the foundation for looking at information-seeking behaviors, it was imperative to review a methodology that could be used to understand further how individuals construct knowledge and assign meaning to information. Within constructivist epistemology, the methodological approach that best fits information-seeking behavior is that of symbolic interactionism. Crotty (1998, p. 72), citing Brumer, lists the three basic interactionist assumptions:

- that human beings act toward things on the basis of the meanings that these things have for them;
- that the meaning of such things is derived from, and arises out of, the social interaction that one has with one's fellows;
- that these meanings are handled in, and modified through, an interpretive process used by the person in dealing with the things he encounters.

Based on Brumer's assumptions, symbolic interactionism is the methodology that most closely explains the process that individuals progress through in finding and understanding information. The concept of deriving meaning from social interaction is important when comparing specific information-seeking behaviors of students and faculty.

Finally, specific methods for conducting research into information-seeking behaviors were reviewed. While there are numerous methods in research for gathering data, the two used in this study were the questionnaire or survey. This method has its own strengths and weaknesses which will be identified in a later section.

For the purposes of looking at methods and data collection strategies employed for information-seeking behaviors, therefore, the following figure developed by the author best represents the theoretical framework of this research design (epistemology, theoretical perspective, methodology, methods).

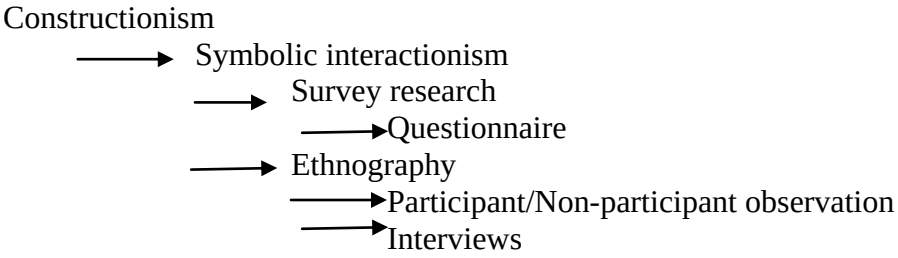


Figure 3. 1: Theoretical Framework for Information-Seeking Behavior

3.2 IDENTIFYING STUDENT INFORMATION-SEEKING BEHAVIOR

As indicated in the previous section, there are many methods through which data on the information-seeking behaviors of students can be gleaned. In 2005, OCLC Online Library Computer Center conducted an international survey of library users in the U.S., United Kingdom, Australia, Canada, India, and Singapore. Over 3,348 persons responded including 396 college students, both undergraduate and graduate, from all the geographic regions included in the study. Two questions included on the survey addressed information-seeking behaviors: 1) Please indicate if you have used any of the following sources/places where you can obtain information, event if you have only used it once (pg. A-5) , and 2) Where do you typically begin your search for information on a particular topic? (pg. A-14) (OCLC Online Computer Library Center, 2005). Both of these questions documented that students' primary method of information-seeking begins with an Internet search engine (75% and 89% respectively).

To test her information-seeking process, Kuhlthau (1991) designed a study in which she used actual library users in universities, colleges and secondary schools who had been assigned to prepare a research paper. By beginning her study with high school seniors, she was able to

continue to use this cohort as they attended college, thereby providing longitudinal data which could be used to isolate any changes in information-seeking behavior.

Initially students were given a questionnaire to determine their perceptions regarding six areas of library use: topic selection, research assignments, focus formulation, procedures for gathering information, frequency of library use, and role of mediators. In addition to using the questionnaire, the researcher identified six students for inclusion in a case study. These students were interviewed and the interviews transcribed. Based on observations of students asked to report their experiences at different stages of the information-seeking process, a model was developed.

These same students were given the same questionnaire and participated in the interview process after four years of college. Again case studies were used to gather richer, detailed information from these college students. A comparison was made between the students' information-seeking behaviors when they were in high school and their information-seeking behaviors in college. Statistically significant differences were determined through *t* tests (Kuhlthau, 1991).

For Kuhlthau, the methods of questionnaire and interview enabled her to determine the information-seeking behaviors of students and served as valid instruments for the longitudinal study of the same cohort four years later.

The basis for constructivist epistemology asserts that knowledge is constructed by individuals based on their experiences in the world. To measure this assertion as it relates to information-seeking behavior, Hofer (2004) designed a study to explore how students constructed knowledge and what their thought processes were as they conducted online searching for a simulated science experiment. By using think-aloud protocols, Hofer was able to

examine the student's personal epistemology and how that belief influenced the construction of knowledge. More specifically, high school and college students were brought into the lab individually, given a simulated assignment for a science course, and asked to conduct a search while thinking out loud; the process was videotaped. At the end of the 20-minute sessions, a retrospective interview was conducted so that students could explain their thinking processes during the activity (Hofer, 2004).

Both the videotape and interviews were transcribed and the lines of text coded. As a result of the coding, patterns regarding student's epistemology were ascertained. In this research study, coding provided the lenses through which data was viewed in a relational structure (Krathwohl, 1998).

Another model that uses similar collection methods for obtaining data was designed by Foster (2003) and focused on student's information-seeking behavior as it relates to serendipity in the search process. Based on naturalistic inquiry, this process entails an inductive data-exploratory, as opposed to a deductive hypothesis-testing approach. In the case of this study, a sampling of students was selected from a pool of 100 students in various disciplines. A pilot study was conducted to determine if the sampling methods functioned appropriately. Open-ended interviews were employed in the study and interviews were transcribed and coded immediately. In this example, the coded text was entered into qualitative data analysis software, which enabled the managing of coding and linking concepts and allowed for searching and retrieval of quotations (Foster, 2003).

When studying the information-seeking behaviors of college students, the three examples presented used the qualitative methods of surveying, interviewing, and subsequent qualitative analysis achieved through coding to determine how students go about seeking and ultimately

using information. It is clear that while numerous methods exist for data gathering, the method of questionnaire/survey were identified by this researcher as effective in identifying the thought processes that students use when filling an information need and seeking information.

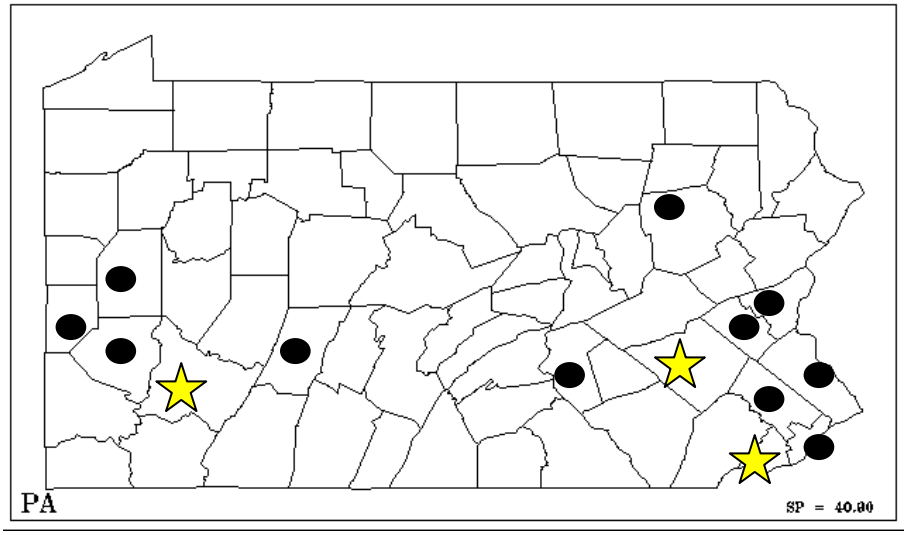
3.3 SAMPLING METHOD

When choosing to conduct a survey, there are four factors that need to be considered to make the survey valid; these are sampling error, coverage error, measurement error, and non-response error. Sampling error is the result of attempting to survey only some, and not all, of the units in the survey population. Coverage error occurs when the list from which the sample is drawn does not include all elements of the population, thus making it impossible to give all elements of the population an equal or known chance of being included in the survey sample. Measurement error occurs when a respondent's answer to a survey question is inaccurate, imprecise, or cannot be compared in any useful way to the other respondents' answers. Non-response error occurs when a significant number of people in the survey sample do not respond to the questionnaire and have different characteristics from those who do respond, when those characteristics are important to the study (Dillman, 2000).

Based on previous information-seeking behavior studies and models, for this study two actions had to occur. First, colleges, courses, and sections were identified for participation in the study. This was accomplished by using random selection and sampling size calculations to determine the number of students needed to have survey results of +/- 10%. Second, questions on each survey had to address the student's knowledge and information-seeking behaviors and the perceptions of the faculty member and the librarian. Questions on the student knowledge survey focused on how students determine an information need and prioritize in some way how they

approach accessing information and resources selected. Most important in this phase was to ensure that the survey was administered to three populations: students, faculty, and librarians. The purpose of this was to develop a query that every potential respondent interpreted in the same way, was able to respond to accurately, and was willing to answer (Dillman, 2000).

The population identified for this study was the population of community college students in Pennsylvania involved with their first writing assignment and who may or may not have had exposure to an information literacy instruction class. Pennsylvania community colleges were chosen because Pennsylvania does *not* have a statewide community college system. States in which community college systems exist have established outcomes for which student learning must be measured. The independent nature of Pennsylvania community colleges provided the clearest insight into the student information-seeking process because a standardized set of criteria has not been adopted and agreed upon statewide. In 2003 there were more than 28,000 first time freshman enrolled in Pennsylvania's 14 community college (Pennsylvania Department of Education, 2004).



Note: Map taken from http://baby.indstate.edu/gga/gga_cart/basepa.gif. November 5, 2006. ★ – indicates selected community colleges.

Figure 3. 2: Map of Pennsylvania Indicating Location of Community Colleges

Selection of the community colleges to participate was based on enrollment for the fall 2005 semester as gleaned from the Integrated Postsecondary Education Data Survey (IPEDS) and illustrated in Table 3.1.

Table 3. 1: Pennsylvania community college fall enrollment for 2005

No. for randomizing	UnitID	Institution	Full-time enrollment: Fall 2005	Part-time enrollment: Fall 2005	Total Enrollment	Selected using a randomizer program
1	210605	Community College of Allegheny County	7580	10824	18404	
2	215239	Community College of Philadelphia	5188	11914	17102	
3	211927	Delaware County Community College	4430	6197	10627	X
1	211307	Bucks County Community College	3990	5606	9596	
2	212878	Harrisburg Area Community College-Harrisburg	3980	5525	9505	
3	214111	Montgomery County Community College	3884	4976	8860	
4	214379	Northampton County Area Community College	3089	3930	7019	
5	213525	Lehigh Carbon Community College	2588	3976	6564	
6	213659	Luzerne County Community College	3156	2988	6144	
7	216825	Westmoreland County Community College	2671	3470	6141	X
1	215585	Reading Area Community College	1719	2424	4143	X
2	211343	Butler County Community College	1987	1822	3809	
3	211079	Community College of Beaver County	1257	1293	2550	
	414911	Pennsylvania Highlands Community College	629	695	1324	

Note: Data from (National Center for Education Statistics, 2006)

Colleges were divided by size based on total fall enrollment. Enrollment divisions used were 0-5000, 5000-10,000, and >10,000. A number was assigned to each college within each group. A randomizer program (Social Psychology Network, 2006) was used to select which community college in each group was selected for participation in this study. Colleges selected were Delaware County Community College, Westmoreland County Community College, and

Reading Area Community College. Pennsylvania Highlands Community College was not included in the selection process to eliminate bias because it is where the researcher is employed.

Once selected, each college's spring 2007 course schedule and catalog was used to determine which courses would be selected for receipt of the survey. The classes selected met the following criteria: 1) considered part of a general education core or offered as a sequence to a general education course, 2) contained a writing assignment that required the use of information resources as determined by the course description provided in the catalog or in the syllabus when available, and 3) uses a first-year division course, not considered developmental or remedial in nature; usually a 100-level course.

Table 3.2 identifies each college, the course identified, the number of sessions of each course offered in the spring 2007 semester, and the number of seats in each course. If the number of seats in each course was not available, a minimum of 15 seats was used for the purposes of determining the number of students enrolled in each.

Table 3. 2: Selected community colleges, courses, number of sections, and seating capacity

College	Course	Sections	Seating	Total students
Delaware	Eng 112-Eng. Comp II	27	19	513
Reading Area	Com. 121-English Comp.	18	24	432
Westmoreland	English 164-Adv. Comp.	15	15	225

Table 3.3 shows a sampling size that has a confidence level of 95% and a confidence interval of 10% determined by using on online sampling calculator (MaCorr Research Solutions Online, 2006).

Table 3. 3: Sampling size for each selected community college

College	Seating capacity	Total students	Sampling size	No. of classes to be surveyed
Delaware	19	513	81	4
Reading Area	24	432	79	3
Westmoreland	15	225	68	5

In addition to administering a pre- and post- knowledge survey to students (see Appendix A), the faculty member needed to participate in a similar pre- and post-faculty survey (see Appendix B) that identified faculty expectations. The librarian responsible for providing information instruction to this class also participated in a pre- and post-survey that covered student interactions either through direct instruction or at the Reference Desk (Appendix C). Student surveys used identifiers so that pre and post comparison of student knowledge could be determined. The identifiers used were the first two initials of the student's last name and the two-digit month in which they were born. Faculty members and librarians will not have access to the returned surveys.

The result of this selection process was 330 student surveys, 24 faculty surveys and 20 librarian surveys.

4.0 FINDINGS

4.1 INTRODUCTION

This chapter presents the results obtained from conducting a pre- and post- survey of students, faculty and librarians at the three Pennsylvania community colleges: Delaware County Community College, Reading Area Community College and Westmoreland County Community College. Prior to administering the survey at these colleges, the instrument was piloted at the Pennsylvania Highlands Community College, and this resulted in changes to the final instrument. Challenges in administering the survey are discussed and possible explanations provided.

4.2 THE PILOT STUDY

In the spring 2007 semester the survey instruments for the study were tested for student understandability in an English Composition class at the Pennsylvania Highlands Community College. Pennsylvania Highlands Community College is not included in the formal study for the reason of bias as it is the college at which the researcher is employed. The pilot study was conducted with students in English Composition II/Studies in Literature, which included a writing assignment that required the use of library resources. At the beginning of the class, 14 students completed the pre-survey. The demographic data for these students indicates that nine students were female and five were male. Only one student was part-time, the remaining 13 students were full-time. One student was pursuing an Associate of Applied Science degree, one was undeclared (not matriculated into a degree program) and the remaining students (n=12) indicated they were transfer students. Transfer students are those that are taking only enough credits to transfer to a four-year institution without the intent of earning an Associate Degree. The age distribution of the class included 10 students who were in the traditional age range (18-

21) and four who were in the non-traditional age range (>22.) By the end of the semester two students had withdrawn from the class leaving 12 students to complete the post-survey. The faculty member completed both the pre- and post-survey. The librarian survey was not administered because it would not provide any unbiased results.

4.2.1 Changes to the Pilot Student Pre- and Post-survey

Once the pre- and post-survey was administered to the students and the results analyzed several changes needed to be made to the instrument in order to obtain the results needed to make direct comparisons of information-seeking behaviors before and after using information resources to complete the writing assignment. Changes were also made based on conversations held with faculty from the four community colleges identified to participate in the study especially in regard to information literacy instruction. The following list identifies changes that were made to the initial instruments used in the pilot study (Appendix A) which then became the final surveys (Appendix B) used in the study.

Student Pre-Survey

1. Added a question regarding when information literacy instruction was administered.
2. Added a question on who provided that instruction.
3. Changed Q8 from “Choose only one” to “Choose all that apply”
4. Added a choice under Q1 “not discussed yet”

Student Post-Survey

1. Changed Q2 to be a ranking similar to question Q3 in the pre-survey.
2. Added range definitions to questions 1-5. Shorten the number of options available from five to four.

3. Made sure that pre-survey question Q8 was similar to post-survey question Q5.

4.2.2 Changes to the Pilot Faculty Pre- and Post-survey

After reviewing the information gleaned from the faculty pre- and post-surveys several minor changes were made to the faculty surveys to provide additional choices and to better enable a comparison of faculty responses to the information provided by students in the their surveys. The following list outlines all of the changes made to the pre- and post-surveys.

Faculty Pre-Survey

1. Changed Q2 choice language from "web search engine" to "Internet searches"
2. Added "that requires the use of information sources" to Q3
3. Added language in questions 1 and 2 to reference information in a syllabus.
4. Changed the language in Q4 to ask what resources the instructor provided to students. Also added a choice that information literacy instruction was provided by the instructor. Also added a choice on librarians providing instruction on style formats.
5. On Q6 more clearly defined lengths of time (one of the selected colleges operates on a term instead of a semester.)

Faculty Post-Survey

1. Added choice descriptors to Q1, Q4, Q5, Q6, Q7
2. Made sure that pre-survey Q4 was similar to post-survey Q2

4.2.3 Changes to the Pilot Librarian Pre- and Post-survey

The changes that were made to the librarian pre- and post-surveys were arrived at by talking with faculty members at the four colleges participating in the survey. Faculty members related the

variety of ways in which information literacy is handled at their respective institutions so the librarian's surveys were re-drafted from the point of view of general information literacy instruction as it relates to English classes and faculty interaction. Librarians may or may not be involved with the English classes that will be surveyed.

4.3 PARTICIPATING STUDY COLLEGES

As described in Section 3.3 the community colleges selected were into three divisions based on student population. Each of these divisions was then randomly sorted resulting in the community college selected for participation in the study. Each of these community colleges is unique not only because of its size but because of its geographic location and community it serves. An understanding of Pennsylvania's Community Colleges is also needed to put these colleges into context. First, there is no system of community colleges in Pennsylvania. All 14 community colleges act as independent schools with their own governing board of trustees. Each college sets its own tuition and fees rate, can determine to whom it extends services, what programs of study it offers, and is capable of providing services beyond its county borders through partnerships and the creation of branch campuses. Pennsylvania Community College legislation is broad in its requirements of a community college and only requires support from a governmental agency or school district for a community college to exist. Community colleges receive a portion of their revenue from the Pennsylvania Department of Education; however, most revenue is derived from tuition and local governmental support.

4.3.1 Delaware County Community College

Delaware County Community College is located southwest of the City of Philadelphia in Delaware County. The population of Delaware County in 2000 was 550,864, with 80.32%

White, 14.52% African-American, 3.29% Asian, and 1.52% Hispanic (United States Census Bureau, 2000). Delaware County is the fifth most populous county in Pennsylvania behind Philadelphia, Allegheny, Montgomery, and Bucks Counties. Delware County is diverse socio-economically having both depressed areas as well as affluent suburban neighborhoods that include the wealthy Main Line. Delaware County Community College has three campuses in Delaware County and two campuses in adjacent Chester County. Delaware County Community College served 10,627 full- and part-time students in 2005 (National Center for Education Statistics, 2006). In addition to the community college, there are 13 other colleges and universities in Delaware County including: Swarthmore University, Villanova University, Widener University, Cheyney University-a historically black university, and a branch campus of the Pennsylvania State University-Penn State Brandywine.

4.3.2 Westmoreland County Community College

Westmoreland County Community College is located southeast of the City of Pittsburgh in Westmoreland County. In 2000, Westmoreland County had a population of 369,993 with 96.58% White and 2.01% African-American (United States Census Bureau, 2000). All other ethnicities were each less that one percent of the remaining total population. In 2005, Westmoreland County Community College served 6,141 full- and part-time students. In addition to the main campus, Westmoreland County Community College serves Westmoreland, Greene, and Indiana counties through seven education centers. There are only four other colleges or universities in Westmoreland County: St. Vincent College, Seton Hill University, the University of Pittsburgh at Greensburg, and a campus of the Pennsylvania State University-Penn State New Kensington.

4.3.3 Reading Area Community College

Reading Area Community College is located in Berks County which is in southeastern Pennsylvania. Berks County had a population in 2000 of 373,638 of which 82.5% were White, 11.8% Hispanic, 4.6% African-American, and 1.2% Asian (United States Census Bureau, 2000). In 2005, Reading Area Community College served 4,143 full- and part-time students. Unlike Delaware County Community College and Westmoreland County Community College, Reading Area Community College serves only the residents of Berks County and does not extend into any adjacent counties. In addition to Reading Area Community College, there are four other colleges and universities in Berks County which include: Kutztown University of Pennsylvania, Albright College, Alvernia College, and a campus of the Pennsylvania State University-Penn State Berks.

4.4 STUDY POPULATION

When the researcher contacted each of the community colleges identified to participate in the study she found it difficult to find faculty who were willing to participate in the study. A lengthy process of obtaining permission to conduct the surveys on the community college campuses and several weeks of communication with faculty resulted in a much smaller than anticipated number of faculty at each campus willing to participate by allowing the surveys to be administered in their classes. Faculty who were contacted expressed a concern that the survey would take up too much class time and some were concerned in how the findings would be used. Some faculty were teaching an English course that did not have a writing assignment component. Most faculty simply did not respond to formal letters, emails, or phone messages. Finally, the researcher contacted each library director and had them make personal contacts with the English faculty to

solicit their participation. As a result of this personal contact by the librarian, the English faculty identified were probably library users. In most cases it was only after this personal colleague-to-colleague contact did most faculty agree to participate. The pre-surveys were administered by the researcher in the first week of October with the post-surveys were administered the first week of December. Even though most colleges began their semesters in late August and early September, the writing assignment was not presented to students until late September.

Table 4.1 outlines the projected number of classes and students that were initially proposed and the resulting number of surveys that were successfully administered by the researcher.

Table 4. 1: Comparison Response Rates for Study Participants

Colleges	**Projected Responses**			**Actual Responses**					
	Pre- and Post-survey			Pre-survey Responses			Post-survey Responses		
	S	F	L	S	F	L	S	F	L
DCCC	81	4	1	34	3	4	29	3	4
RACC	79	3	1	59	4	4	49	4	3
WCCC	68	12	1	84	5	3	75	5	2
TOTALS	228	12	3	177	12	11	153	12	9

Note. S=Student, F=Faculty, L=Librarian, DCCC=Delaware County Community College, RACC=Reading Area Community College, WCCC=Westmoreland County Community College

For the pre-surveys, the number completed represents 77% of the total projected and for the post-surveys 66% of the totals projected. The decline in the number of surveys completed

between the pre- and post surveys was due to students withdrawing from classes or being absent on the day the post-survey was conducted.

Of the students who completed the survey, 60% of the students were female and 40% were male. Table 4.2 reflects the breakdown of the population by age and gender of all the survey respondents. Tables 4.3-4.5 reflect the breakdown of the survey respondents by individual community college. By providing an individual breakdown by college, a clearer picture of the demographic composition of the survey population is obtained.

Table 4. 2: Summary of Age and Gender Distribution of Survey Respondents

Age	Total	Percentage	Female	Percentage	Male	Percentage
<18	7	4%	4	57%	3	43%
18-19	96	54%	57	59%	39	41%
20-21	29	16%	15	51%	14	48%
22-24	13	7%	5	38%	8	62%
25-29	11	6%	6	55%	5	45%
30-34	5	3%	4	80%	1	20%
35-39	10	6%	10	100%	0	0%
40-49	4	2%	2	50%	2	50%
50-64	3	2%	2	67%	1	33%

Table 4. 3: Age and Gender Distribution of Survey Respondents by College-DCCC

Age	Total	%	F	%	Male	%
<18	0	0%	0	0%	0	0%
18-19	12	36%	5	42%	7	58%
20-21	16	48%	9	56%	7	44%
22-24	2	6%	0	0%	2	100%
25-29	1	3%	0	0%	1	100%
30-34	1	3%	1	100%	0	0%
35-39	1	3%	1	100%	0	0%
40-49	0	0%	0	0%	0	0%
50-64	0	0%	0	0%	0	0%

Table 4. 4 : Age and Gender Distribution of Survey Respondents by College-WCCC

Age	Total	%	F	%	Male	%
<18	5	6%	2	40%	3	60%
18-19	45	54%	26	57%	19	43%
20-21	8	10%	4	50%	4	50%
22-24	7	8%	3	43%	4	57%
25-29	6	7%	2	33%	4	67%
30-34	1	1%	1	100%	0	0%
35-39	8	10%	1	100%	0	0%
40-49	2	2%	1	50%	1	50%
50-64	2	2%	2	100%	0	0%

Table 4. 5: Age and Gender Distribution of Survey Respondents by College-RACC

Age	Total	%	F	%	Male	%
<18	2	3%	2	100%	0	0%
18-19	38	64%	38	100%	0	0%
20-21	5	8%	2	40%	3	60%
22-24	4	7%	2	50%	2	50%
25-29	4	7%	4	100%	0	0%
30-34	3	5%	2	67%	1	33%
35-39	1	2%	1	100%	0	0%
40-49	1	2%	0	0%	1	100%
50-64	1	2%	0	0%	1	100%

The age distribution is typical of the traditional profile of baccalaureate undergraduates with 77% of the students being 18-24 year olds (Frerking, 2007). Eighty-six percent of the students were registered as full-time while 14% were part-time. Of those who indicated a reason for attending a community college, 52% (n=93) identified transfer to another institution, 28% (n=50) are seeking an Associate of Applied Science degree, 6% an Associate of Arts degree (n=6), 3% a certificate (n=1), 1% a diploma (n=1), and 9% (n=16) are undeclared. Two students did not indicate a reason for attendance.

4.5 STUDY LIMITATIONS

The major limitation to the results arrived at in this study stems from the relative small sample size. There are 14 community colleges in Pennsylvania, since each one operates as an independent school outside an organized state-system of community colleges. More colleges should be studied to provide a more comprehensive understanding of the information literacy

instruction being provided and how that instruction affects how students use information to complete writing assignments.

Students completing the surveys also struggled to identify themselves correctly on the surveys, which resulted in a smaller number of surveys available for one-to-one comparison. Students did not understand the verbal instructions or the sample provided on the survey. The Institutional Review Board (IRB) at the University of Pittsburgh suggested the manner in which students code themselves. This proved to be problematic on the pilot surveys, and the revised, simplified coding system was still not effective on the pre- and post-surveys.

Questions on the surveys that required "ranking" or "rating" were often answered incorrectly. Students needed a more thorough explanation or example of what was expected in a question for which the results needed to be ranked or rated. Students also did not follow directions when instructed to "choose one" or "choose all that apply." More time should have been spent by the researcher in reviewing each question on the survey to explain how to provide an answer correctly.

4.6 STUDY RESULTS

The data gathered from all the surveys was analyzed in the following way: first, students had difficulty understanding the difference between rating and ranking. This was a problem that was not apparent in the pilot study. In questions that required ranking students either skipped the question or only ranked the top three items since that was the example that was provided. In cases where the ranking was not completed correctly the response was excluded. Second, in questions where students were instructed to "choose one" and several choices were selected; the responses were excluded. These guidelines were also applied to the recording of responses from the faculty and librarians as well.

4.6.1 Student Pre-survey results

Question one on the student's pre-survey focused on the manner in which the writing assignment was communicated by the instructor. Table 4.6 shows the manner in which students reported they received the assignment from the faculty member.

Table 4. 6: Manner in which student's perceived assignment was communicated

Choices	No. of Responses	Percentage
Outlined in syllabus and reviewed.	32	18%
Not in the syllabus, distributed separately including deadlines	22	12%
Instructor talked about the assignment, guidelines and deadlines. Nothing in print.	123	69%
Writing assignment was not discussed.	1	.5%

Note. One student did not respond.

The majority of students (n=123) indicated that the faculty member talked about the writing assignment, the guidelines for its completion, and the deadlines but provided no written description of the assignment and deadlines. Eighty-four percent of faculty (n=10), however, reported that the assignment was outlined in the syllabus and reviewed orally in class.

In Table 4.7 students identify the sources or process they used to select the topic for the assignment.

Table 4. 7: Method used for selection of a topic for the writing assignment

Choices (students were to choose only one)	No. of Responses	Percentage
Used in a previous class	4	2%
Interested in or some knowledge	132	74%
Based on materials in the library	3	1%
Topic heard on TV or in the news	3	1%
Topic was assigned	35	20%

Note. Two students did not respond.

Students indicated that they were allowed to select the topic on which they could write, and for 74% the topic selected was one in which they had some interest or previous knowledge. The 20% of students who indicated that the topic was assigned were in a course in which the entire class had to write a paper on a specific literary work.

Question three asked students to rank from 1-9 the order in which they would use a list of information resources. There were 14 students whose responses could not be included because they either did not answer the question or answered it in an incorrect manner and, therefore, the response was discarded.

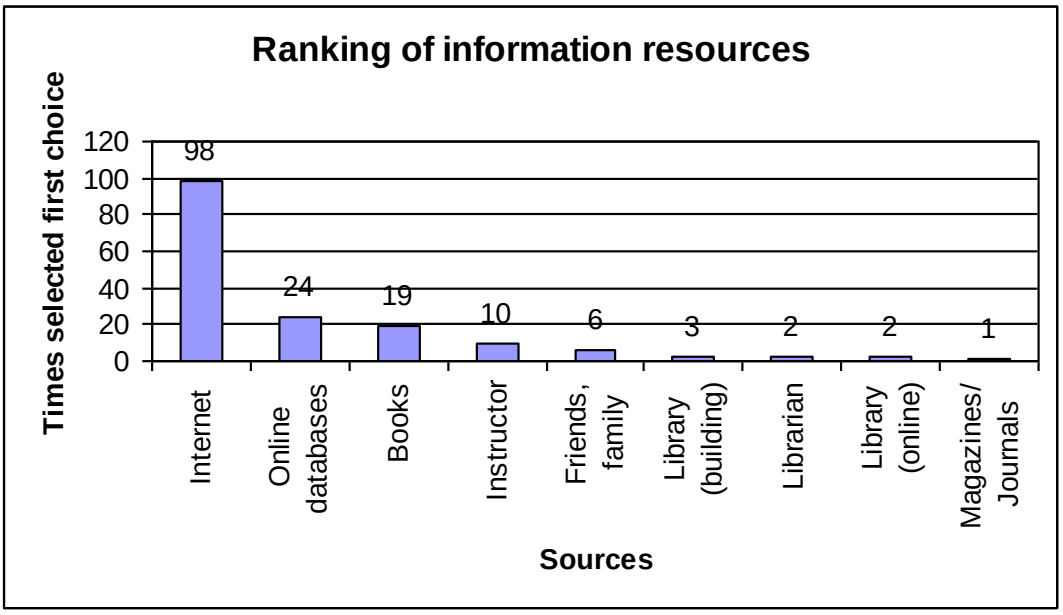


Figure 4. 1: Ranking of all information sources

Students (64%) indicated they would choose the Internet as the first information resource they would use to seek information for the writing assignment. Online databases and books and were the next two choices comprising 28% of the responses. Friends, family and the instructor garnered 10% of the responses and at the lowest ranks were the library, both physical and online at 3%, the librarian (1%), and lastly, print magazines and journals (.06%).

Question four asked students from whom they seek help when they have questions regarding resources to be used in the writing assignment. Instructors were the overwhelming choice of students (n=128). Students then indicated they typically didn't have a problem when using resources (n=27) or they asked friends, family, or classmates for help (n=25). Students sought the help of librarians the least amount of times (n=19).

Question five dealt with student confidence levels when using a style manual (e.g. ALA, MLA, Chicago, etc.) to complete a writing assignment. Forty percent (n=72) of the students felt somewhat confident when using a specific style manual for their papers, 33% (n=58) felt confident, 20% (n=35) indicated they were not confident, and only 6% (n=12) were very confident. Two students did not answer the question.

In assignments where the students were not allowed to choose the topic (Q6) on which they would be writing, students indicated they would use the Internet (n=121) to find information on the subject, the instructor was a close second (n=102). Online databases (n=55), the librarian (n=49) and friends, family, and classmates (n=43) were also indicated.

When students were allowed to choose the topic (Q7) for their writing assignment 72% (n=148) indicated they would use the Internet to locate information. Online databases (n=56) and the instructor (n=58) were secondary, and finally, the librarian was indicated the least amount of times (n=37).

Question eight asked students indicate any situations that cause them frustration when completing a writing assignment.

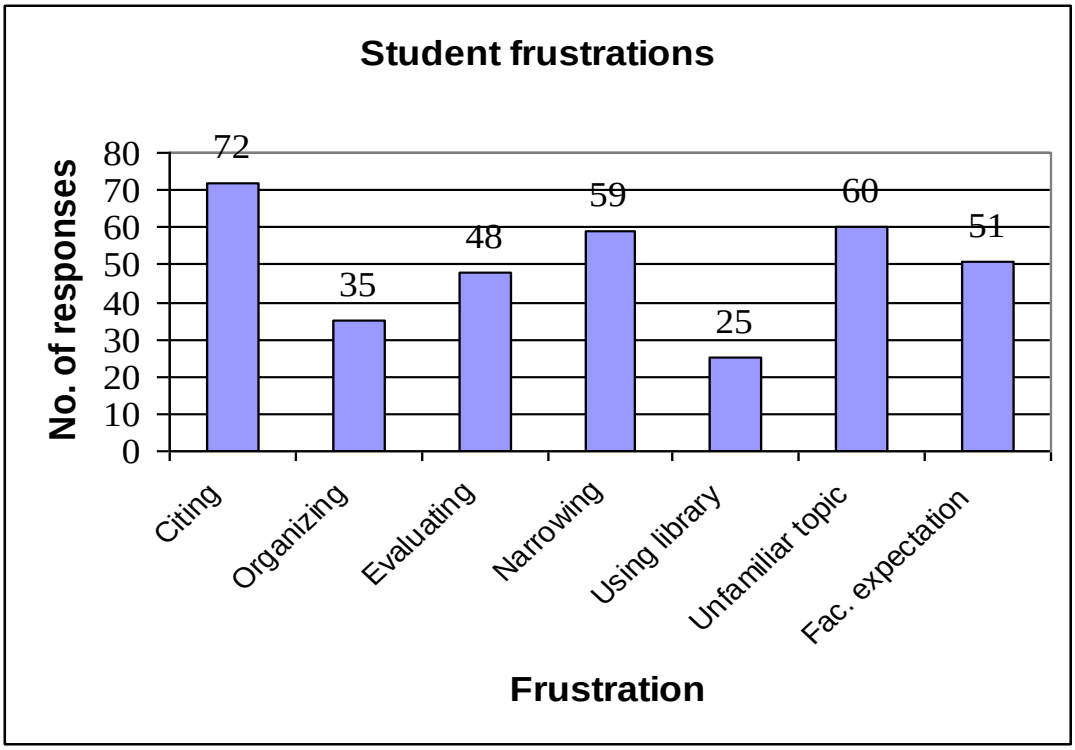


Figure 4. 2: Student frustrations when completing a writing assignment

Students indicated that citing information (n=72) caused the most frustration followed closely by writing about a topic with which they were unfamiliar (n=60) and then narrowing a subject (n=59). It is interesting that students indicated that citing information caused the most frustration because in question five, 73% indicated they were either confident or somewhat confident in using style manuals.

The last two questions on the pre-survey focused on information literacy instruction, specifically, when it was provided and by whom. Question nine asked students to indicate when information literacy instruction was provided to them, to which they reported it occurred in a previous class (n=108) and not the class in which they were currently enrolled. Twenty-one

students indicated that instruction was provided in the class in which they had the writing assignment and 49 reported they had never received information literacy instruction. For those who did receive instruction (Q10), whether in a previous class or in the current class, 82 indicated that a librarian provided the instruction, 44 indicated the instructor provided the instruction, and 16 reported that both the librarian and instructor provided instruction in the use of information resources.

4.6.2 Faculty Pre-survey results

The faculty pre-survey was administered at the same time students were taking their pre-survey. It is important to note the low number of both faculty and librarians who were available to participate in the survey, therefore, any conclusions drawn from these results are limited. The first question on the faculty survey explored the faculty's expectation of what preexisting knowledge students possessed before beginning the writing assignment. Table 4.8 shows that all faculty believe students should have a basic knowledge about evaluating print and online resources including the Internet. Other important skills included basic knowledge of locating library books, using online databases, and the ability to correctly cite sources.

Table 4. 8: Importance of student's skill set for completing assignment

Variable	1- Not important	2- Somewhat important	3- Important	4- Very important
Basic knowledge of library books and online databases	0	0	1 (8%)	11 (92%)
Basic knowledge of evaluating print, online resources and Internet	0	0	0	12 (100%)
Prior subject knowledge	0	4 (33%)	6 (50%)	2 (17%)
Advanced knowledge about information resources and search strategies	3 (25%)	3(25%)	4 (33%)	2 (17%)
Ability to accurately cite references	0	0	1 (8%)	11 (92%)

Question two asked faculty to identify whether they placed any limits or excluded any information sources that students could use when preparing the assignment. For books, two faculty excluded them while two faculty limited their use. Four faculty limited online databases. Five faculty limited magazines and journals. Eight limited the Internet while one instructor excluded it. Six faculty limited other information sources indicating items such as journals no less than five years old and no encyclopedias.

Question three referred to how assignments are communicated to students. Ten faculty indicated that the assignment appears in the syllabus and is reviewed in class. One faculty member indicated the assignment is not in the syllabus but is given to students on a separate handout. One instructor does only an oral review and provides nothing in writing.

Question four dealt with the additional support that instructors can provide for students to assist with the writing assignment and the use of information resources. Table 4.9 shows whether the instructor or faculty member provided the overview of library resources for the students.

Table 4. 9: Support for students with writing assignment and use of information resources

Variable	Number of responses
Instructor provided the overview of library resources	9
Librarian reviewed how to identify and evaluate information resources	7
Librarian provided information literacy instruction	5
Librarian did a session on style formats (MLA, APA, Chicago)	2
Library instruction provided in another class, students should have prior knowledge	2
No library instruction was needed	0

Most instructors (75%) provided their students with an overview of library resources; only 42% indicated that they had a librarian provide the instruction. Only two instructors indicated that a librarian provided any instruction on the use of a style manual and two faculty assumed that library instruction was provided in another class.

Students were able to choose their own topic 75% of the time (n=9), while the remaining 25% (n=3) had a topic assigned by their instructor. Faculty also reported that students had a variety of lengths of time in which to complete the assignment. Two faculty reported students had until at least midterm, two reported students had the entire semester and eight reported various other periods of time to complete the assignment.

As a means of tracking the progress of students through the writing process, faculty required the following of students as evidenced in Table 4.10.

Table 4. 10: Student required submissions during the writing process

Requirement	Number of responses
Drafts	11
Bibliography	10
Outline of the paper	9
Annotated bibliography	7

To determine if faculty were aware of instruction options offered by the librarians for the benefit of students, question eight listed a choice of possible workshops and additional instruction that may be available. Table 4.11 shows faculty are aware of additional instruction available at their college's for which students can take advantage.

Table 4.11: Faculty knowledge regarding instruction opportunities available at their college for students.

Does your college provide workshops/instruction or services for students in any of the following? (check all that apply)	Response
Use of information resources	11
Evaluating print and online resources, including the Internet	10
Writing center	7
Ethical use of materials, including copyright and plagiarism	5
Not sure	3
Use of particular styles (i.e. APA, MLA, or Chicago)	2

The remaining four questions dealt with faculty interaction with the physical library and the collection and how long faculty have been teaching at the college at which they are now and how long they have been teaching the course in which they were surveyed.

When asked whether or not the faculty suggested material purchase by the library for inclusion in the collection, 83% (n=10) responded that they did suggest materials for the library's collection, while 17% (n=2) did not. Likewise, 92% (n=11) indicated they periodically visit the library to review the materials in their discipline that are available to students, 8% (n=1) did not.

The average number of years that faculty have been teaching at their respective colleges was 16.75 years, with one faculty member being at her college only 1 year while one faculty member had been at her college for 29 years. The exact same numbers were reported for the number of years teaching this particular course.

4.6.3 Librarian Pre-survey results

Since information literacy instruction did not occur when the surveyor was gathering data from students and faculty, librarian surveys were distributed at each college library for all teaching librarians for completion.

Question one on the librarian's pre-survey attempted to determine any interactivity between faculty and librarian prior to information literacy instruction. The question used a 1-4 rating scale where 1=never, 2=occasionally, 3=frequently, 4=-all the time.

Table 4. 12: Frequency of interaction between faculty and librarians before information literacy instruction.

Interaction	1- never	2- occasionally	3- frequently	4- all the time
I worked with the faculty member prior to library instruction to determine the content of instruction		3	5	3
The faculty member has checked with the library to ensure that sufficient materials are available to students in this discipline.	1	7	2	1
I received a copy of the assignment		3	7	1
I have provided instruction for this faculty member in the past.		1	10	
A survey was given to the students in the course to determine their information-seeking behaviors	6	5		

When asked how long information literacy instruction sessions usually last, 82% (n=9) reported they have 1-hour to conduct the training, while 18% (n=2) indicated they have 1.5 hours. When conducting the sessions, 100% (n=11) reported that faculty remain in the classroom during the instruction. In question four, 55% (n=6) reported that their college does not have a formal information literacy program, while 45% (n=5) indicated that there was a formal program in place. Question five asked which concepts are typically covered in the library instruction.

Table 4. 13: Concepts covered in information literacy instruction

Concept	No. of responses
Library's online catalog	11
Electronic online databases	11
Internet searching	10
Internet webpage evaluation	9
Library print journals	7
Citations and style formats	7
Advanced searching strategies	5
How to organize a paper	1

Based on the results, librarians are focusing on three primary areas when providing instruction, namely, use of the online catalog, electronic databases, and Internet searching. More advanced skills such as webpage evaluation, searching strategies, and citing materials gets less attention.

When asked in question six which concepts librarians believed students would benefit from additional instruction, most responses centered on searching strategies and evaluation of results.

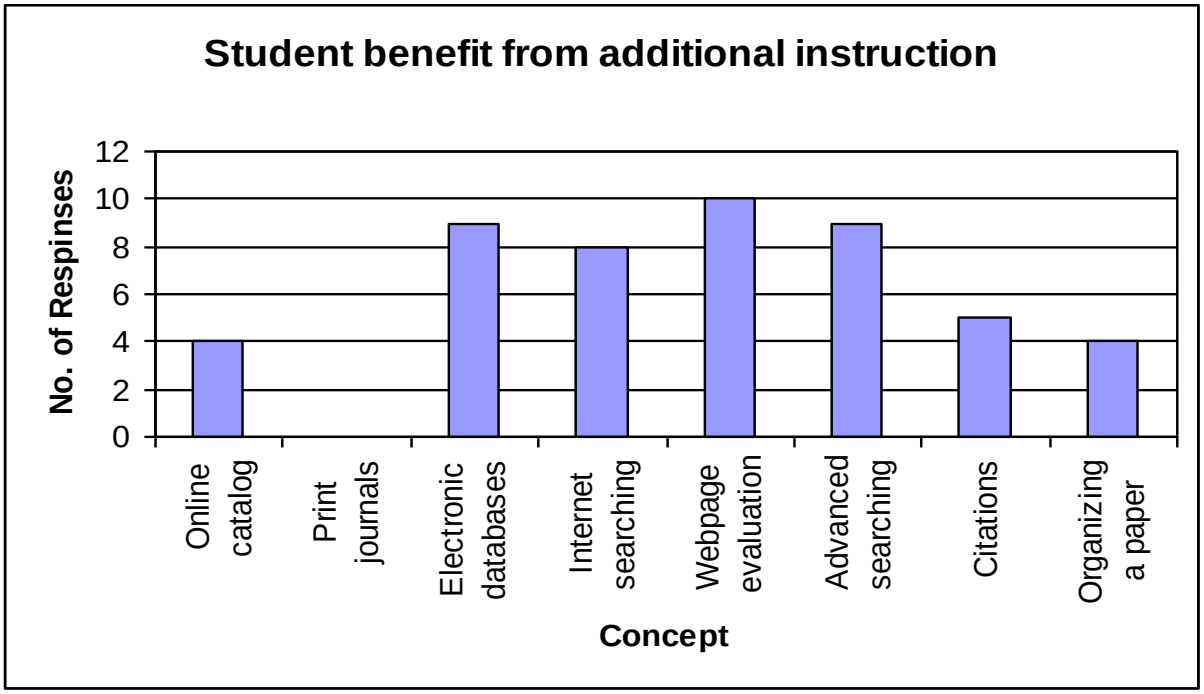


Figure 4. 3: Concepts in which students could use additional instruction

Question seven identified three common courses in which composition is typically taught at the community college level and sought to determine how information literacy instruction is provided in those classes. For Developmental English, 82% (n=9) reported that instruction occurs upon request of the faculty member, while 18% (n=2) reported library instruction is part of the syllabus. For English Composition I or similar course, 64% (n=7) reported instruction is upon request, while 36% (n=4) reported it is part of the syllabus. For English Composition II or similar course, 82% (n=9) reported instruction is upon request of the faculty member, while 18% (n=2) reported it is in the course syllabus.

When librarians were asked if faculty regularly submit suggestions for materials to be included in the collection, 55% (n=6) reported that faculty typically don't make suggestions, 36% (n=4) reported that faculty do make suggestions and 9% (n=1) did not respond.

On average librarians have been at each of their colleges for 11.4 years with librarians being in their position as short a time as 1.5 years up to 23 years. When asked how long they have been teaching library instruction whether at this college or at another college, the average years for teaching library instruction was 13 years, with a minimum of three years and a maximum of 23 years. When asked if the librarians held a MLS or MLIS from an ALA-accredited program, 82% (n=9) reported that they did, while 18% (n=2) did not. All librarians at all the colleges did have faculty status or rank.

4.6.4 Student Post-survey results

Post-surveys were administered to all students, faculty, and librarians after completion of the writing assignment that required the use of information resources. Any responses on the surveys that were not completed correctly were disregarded.

The first question on the student post-survey asked how the topic of the paper was chosen. Sixty-four percent of students (n=98) indicated the topic was chosen based on previous knowledge or interest in the topic. Twenty percent (n=30) had an assigned topic. This number represents one class in which all students had to write about the same topic. Eleven percent (n=16) chose a topic based on something on TV or in the news, while 3% had already used the topic in a previous class. One percent (n=2) chose their topic based on materials available in the library and finally, 1% (n=2) did not answer the question. When students selected the topic based on previous knowledge or interest in the topic it is impossible to determine the level of prior

knowledge the student has of the subject and how that prior knowledge effected information seeking behavior.

The second question on the post-survey asked students to rank information sources based on those they used most to least.

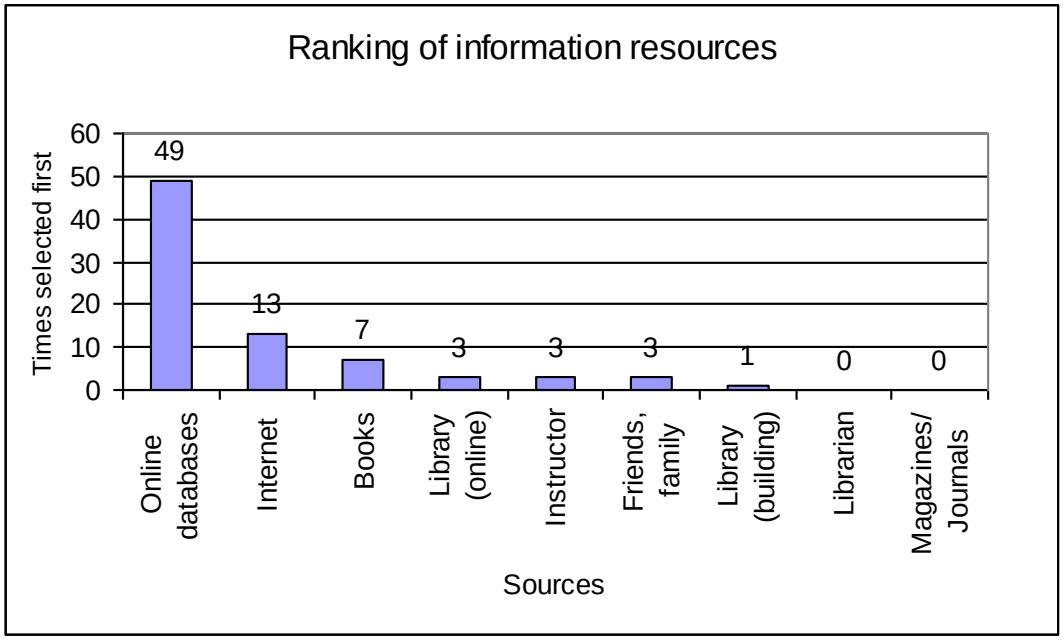


Figure 4. 4: Use of information sources to complete the writing assignment

Of all the correctly completed answers (n=78) provided for question two, the responses indicate that 62% of students used online electronic databases to complete their writing assignment. The internet was second at 17%. Books and other online resources in the library accounted for 18%. The instructor, family and friends were used as a primary source only 7% of the time. Students would use the physical library only 1% of the time and the librarian and print journals were never selected as a first choice. The difference between the pre- and post-survey results indicates that during the information seeking process students discovered the library's

online databases. In both pre- and post-survey questions, however, the instructor was identified as a source less than 6% and the librarian less than 1% of the time. Students, therefore, are identifying the online databases as a viable source through some other means than by contact with the instructor or librarian; possibly from communicating with each other.

When seeking assistance with the writing assignment, students indicate they would ask an instructor, a librarian, or their family and friends at least once during the process.

Table 4. 14: Frequency of asking for assistance during the writing process

	Frequencies			
	Never	Once	Twice	>Twice
Instructor	26% (n=40)	43% (n=65)	20% (n=31)	11% (n=17)
Librarian	70% (n=107)	25% (n=38)	4% (n=6)	1% (n=2)
Family, friends	49% (n=75)	28% (n=41)	15% (n=23)	8% (n=13)

In question four, when asking students which resources they used most, they ranked online databases first (n=78), followed closely by print magazines and journals (n=43) and the Internet (n=42). Tying for fourth place were books and the Internet (n=32).

After completing the writing assignment, students were very forthcoming in identifying deficiencies in their preparation. Evaluating information sources was identified as the area most in need of further instruction (n=58). Citing references correctly was also important (n=53). Narrowing a subject (n=47) and organizing a paper (n=46) were almost of equal importance. Students indicated they needed the least additional preparation for using online databases (n=19).

When expressing confidence in completing a writing assignment that uses information resources, 20% (n=30) indicated they were very confident, 44% (n=76) somewhat confident, 27% (n=42) were only confident, and 9% (n=14) were not confident.

Question seven addressed the usefulness of the library instruction that students received prior to beginning the writing assignment. Information literacy instruction could have been provided in this particular course or students could have received it at another time in another course. Regardless of when it was received, 50% (n=77) of students felt it was very helpful. Forty-five percent (n=69) felt it was somewhat helpful and only 4% (n=6) felt it was not useful at all. Only one student indicated no receipt of any information literacy instruction.

4.6.5 Faculty Post-survey results

The post-survey questions posed to faculty allowed for reflection on the writing assignments submitted and any changes in communication or preparation prior to assigning the paper.

Question one asked faculty if the assignments submitted met expectations in a number of areas.

Table 4. 15: Faculty expectations on the quality of the submitted papers

Expectation areas	Did not meet	Minimal	Met	Exceeded
Well-developed thesis statement	0	0	12	0
Sources were high quality	0	4	6	2
References cited correctly	2	4	6	0
Evidence of synthesized information	0	4	6	2

When faculty were asked what types of additional instruction would be most beneficial to students when completing a writing assignment, the answers were mixed.

Table 4. 16: Additional instruction to benefit students

Instruction	Most beneficial	Beneficial	Minimally beneficial	Not beneficial
Thesis statement development	2	3	2	3
Narrowing a topic	3	3	4	2
Evaluating sources	0	6	2	4
Citing references	5	1	5	0

As question three documents, not all information literacy instruction is provided by librarians. Librarians provide 60% of instruction students received and faculty provide the other 40%.

Questions four through seven explored the possibility that faculty will change aspects of their instruction and presentation of the assignment to students. When asked how likely they would be to change the way in which the assignment is communicated to students, 67% (n=8) indicated they would be at least somewhat likely to change how they communicate the assignment. When asked if faculty would request additional information literacy from a librarian, 75% (n=9) indicated they would not ask for additional instruction while 24% indicated they would be somewhat likely to request additional instruction. On a positive note, 84% (n=10) of faculty indicated they are likely to refer students to a librarian for additional assistance. Only two indicated they would not refer students to a librarian. Eighty-four percent of faculty also indicated that they would be more likely to suggest materials for purchase in the library. Only two faculty were not likely to suggest additional materials for the library.

4.6.6 Librarian Post-survey results

Post-surveys provided to librarians focused on the types of interaction they have with faculty regarding the writing assignments and with students at the reference desk. When asked about interaction with faculty prior to providing instruction, 50% or less of the librarians indicated they had any contact with faculty.

Table 4. 17: Prior interaction with faculty before information literacy instruction

Interaction	No. of responses
Received a list of topics students will be researching	55% (n=5)
Copy of the assignment before information literacy instruction	44% (n=4)
Instructor contacted librarian for follow-up discussions post-assignment	44% (n=4)
Received feedback from students regarding additional instruction	22% (n=2)

Questions two through four focused on faculty-librarian/library interaction regarding the writing assignment. When asked if they were approached to provide follow-up instruction to students during the semester, five faculty indicated they did ask for additional instruction while four did not. When asked if they put materials on reserve in the library for students to use, five faculty indicate they do not place materials on reserve while four faculty do. Sharing comments with librarians regarding the quality of the papers submitted was something that 78% (n=7) of faculty do not do while 22% (n=2) do share comments.

Reference desk interaction with students has identified areas that students ask most about and least when seeking information for their writing assignments.

Table 4. 18: Rank of most asked to least asked questions at the reference desk

Concept	Rank
Online databases	1 (n=7)
Citing resources	2 (n=5)
Online catalog	3 (n=4)
Advance searching strategies	4 (n=2)
Internet searching	5 (n=3)
Webpage evaluation	6 (n=5)
Print magazines/journals	7 (n=7)

4.6.7 Pre- and Post-survey comparisons on select indicators

Due to the complicated nature of the survey identifier and the difference between the number of students that took the pre-survey and those who took the post-survey, there were only 106 students that completed both the pre- and post-survey. Of those 106, 25 were from Delaware County Community College, 28 from Reading Area Community College, and 53 from Westmoreland County Community College. There was no substantive differences in the responses between these community colleges that warranted reporting the findings separately. When determining the questions used for comparison, there were two on both the pre- and post-survey that could provide a direct correlation between responses based on how students thought they would act regarding their choice of topic and use of information resources and how they ultimately did act. On the pre-survey students were asked how they thought they would choose a topic for the paper. These responses were compared to the post-survey question that asked

students how they did choose the topic. Likewise, on the pre-survey when students were asked to rank information resources they thought they would use first, these responses were compared to the post-survey ranking of the same resources students reported they actually used first.

In comparing student responses to these two questions, the researcher discarded responses from any student who did not answer any of the questions. A total of 101 students provided an answer to each of the four questions.

When comparing responses to Question 2 on the pre-survey and Question 1 on the post-survey, 56% (n=57) of the students did not change how they would select a topic on which to write. On both surveys these students indicated they would choose a topic in which they had some interest or previous knowledge. Twenty percent of the students had the topic assigned to them so that there was no change in their responses from the pre- to post-survey. Ten percent (10) thought they would choose a topic in which they were interested but ultimately chose a topic from television or the news. Six students (6%) indicated they would choose a topic in which they were interested, but had the topic assigned. Four students (4%) would choose a topic in which they were interested or had some previous knowledge; on the post-survey, however, these students chose a topic they had used in a previous class. The remaining 4% (n=4) of students had some other combination in which they switched from how they thought they would choose a subject to how they actually selected the subject on which they wrote their papers.

In the final analysis, 76% (n=77) of the students who were used for comparison indicated they would choose a topic in which they were interested or had previous knowledge.

The next set of questions used for comparison had students rank which resources they would select first when seeking information for their topics. Seventy-two students completed these questions correctly. Of those 72, 19 (26%) demonstrated a shift in resources used for

information-seeking between the pre- and post-surveys. In the pre-survey, these 19 students indicated they would use the Internet as their first choice for information, but after having completed the writing assignment indicated they actually used the online databases as their first choice when seeking information. The remaining 53 students, who completed both questions correctly, did not change their response between the pre- and post-survey; these students indicated the Internet as their first choice in response to both questions.

For the pre- and post-surveys for the faculty and the librarians, there were no questions that provided direct comparisons; conclusions, however, were drawn from the questions that addressed faculty and librarian knowledge of resources available to students and perceptions regarding the use of those information sources and skill sets students possess.

5.0 CONCLUSIONS

In Chapter 4, the results from the pre- and post-surveys of the students, faculty and librarians were reported. Chapter 5 takes these results and combines them with the supporting literature to do the following: develop conclusions on how students, faculty and librarians interact in regard to a writing assignment that requires the use of information sources, develop a best-practices model for how interaction in the writing process should occur, discuss study limitations, and suggest further research in this area.

5.1 INTERACTIONS

5.1.1 Student and faculty interaction

The first major interaction that students and faculty had regarding the writing assignment was concerning the manner in which the assignment was communicated to the student. In pre-survey results 69% (n=123) of students reported that the assignment was communicated to them primarily by the faculty member discussing it in class but providing nothing to the students in writing that outlined the assignment and provided details of how it was to be completed. When faculty were asked how they communicated the assignment to the students, 10 out of 12 faculty reported that the assignment appeared in the syllabus and that it was also reviewed in class. Students had an option on their surveys to indicate if the assignment was in the syllabus; only 18% (32), however, indicated that as a choice. Clearly, a breakdown in communication occurred at the onset of the assignment with students only hearing about the assignment and not realizing

the syllabus contained details of what was required. Likewise, faculty made the assumption that students understood what a syllabus is and the assignment was outlined there. This breakdown in communication is supported by the findings of Meyers, et al. that suggest that the verbal behaviors of instructors have a direct impact on how students seek information (2001). In this study, students relied on the verbal review of the assignment without realizing they also had a written description of what was required.

Student responses on the post-survey further indicated that early communication of the assignment affected how they sought information when they reported on the post-survey that identifying and evaluating resources was the skill in which they were most deficient. The deficiency in identifying and evaluating resources can be related to the manner in which the students received information literacy instruction. Seventy-five percent (n=9) of the faculty reported that they provided the overview of library resources. Not that this indicates that faculty are incapable of providing instruction, it just indicates that instruction in the use of the library and its resources is not being provided by a librarian. This manner of instruction places a burden on the faculty member to keep up to date on the types of information available in the library. In contrast, 100% of the faculty indicated that the ability to identify and evaluate resources was very important to completing the assignment successfully. It is an assumption on the part of faculty that students received a comprehensive overview of library resources and their use. This assumption may have also contributed to faculty reporting that the papers met their expectations of what students would submit. It was not determined whether their expectation for the quality of the papers was high or not. One faculty member, however, reported, "I don't have very high expectations in general. I have a pretty good idea of how the students are coming along, that's

why I noted that the quality of the papers were about what I expected." This general acceptance of minimal quality papers was also reported by Leckie (1996).

5.1.2 Faculty and librarian interaction

The second interaction that was explored through the pre- and post-survey was that of the faculty member interacting with the librarian and library resources. It has already been noted that librarians are not necessarily involved in providing library instruction prior to the assigning of a paper that requires the use of information sources. Regarding materials, faculty were asked on the pre-survey what interaction they had with the library; most (83%) indicated they suggest materials for inclusion in the library and that they periodically visit the library to see what materials are available for students to use. Librarians also indicated that they meet with faculty prior to providing instruction to ensure that topics of importance are being covered.

The major weakness in the faculty and librarian interaction occurs, therefore, in the time allotted for instruction, the number of topics to be covered, and when the instruction is provided in relation to the writing assignment. First, only one of the three community colleges surveyed indicated it has a formal information literacy instruction program; the other two do not have formal programs. Second, for the two colleges that do not have formal information literacy programs, instruction is provided at the request of the faculty member. Time allotted for this instruction is typically one hour during which librarians cover use of the library's online catalog, electronic databases, and Internet searching. Advanced skills such as evaluation of sources, search strategies, and citing references are not typically covered. The one-hour overview of library resources is clearly not enough to provide students with the skills they need to use and cite library resources effectively. This is based on the response from faculty clearly indicating

that correct use of citations is a major deficiency in student's writing. To address these weaknesses, a more comprehensive course-integrated approach to instruction is needed and has been proven to be the most effective (Carlson & Miller, 1984b).

Finally, the time between information literacy instruction and completion of the writing assignment is important. To meet the requirements of this study, students had to complete a writing assignment that required the use of information resources. When identifying individual courses in each community college that met this criterion, it was determined that writing assignments typically take place in second-level English Composition courses. Unfortunately, when talking with the librarians in each of the community colleges, the researcher ascertained that most information literacy instruction occurs in first-level English Composition courses. Students rarely take a first-level and second-level composition course within the same semester; therefore, instruction by the librarian does not occur within the same course or semester that the writing assignment is required. Emmons, et al. (2002) identified that to implement a good library instruction program the librarian must work with each instructor to provide a library session at the time when students are ready to begin their library research.

5.1.3 Student interaction with the library and librarian

The final interaction occurs between the student and the librarian in the use of the library and its resources. Students indicated on the pre-survey the first source they would consult when seeking information would be the Internet. The use of library resources such as online databases or books were chosen next; only 1% of the students, however, reported asking assistance from the librarian as a choice when seeking information. When asked from whom they would seek assistance with their information needs, instructors were the overwhelming choice of students;

again students sought the librarian as a last resort. These results indicate that the librarian is not seen as a resource to students when they are using information sources or are struggling to identify or evaluate information. Therefore, if a comprehensive and integrated library instruction program existed, librarians could be viewed by students as an additional resource in the same manner in which students view their instructors (Black, Crest, & Volland, 2001).

Once the assignment was completed, 62% of students in the post-survey indicated they used online databases more frequently than the Internet. Unfortunately, librarians were never selected as a first or second choice. Twenty-five percent of students did indicate they consulted with a librarian at least once during the course of the writing process. Although students did not view the librarian as a viable source for assistance in the writing/information-seeking process, they did indicate that when they received library instruction they found it useful.

Students indicated on the post-survey they used online databases the most in seeking information for their writing assignments. They did not seek information from the librarian or view the librarian as a tool to assist in the identification or evaluation of library sources. Clearly, for the student, the physical resources the library provides such as online databases, books, journals, and access to the Internet are deemed more important than the human resource that is the librarian. Again, an integrated approach to information literacy and exposure to the librarian through faculty-librarian collaboration could improve the interaction between the student and the librarian.

5.1.4 Citation Crisis

Throughout the pre- and post-surveys of the students, faculty, and librarians, a clear information need presented itself and in each case was not addressed – the correct use of citations. Students

in the pre-survey had mixed feelings about the use of citations. When asked how confident they felt using a particular style manual to complete their papers, 73% of students indicated they felt confident applying a style to their writing assignments, but then indicated citing information caused them the most frustration. The problem of the mechanics of citing sources correctly is becoming less of an issue as new software packages emerge that handle citations automatically.

Faculty in their pre-survey indicated that citing information was very important to them and felt that students should know how to cite information correctly. For faculty the importance of citing correctly represents the difference between intellectual usages of information versus the mechanics of citation format. They did not know, however, if their colleges provided workshops or instruction to students in how to cite information. Librarians reported that when they provide information literacy instruction they rarely cover citation and style.

After the writing assignment was submitted, all three groups continued to report a problem with an understanding of citations. Students indicated that citing sources correctly was an area in which they felt deficient. Fifty percent of faculty indicated that citations in student's papers did not meet or minimally met their expectations, and 42% of faculty indicated that students could benefit from additional instruction in citing properly. Librarians also reported that students seek help with citations was the second most frequent request at the Reference Desk surpassed only by requests for help in using online databases. Librarians believed citation writing was one of the topics least covered in information literacy instruction.

The lack of attention provided to teaching students the correct manner in which to cite resources also raises the issue of students' understanding of the ethical uses of information and the reasons for correctly citing information.

5.2 A MODEL BASED ON BEST PRACTICES

Based on analysis of findings from the interactions among students, faculty and librarians, the researcher suggests some best practices for community colleges in Pennsylvania to adopt and proposes a model for instruction based on those practices.

- Collaboration between faculty teaching advanced writing courses and librarians must take place to ensure that students are receiving the more sophisticated skills they need to identify and evaluate resources more adeptly and to site those resources correctly. Because most of the basic information literacy instruction occurs in introductory English classes or similar first-year courses, this collaboration will provide students with information they need at the time the writing assignment is taking place.
- Although faculty provide most of the overview of library resources and there is limited class time to allow for in-depth information literacy instruction, students could be required to attend library-sponsored workshops outside class time to ensure they receive the instruction needed without losing faculty-led instructional time in the classroom. In addition to workshops, students could access library instruction via course management systems and online modules. Faculty could also be trained in information literacy pedagogy using these same instructional formats. By having faculty direct students to the library resources, students will have the opportunity to work with librarian-developed instructional materials. This practice could result in papers that better meet the expectations of faculty.

- A standardized set of learning objectives needs to be developed by librarians and adopted by all the community college libraries in Pennsylvania to ensure uniformity in the skills being taught. Based on the performance indicators developed by the Association of College and Research Libraries, these standardized skills would provide a foundation upon which students could build their skills. This is especially important considering 52% of students in the survey population indicated their intent to transfer to another higher education institution.

By implementing standardized learning objectives in a faculty-librarian collaborative environment, community college students would receive instruction in the skills needed to complete a writing assignment successfully that requires the use of information resources. This standardization would also provide students with the foundation upon which to build additional skills, especially for those students who continue their educations beyond the community college level.

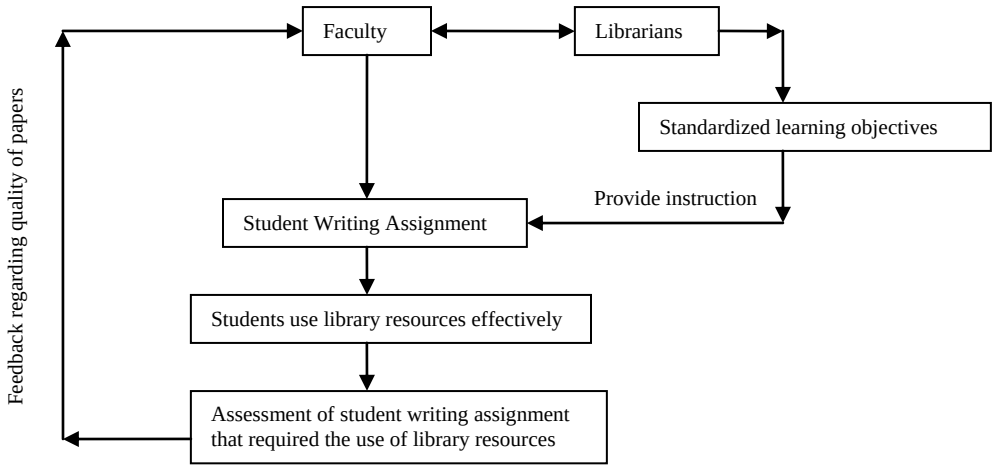


Figure 5. 1 Model based on best practices

5.3 FURTHER RESEARCH

There are numerous studies concluded on the information-seeking behaviors of college students; the majority of those studies, however, are conducted using the behaviors of four-year college and university students. Research into the information-seeking behaviors and information literacy instruction of community colleges is sparse. This study attempted to bring to light (1) the disparity between how information literacy is presented in Pennsylvania community colleges; (2) how librarians, to a large degree, are not part of the process; and (3) where information literacy instruction is falling short for students.

A more comprehensive examination of information literacy instruction needs to occur, especially, in community colleges that do not have a formal information literacy program. A formal program would entail a credit-course dedicated to the teaching of information literacy skills. Additionally, course syllabi for English Composition courses that include writing assignments that requires the use of information resources need to be examined to document exactly the information regarding the assignment that is communicated to students.

Faculty in their post-survey responses indicated knowledge of additional workshops offered by their schools for students to assist with citations, advanced search skills, and evaluation of information resources. Why then are faculty not requiring students to take these additional workshops? Since the ability to write well is a skill that students will use in other disciplines, it would be interesting to track the student progress of those that take advantage of additional training opportunities as opposed to those who don't.

An analysis of the writing assignments submitted needs to be conducted. Only after an understanding of the deficiencies in the writing will faculty and librarians be able to adjust

teaching styles and methods of communication to reach students and make an impact in areas in which they need additional instruction.

Finally, the study needs to be conducted within four year institutions within Pennsylvania to document any patterns and trends among four-year students and community college students writing an assignment that requires the use of information sources.

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APPENDIX A: STUDENT SURVEYS-PILOT STUDY

NOTE

The style manual used in preparation of this document was the *Publication manual of the American Psychological Association* (5th ed. 2001). Deviations from this style are in observance of the *Format Guidelines for Electronic Thesis and Dissertation Preparation at the University of Pittsburgh* (Office of the Provost, 2003).

The Institutional Review Board (IRB) of the University of Pittsburgh which reviews and approves all research activities conducted by faculty, students, or staff of the University of Pittsburgh reviewed this study. The IRB approved these survey questionnaires and a copy of the approval is available for review.

Student Pre-Survey

Student ID No:

1. Which of these statements best describes how you got information from your instructor regarding this writing assignment and the use of information resources? (choose one)

   The assignment was written out with a clear timetable for completion and all expectations for the paper are defined. ____

   The assignment was talked about in class and then a deadline date is given. ____

   The instructor talked with the class about the assignment and the guidelines were included in the syllabus. ____

2. For this assignment how will you choose a topic for the paper? (choose one)

   I will choose a topic that I used in a previous class ___
   I will choose a topic that I'm interested in or have some knowledge of ___
   I will choose a topic based on materials in the library ___
   I will choose a topic that I heard about on TV or in the news ___
   Topic was assigned ___

3. When gathering your information please rank the following resources based on which you would use first, second, etc.

   Books ___
   Electronic online databases (EBSCOHost®, Lexis®, WilsonWeb®) ___
   Friends, family, classmates ___
   Instructor ___
   Librarian ___
   Library (building) ___
   Library (online) ___
   Magazines/Journals ___
   Web search engine (Google®, Yahoo®, etc.) ___

4. When you have questions regarding resources used in your assignment who do you typically ask for assistance?

   Instructor ___
   Friends, family, classmates ___
   Librarian ___
   I typically don't have any problems doing research ___

5. Indicate below how confident you are in using a style manual when completing a writing assignment that uses information sources. (Style examples: ALA, MLA or Chicago) (choose one)

Very confident (I have used citations in previous papers and know how to cite in-text and in a bibliography) ____

Somewhat confident (I have used citations in previous papers and only need to consult the style manual for specific references) ____

Confident (I know how to do some basic citations but need help with specific citations like the Internet) ____

Not confident (I have never done citations or I have done them but still do not understand them) ____

6. When given a topic for a paper that you were **not allowed** to choose, how do you go about identifying resources to use? (choose all that apply)

I ask my instructor for suggestions on where to look for materials. _____

I ask my friends, family, or classmates for suggestions on where to look for materials. _____

I ask the librarian for suggestions on where to look for materials. _____

I use the Internet to find out how many sources are available on the topic. _____

I use the library's online databases to look for materials. _____

7. When given a choice of a topic to write about, one that you **were allowed** to choose, how do you go about identifying resources to use? (choose all that apply)

I search the library's online databases for information _____
I use the Internet search engines to find sources of information _____
I ask my instructor to suggest resources to use _____
I ask the librarian to suggest resources to use _____

8. Which of the following statements causes you the most frustration when completing a writing assignment that uses information sources? (choose one)

I didn't know where to locate information to cite in the paper. _____
I didn't know how long to make the paper. _____
I didn't know how to evaluate the sources I located. _____
I didn't know what type of resources the instructor wanted. _____
I didn't understand the purpose of the paper. _____
I had to write about a topic that I didn't know anything about. _____
I got to write about a topic that I was interested in, but I didn't know if it is what the instructor wanted (format, number of citations, or length) _____

9. What is your current academic status? (circle one) Full-time Part-time

10. What is your age group? (circle one)

Under 18 18-19 29-21 22-24 25-29

30-34 35-39 40-49 50-64 65 and Over

11. Gender (circle one) Female Male

12. Intended course of study (choose one)

Associate of Applied Science degree (A.A.S.) _____

Associate of Arts (A.A) _____

Diploma _____

Certificate _____

Undeclared _____

Transfer to other higher education institution _____

[IRB statement of confidentiality]

Student Post-Survey

Student ID No:

1. For this assignment how did you choose the topic for the paper? (choose one)

I will chose a topic that I used in a previous class	___
I will chose a topic that I'm interested in or have some knowledge of	___
I will chose a topic based on materials in the library	___
I will chose a topic that I heard about on TV or in the news	___
Topic was assigned	___

2. Which of the following did you use when seeking information for your research assignment? (check all that apply)

Books	___
Electronic online databases (EBSCOHost®, Lexis®, WilsonWeb®, etc.)	___
Friends, family, classmates	___
Instructor	___
Librarian	___
Library (building)	___
Library (online)	___
Magazines/Journals	___
Web search engine (Google®, Yahoo®, etc.)	___

3. On a scale of 1-5 (1- being *never* and 5- being *frequently*) how often did you do the following during the time you were writing your assignment?

Asked your instructor to help you identify information sources for use in your assignment.	1	2	3	4	5
Worked with a librarian to identify information sources for use in your assignment.	1	2	3	4	5
Asked your friends or family to help you identify information sources for use in your assignment.	1	2	3	4	5

4. Of the resources you used for your paper, please rank (1-4) which ones you used the most.

Print books	____
Electronic online databases (EBSCOHost®, Lexis®, WilsonWeb®, etc.)	____
Print journals in the library	____
Web search engine (Google®, Yahoo®, etc.)	____
Other (please specify)	

5. Now that you have completed your paper, which of the following do you feel you need additional instruction in using?

Selecting and searching electronic online databases (EBSCOhost®, Lexis®, WilsonWeb®, etc.)	___
How to organize a research paper	___
How to cite references	___
How to narrow a subject	___
How to evaluate information resources, including Internet sites	___

6. Indicate below how confident are you in your ability to complete a writing assignment that requires the use of information resources. (choose one)

Very confident (I was able to identify a subject, locate good sources, cite them correctly, and provide a balanced paper.)	____
Somewhat confident (I was able to identify a subject, locate sources, and cite them correctly)	____
Confident (I was able to identify a subject. I needed help locating enough sources on my topic and I needed help with citations)	____
Not confident (Aside from identifying a subject, I had a hard time writing the paper, using resources, and citing materials correctly)	____

7. How helpful was the information literacy instruction you received prior to beginning your writing assignment?

Very helpful.	_____
Somewhat helpful.	_____
Not very helpful.	_____

8. Are there any other comments you would like to make about the writing assignment, your instructor, or the librarian?

[IRB statement of confidentiality]

APPENDIX B: STUDENT SURVEYS

Identifying the Information-Seeking Behaviors of Students in Writing Assignments that Require Students to Use Information Sources

Student Pre-Survey

The intent of this research is to identify the information-seeking behaviors used by community college students when using resources to complete a writing assignment. Therefore, I will be surveying college students enrolled in English classes that have writing assignments that include using information resources, the faculty who teach those English classes, and the librarians who provide information literacy instruction.

Three community colleges in Pennsylvania have been identified for participation in this survey. Your college is one of those selected. The survey process will consist of a pre and post-survey. The pre-survey will be conducted at the beginning of the semester and the post-survey will be conducted at the conclusion of the writing assignment. The survey will contain some questions regarding your background, such as age, gender, and reason for attending a community college.

There is no foreseeable risk associated with this project, nor are there any direct benefits to you. **You will be asked to identify yourself on the survey by providing a combination of the first two letters of your last name and the month you were born.** All responses will be kept confidential and results will be kept secure. Your participation is voluntary, and you may choose not to participate in the survey. This study is being conducted by Barb Zaborowski, who can be reached at 814-262-6425, if you have any questions.

Example:
John Smith born in January=SM01

Student ID:

1. Which of these statements best describes how you got information from your instructor regarding this writing assignment and the use of information resources? (choose one)

The assignment is outlined in the syllabus and was briefly reviewed at the beginning of the semester. ____

The assignment was not included in the syllabus, but a separate written description of the assignment was distributed which included the deadline. ____

The instructor talked with the class about the assignment and the guidelines for what was expected including the deadline. Nothing was provided in print format. ____

The writing assignment was not discussed. ____

2. For this assignment how will you choose a topic for the paper? (choose one)

I will choose a topic that I used in a previous class ___

I will choose a topic that I'm interested in or have some knowledge of ___

I will choose a topic based on materials in the library ___

I will choose a topic that I heard about on TV or in the news ___

Topic was assigned ___

3. When gathering your information please rank the following resources based on which you would use first, second, etc.

Books ___

Electronic online databases (EBSCOHost®, Lexis®, WilsonWeb®) ___

Friends, family, classmates ___

Instructor ___

Librarian ___

Library (building) ___

Library (online) ___

Magazines/Journals ___

Internet search (Google®, Yahoo®, etc.) ___

4. When you have questions regarding resources used in your assignment who do you typically ask for assistance?

Instructor ___

Friends, family, classmates ___

Librarian ___

I typically don't have any problems doing research ___

5. Indicate below how confident you are in using a style manual when completing a writing assignment that uses information sources. (Style examples: ALA, MLA or Chicago) (choose one)

Very confident (I have used citations in previous papers and know how to cite in-text and in a bibliography) ____

Somewhat confident (I have used citations in previous papers and only need to consult the style manual for specific references) ____

Confident (I know how to do some basic citations but need help with specific citations like the Internet) ____

Not confident (I have never done citations or I have done them but still do not understand them) ____

6. When given a topic for a paper that you were **not allowed** to choose, how do you go about identifying resources to use? (choose all that apply)

I ask my instructor for suggestions on where to look for materials. _____

I ask my friends, family, or classmates for suggestions on where to look for materials. _____

I ask the librarian for suggestions on where to look for materials. _____

I use the Internet to find out how many sources are available on the topic. _____

I use the library's online databases to look for materials. _____

7. When given a choice of a topic to write about, one that you **were allowed** to choose, how do you go about identifying resources to use? (choose all that apply)

I search the library's online databases for information _____

I use the Internet search engines to find sources of information _____

I ask my instructor to suggest resources to use _____

I ask the librarian to suggest resources to use _____

8. Which of the following statements causes you the most frustration when completing a writing assignment that uses information sources? (choose all that apply)

I didn't know how to cite information in the paper. _____
I didn't know how to organize the paper. _____
I didn't know how to evaluate the sources I located. _____
I didn't know how to narrow the subject I want to write about. _____
I wasn't sure which library resources to use to find information. _____
I had to write about a topic that I didn't know anything about. _____
I got to write about a topic that I was interested in, but I didn't know if it is what the instructor wanted (format, number of citations, or length) _____

9. When did you receive instruction in how to use library resources?

I received an overview of library resources in a previous class _____
I received an overview of library resources in this class _____
I have never received an overview of library resources _____

10. Who provided you with your library instruction?

My instructor _____
A librarian _____

11. What is your current academic status? (circle one) Full-time Part-time

12. What is your age group? (circle one)

Under 18 18-19 20-21 22-24 25-29
30-34 35-39 40-49 50-64 65 and Over

13. Gender (circle one) Female Male

14. Intended course of study (choose one)

Associate of Applied Science degree (A.A.S.) _____
Associate of Arts (A.A) _____
Diploma _____
Certificate _____
Undeclared _____
Transfer to other higher education institution _____

Identifying the Information-Seeking Behaviors of Students in Writing Assignments that Require Students to Use Information Sources

Student Post-Survey

The intent of this research is to identify the information-seeking behaviors used by community college students when using resources to complete a writing assignment. Therefore, I will be surveying college students enrolled in English classes that have writing assignments that include using information resources, the faculty who teach those English classes, and the librarians who provide information literacy instruction.

Three community colleges in Pennsylvania have been identified for participation in this survey. Your college is one of those selected. The survey process will consist of a pre and post-survey. The pre-survey will be conducted at the beginning of the semester and the post-survey will be conducted at the conclusion of the writing assignment. The survey will contain some questions regarding your background, such as age, gender, and reason for attending a community college.

There is no foreseeable risk associated with this project, nor are there any direct benefits to you. **You will be asked to identify yourself on the survey by providing a combination of the first two letters of your last name and the month you were born.** All responses will be kept confidential and results will be kept secure. Your participation is voluntary, and you may choose not to participate in the survey. This study is being conducted by Barb Zaborowski, who can be reached at 814-262-6425, if you have any questions.

Example:
John Smith born in January=SM01

Student ID:

1. For this assignment how did you choose the topic for the paper? (choose one)

I chose a topic that I used in a previous class	___
I chose a topic I was interested in or had some knowledge of	___
I chose a topic based on materials in the library	___
I chose a topic that I heard about on TV or in the news	___
Topic was assigned	___

2. When gathering information for your paper, please rank the following resources based on what you actually used first, second, etc.

Books	___
Electronic online databases (EBSCOHost®, Lexis®, WilsonWeb®, etc.)	___
Friends, family, classmates	___
Instructor	___
Librarian	___
Library (building)	___
Library (online)	___
Magazines/Journals	___
Internet search (Google®, Yahoo®, etc.)	___

3. On a scale of 1-4 (1- being *never*, 2- being *once*, 3- being *twice*, 4– being *more than twice*) how often did you do the following during the time you were writing your assignment?

Asked your instructor to help you identify information sources for use in your assignment.	1	2	3	4
Worked with a librarian to identify information sources for use in your assignment.	1	2	3	4
Asked your friends or family to help you identify information sources for use in your assignment.	1	2	3	4

4. Of the resources you used for your paper, please rank (1-4) which ones you used the most.

Print books	____
Electronic online databases (EBSCOHost®, Lexis®, WilsonWeb®, etc.)	____

Print journals in the library ____

Web search engine (Google®, Yahoo®, etc.) ____

Other (please specify)

5. Now that you have completed your paper, which of the following do you feel you need additional instruction in using? (check all that apply)

Selecting and searching electronic online databases (EBSCOhost®, Lexis®, WilsonWeb®, etc.) ___

How to organize a research paper ___

How to cite references ___

How to narrow a subject ___

How to evaluate information resources, including Internet sites ___

6. Indicate below how confident are you in your ability to complete a writing assignment that requires the use of information resources. (choose one)

Very confident (I was able to identify a subject, locate good sources, cite them correctly, and provide a balanced paper.) ____

Somewhat confident (I was able to identify a subject, locate sources, and cite them correctly) ____

Confident (I was able to identify a subject. I needed help locating enough sources on my topic and I needed help with citations) ____

Not confident (Aside from identifying a subject, I had a hard time writing the paper, using resources, and citing materials correctly) ____

7. How helpful was the information literacy instruction you received prior to beginning your writing assignment?

Very helpful. _____

Somewhat helpful. _____

Not very helpful. _____

Did not receive any information literacy instruction for this assignment _____

APPENDIX C: FACULTY SURVEYS-PILOT STUDY

Faculty Pre-Survey

Class No. and Section:_____ Class Name:_____

1. How important is it for students to possess the following skills in order to complete the writing assignment that requires the use of information resources? (1- not important to 5- very important)

Basic knowledge about locating library books and online databases.	1	2	3	4	5
Basic knowledge about evaluating print and online resources including Internet web sites	1	2	3	4	5
Knowledge about the subject prior to conducting the research.	1	2	3	4	5
Advance knowledge about the library resources available and how to use advanced search strategies to locate material.	1	2	3	4	5
Ability to accurately cite references according to a style manual such as APA or MLA.	1	2	3	4	5

2. When giving students a writing assignment that requires the use of information sources, do you limit or exclude any of the following resources? (check all that apply)

	Limit	Exclude
Books	_____	_____
Electronic online databases (EBSCOHost®, Lexis®, WilsonWeb®, etc.)	_____	_____
Magazines/Journals	_____	_____
Web search engine (Google®, Yahoo®, etc.)	_____	_____

Other restrictions on information sources (please list.)

3. When giving students writing assignments which of the following methods best describes how you communicate the assignment to the students. (choose one)

Written description of the assignment with detailed indicators of what is expected including deadlines. ____

Oral discussion of the assignment in class with an oral deadline date. ____

Oral discussion of the assignment in class with a follow-up written outline of what is expected ____

Limited discussion of the assignment but information regarding assignment outline in course syllabus. ____

4. Which of the following do you provide for students prior to assigning a writing assignment that requires the use of information resources? (choose all that apply)

Take students to the library for information literacy instruction by a librarian. ____

Have a librarian come to class to review library materials with students. ____

Talk with the students about the library and advise them to start their projects there first. ____

Library instruction is covered in another course and will assume that students have taken that course prior to this one. ____

None required ____

5. When giving a writing assignment are students able to choose their own topic or is one assigned by you? (circle one) Students choose Faculty assigned

6. Typically how long do students have to work on the paper?

_____ until mid-term (typically 6-7 weeks)

_____entire term (typically 15 weeks)

_____ some other period of time, please specify_____

7. When working on a writing assignment please indicate if students are required to submit to you any of the following throughout the duration of the project: (check all that apply).

   Outline of paper _____

   Drafts _____

   Bibliography _____

   Annotated bibliography _____

8. Does your college provide workshops/instruction or services for students in any of the following? (check all that apply)

   Evaluating print and online resources, including Internet web sites _____

   Ethical use of materials, including copyright and plagiarism _____

   Use of library resources _____

   Writing center _____

   Use of particular styles (i.e. APA, MLA or Chicago) _____

   Not sure _____

9. Do you suggest materials for purchase by the library to support your academic program? (circle one) Yes No

10. Do you periodically visit the library to review the materials and resources that are available to students taking your course? (circle one) Yes No

11. How many years have you been teaching at this college? _____

12: How many years have you been teaching the course that requires that students complete writing assignment using information resources? _____

[IRB statement of confidentiality]

Faculty Post-Survey

Class No. and Section: _____ Class Name: _____

1. Based on the writing assignments submitted by students, please rate overall how the papers met your expectations in the following areas. (1-did not meet to 5- exceeded expectation)

The papers had well-developed thesis statements.	1	2	3	4	5
Sources used in the papers were varied and of high quality and were appropriate for the assignment.	1	2	3	4	5
All references were cited correctly within the text and in the reference listing.	1	2	3	4	5
The papers showed evidence of a synthesizing and summarizing of information taken from appropriate sources.	1	2	3	4	5

2. Based on the completed assignments, rank the following based on areas in which students would have benefited from additional instruction.

Thesis statement development. _____

Narrowing a topic. _____

Identifying and evaluating appropriate sources. _____

Citing references correctly whether in-text or in the reference list. _____

3. Did you have library instruction provided to this class by a librarian? Yes No

4. As a result of this assignment how likely are you to change the way in which you communicate the assignment to students? (1- not likely to 5-very likely) 1 2 3 4 5

5. As a result of this assignment how likely are you to request additional information literacy instruction from a librarian? (1- not likely to 5-very likely) 1 2 3 4 5

6. As a result of this assignment how likely are you to directly refer students to a librarian for assistance with their research? (1- not likely to 5-very likely) 1 2 3 4 5

7. As a result of this assignment how likely are you to suggest additional materials for the library? (1- not likely to 5-very likely) 1 2 3 4 5

8. Are there any additional comments you would like to share regarding the student's submitted writing assignments and you initial expectations of student performance?

[IRB statement of confidentiality]

APPENDIX D: FACULTY SURVEYS

Identifying the Information-Seeking Behaviors of Students in Writing Assignments that Require Students to Use Information Sources

Faculty Pre-Survey

The intent of this research is to identify the information-seeking behaviors used by community college students when using resources to complete a writing assignment. Therefore, I will be surveying college students enrolled in English classes that have writing assignments that include using information resources, the faculty who teach those English classes, and the librarians who provide information literacy instruction.

Three community colleges in Pennsylvania have been identified for participation in this survey. Your college is one of those selected. The survey process will consist of a pre and post-survey. The pre-survey will be conducted at the beginning of the semester and the post-survey will be conducted at the conclusion of the writing assignment. The survey will contain some questions regarding your background, such as year teaching in a community college and years teaching this specific course.

There is no foreseeable risk associated with this project, nor are there any direct benefits to you. All responses will be kept confidential and results will be kept secure. Your participation is voluntary, and you may choose not to participate in the survey. This study is being conducted by Barb Zaborowski, who can be reached at 814-262-6425, if you have any questions.

Class No. and Section:_____ Class Name:_____

1. How important is it for students to possess the following skills in order to complete the writing assignment for this class that requires the use of information resources? (1- *not important,* 2– *somewhat important,* 3– *important,* 4-*very important*)

Basic knowledge about locating library books and online databases.	1	2	3	4
Basic knowledge about evaluating print and online resources including Internet web sites	1	2	3	4
Knowledge about the subject prior to conducting the research.	1	2	3	4
Advance knowledge about the information resources available and how to use advanced search strategies to locate material.	1	2	3	4
Ability to accurately cite references according to a style manual such as APA or MLA.	1	2	3	4

2. When giving students this writing assignment that requires the use of information sources, did you limit or exclude any of the following resources? (check all that apply)

	Limit	Exclude
Books	_____	_____
Electronic online databases (EBSCOHost®, Lexis®, WilsonWeb®, etc.)	_____	_____
Magazines/Journals	_____	_____
Internet searches (Google®, Yahoo®, etc.)	_____	_____

Other restrictions on information sources (please list.)

3. When giving students this writing assignments that requires the use of information resources which of the following methods best describes how you communicated the assignment to the students. (choose one)

Assignment is outlined in the syllabus and briefly reviewed at the beginning of the semester. ____

Assignment is not included in the syllabus, but a separate written description of the assignment was distributed which included expectations and deadlines. ____

Assignment was discussed orally with the class with indicators of what is expected and deadlines provided. Nothing is given to the students in written form. ____

4. For this writing assignment that required the use of information resources which did you provide for the students? (choose all that apply)

Had a librarian provide information literacy instruction. _____

_____

Had a librarian review how to identify and evaluate appropriate sources of information. _____

Had a librarian do a session on style formats (APA, MLA, or Chicago) _____

As the instructor, I provided the overview of the information resources and provided instruction in appropriate use of style formats. _____

Library instruction is covered in another course and I assumed that students have taken that course prior to this one. _____

No library instruction needed. _____

5. When giving a writing assignment are students able to choose their own topic or is one assigned by you? (circle one) Students choose Faculty assigned

6. Typically how long do students have to work on this writing assignment that required the use of information resources?

_____ until mid-term/semester (typically 6-7 weeks)

_____almost entire term/semester, allowing time for submission and return of the assignment (typically between 13-15 weeks)

_____ some other period of time, please specify_____

7. When working on a writing assignment please indicate if students are required to submit to you any of the following throughout the duration of the project: (check all that apply).

Outline of paper _____

Drafts _____

Bibliography _____

Annotated bibliography _____

8. Does your college provide workshops/instruction or services for students in any of the following? (check all that apply)

Evaluating print and online resources, including Internet web sites _____

Ethical use of materials, including copyright and plagiarism _____

Use of information resources _____

Writing center _____

Use of particular styles (i.e. APA, MLA or Chicago) _____

Not sure _____

9. Do you suggest materials for purchase by the library to support your academic program? (circle one) Yes No

10. Do you periodically visit the library to review the materials and resources that are available to students taking your course? (circle one) Yes No

11. How many years have you been teaching at this college? _____

12: How many years have you been teaching this course that requires that students complete writing assignment using information resources? _____

Identifying the Information-Seeking Behaviors of Students in Writing Assignments that Require Students to Use Information Sources

Faculty Post-Survey

The intent of this research is to identify the information-seeking behaviors used by community college students when using resources to complete a writing assignment. Therefore, I will be surveying college students enrolled in English classes that have writing assignments that include using information resources, the faculty who teach those English classes, and the librarians who provide information literacy instruction.

Three community colleges in Pennsylvania have been identified for participation in this survey. Your college is one of those selected. The survey process will consist of a pre and post-survey. The pre-survey will be conducted at the beginning of the semester and the post-survey will be conducted at the conclusion of the writing assignment. The survey will contain some questions regarding your background, such as year teaching in a community college and years teaching this specific course.

There is no foreseeable risk associated with this project, nor are there any direct benefits to you. All responses will be kept confidential and results will be kept secure. Your participation is voluntary, and you may choose not to participate in the survey. This study is being conducted by Barb Zaborowski, who can be reached at 814-262-6425, if you have any

Class No. and Section:_____ Class Name:_____

1. Based on the writing assignments submitted by students, please rate overall how the papers met your expectations in the following areas. (1-*did not meet* 2– *minimally met,* 3–*met expectations*, 4-*exceeded expectations*)

The papers had well-developed thesis statements.	1	2	3	4
Sources used in the papers were varied and of high quality and were appropriate for the assignment.	1	2	3	4
All references were cited correctly within the text and in the reference listing.	1	2	3	4
The papers showed evidence of a synthesizing and summarizing of information taken from appropriate sources.	1	2	3	4

2. Based on the completed assignments, rank (1-4) the following based on areas in which students would have benefited from additional instruction. (1– would have most benefited from more instruction to 4-would have least benefited from more instruction.)

Thesis statement development. _____

Narrowing a topic. _____

Identifying and evaluating appropriate sources. _____

Citing references correctly whether in-text or in the reference list. _____

3. Did you have library instruction provided to this class by a librarian? Yes No

4. As a result of this assignment how likely are you to change the way in which you communicate the assignment to students? (1-*not likely,* 2– *somewhat likely*, 3-*likely*, 4-*very likely*) 1 2 3 4

5. As a result of this assignment how likely are you to request additional information literacy instruction from a librarian? 1-*not likely,* 2– *somewhat likely*, 3-*likely*, 4-*very likely*) 1 2 3 4

6. As a result of this assignment how likely are you to more directly refer students to a librarian for assistance with their research? 1-*not likely,* 2– *somewhat likely*, 3-*likely*, 4-*very likely*) 1 2 3 4

7. As a result of this assignment how likely are you to suggest additional materials for the library? 1- *not likely,* 2– *somewhat likely*, 3-*likely*, 4-*very likely*) 1 2 3 4

8. Are there any additional comments you would like to share regarding the student's submitted writing assignments and your initial expectations of student performance?

APPENDIX E: LIBRARIAN SURVEYS-PILOT STUDY

Librarian Pre-Survey

Class No. and Section:_____ Class Name:_____

1. Before beginning your instruction, how many of the following occurred? (check all that apply)

   I worked with the faculty member prior to library instruction to determine the content of the instruction. ___

   The faculty member has checked with the library to ensure that sufficient materials are available to students in this discipline. ___

   I received a copy of the assignment. ___

   I have provided instruction for this faculty member in the past. ___

   A survey was given to the students in the course to determine their information-seeking behaviors. ___

2. How long will you have to conduct library instruction in this particular class? (check one)

   One hour ___
   One hour and a half ___
   Two hours ___
   Three hours ___

3. Will the faculty member remain in the class during the library instruction? (circle one) Yes No

4. Do you have a formal information literacy program? Yes No

5. Which of the following concepts will you cover in your instruction? (check all that apply)

   Library's online catalog ____

   Library print journals ____

   Electronic online databases (EBSCOhost® ,Lexis®, WilsonWeb®, etc.) ____

Internet searching ____

Internet webpage evaluation ____

Advanced searching strategies ____

Citations ____

6. Of the following concepts which do you believe you need more time to cover comprehensively? (check all that apply)

Library's online catalog _____

Library print journals _____

Electronic online databases (EBSCOhost® ,Lexis®, WilsonWeb®, etc.) _____

Internet searching _____

Internet webpage evaluation _____

Advanced searching strategies _____

Citations _____

7. Does faculty at your institution regularly submit suggestions for materials to be purchased by the library to support their academic program? (circle one) Yes No

8. How many years have you been a librarian at this college? _____

9. How many years have you been teaching library instruction? _____

10. Do you hold an MLS or MLIS from an ALA-accredited program Yes No

[IRB statement of confidentiality]

Librarian Post-Survey

Class No. and Section:_____ Class Name:_____

1. As a result of your instruction, how many of the following occurred? (check all that apply)

   You received a copy of the assignment, if you were not provided with one before instruction. ____

   You received a list of the topics that most students will be researching. ____

   You received feedback from the students regarding areas in which they need additional instruction. ____

   The instructor contacted you for follow-up discussions regarding the assignment. _____

2. Did the faculty member contact the library for additional follow-up instruction for students? (circle one) Yes No

3. Did the faculty member put any materials on reserve in the library for students to use on this writing assignment? Yes No

4. Will the faculty member share with you comments regarding the quality of the papers submitted? Yes No

5. Which of the following concepts are you asked most about at the Reference Desk in regard to student writing assignments? (check all that apply)

   Searching and identifying materials contained in the library's online catalog ____

   Use of library print journals ____

   Use of electronic online databases (EBSCOhost®, Lexis®, etc.) ____

   Internet searching using search engines (i.e. Google®, Yahoo®, etc.) ____

   Internet webpage evaluation ____

   Advanced searching strategies for either the online library catalog or the Internet _____

Correctly citing information resources

6. Do you have any additional comments you would like to share about your experiences in assisting students with research assignments?

[IRB statement of confidentiality].

APPENDIX F: LIBRARIAN SURVEYS

Identifying the Information-Seeking Behaviors of Students in Writing Assignments that Require Students to Use Information Sources

Librarian Pre-Survey

The intent of this research is to identify the information-seeking behaviors used by community college students when using resources to complete a writing assignment. Therefore, I will be surveying college students enrolled in English classes that have writing assignments that include using information resources, the faculty who teach those English classes, and the librarians who provide information literacy instruction.

Three community colleges in Pennsylvania have been identified for participation in this survey. Your college is one of those selected. The survey process will consist of a pre and post-survey. The pre-survey will be conducted at the beginning of the semester and the post-survey will be conducted at the conclusion of the writing assignment. The survey will contain some questions regarding your background, such as faculty status, years as a librarian, and years providing library instruction.

There is no foreseeable risk associated with this project, nor are there any direct benefits to you. **You will be asked to identify yourself on the survey by providing a combination of the first two letters of your last name and the month you were born.** All responses will be kept confidential and results will be kept secure. Your participation is voluntary, and you may choose not to participate in the survey. This study is being conducted

Example:
John Smith born in January=SM01

Librarian ID:

1. Before providing information literacy instruction, how frequently does the following occur? (1– *never*, 2-*occasionally*, 3-*frequently*, 4– *all the time*)

I worked with the faculty member prior to library instruction to determine the content of the instruction.	1	2	3	4
The faculty member has checked with the library to ensure that sufficient materials are available to students in this discipline.	1	2	3	4
I received a copy of the assignment.	1	2	3	4
I have provided instruction for this faculty member in the past.	1	2	3	4
A survey was given to the students in the course to determine their information-seeking behaviors.	1	2	3	4

2. How long do you typically have to conduct library instruction ? (check one)

One hour	___
One hour and a half	___
Two hours	___
Three hours	___

3. Will the faculty member remain in the class during the library instruction? (circle one) Yes No

4. Do you have a formal information literacy program? Yes No

5. Which of the following concepts do you typically cover in your instruction? (check all that apply)

Library's online catalog	____
Library print journals	____

Electronic online databases (EBSCOHost®, Lexis®, WilsonWeb®, etc.) _____

Internet searching _____

Internet webpage evaluation _____

Advanced searching strategies _____

Citations and style formats (APA, MLA, or Chicago) _____

How to organize a paper _____

6. Of the following concepts, which do you believe students would benefit from if given more instruction? (check all that apply)

Library's online catalog _____

Library print journals _____

Electronic online databases (EBSCOhost® ,Lexis®, WilsonWeb®, etc.) _____

Internet searching _____

Internet webpage evaluation _____

Advanced searching strategies _____

Citations and style formats (APA, MLA or Chicago) _____

How to organize a paper _____

7. At your college, for each of the classes teaching English composition please rate the frequency that information literacy instruction is provided?
(1-*never provided*, 2-*provided upon request of the faculty member*, 3-*provided as part of the courses syllabus requirement*)

Developmental English	1	2	3
English Composition I (or course at a similar level)	1	2	3
English Composition II (or course at a similar level)	1	2	3

8. Does faculty at your institution regularly submit suggestions for materials to be purchased by the library to support their academic program? (circle one) Yes No

9. How many years have you been a librarian at this college? _____

10. How many years have you been teaching library instruction? _____

11. Do you hold an MLS or MLIS from an ALA-accredited program? Yes No

12. Do librarians at your college have faculty status? Yes No

Identifying the Information-Seeking Behaviors of Students in Writing Assignments that Require Students to Use Information Sources

Librarian Post-Survey

The intent of this research is to identify the information-seeking behaviors used by community college students when using resources to complete a writing assignment. Therefore, I will be surveying college students enrolled in English classes that have writing assignments that include using information resources, the faculty who teach those English classes, and the librarians who provide information literacy instruction.

Three community colleges in Pennsylvania have been identified for participation in this survey. Your college is one of those selected. The survey process will consist of a pre and post-survey. The pre-survey will be conducted at the beginning of the semester and the post-survey will be conducted at the conclusion of the writing assignment. The survey will contain some questions regarding your background, such as faculty status, years as a librarian, and years providing library instruction.

There is no foreseeable risk associated with this project, nor are there any direct benefits to you. **You will be asked to identify yourself on the survey by providing a combination of the first two letters of your last name and the month you were born.** All responses will be kept confidential and results will be kept secure. Your participation is voluntary, and you may choose not to participate in the survey. This study is being conducted by Barb Zaborowski, who can be reached at 814-262-6425, if you have any questions.

Example:
John Smith born in January=SM01

Librarian ID:

1. As a result of instruction you provided to English composition courses, how many of the following occurred prior to your instruction? (check all that apply)

   You received a copy of the assignment, if you were not provided with one before instruction. ____

   You received a list of the topics that most students will be researching. ____

   You received feedback from the students regarding areas in which they need additional instruction. ____

   The instructor contacted you for follow-up discussions regarding the assignment. _____

2. Did any faculty member who teaches English Composition contact the library for additional follow-up instruction for students during the course of the semester? (circle one) Yes No

3. Did any faculty member who teaches English Composition put any materials on reserve in the library for students to use on the writing assignment that required the use of information resources? Yes No

4. Did any faculty member who teaches English Composition share with you comments regarding the quality of the papers submitted during this semester/term? Yes No

5. Which of the following concepts are you asked most about at the Reference Desk in regard to student English Composition writing assignments that require the use of information resources? Please rank from 1-7 with 1- *being the most asked* to 7- *being the least asked*

Searching and identifying materials contained in the library's online catalog ____

Use of library print journals ____

Use of electronic online databases (EBSCOhost®, Lexis®, etc.) ____

Internet searching using search engines (Google®, Yahoo®, etc.) ____

Internet webpage evaluation ____

Advanced searching strategies for either the online library catalog or the Internet _____

Correctly citing information resources ____

APPENDIX G: IRB APPROVAL

University of Pittsburgh

Institutional Review Board

Exempt and Expedited Reviews

3500 Fifth Avenue
Suite 100
Pittsburgh, PA 15213
Phone: 412.383.1480
Fax: 412.383.1508

University of Pittsburgh FWA: 00006790
University of Pittsburgh Medical Center: FWA 00006735
Children's Hospital of Pittsburgh: FWA 00000600

TO: Barbara Zaborowski

FROM: Christopher M. Ryan, PhD, Vice Chair

DATE: March 15, 2007

PROTOCOL: Identifying the Information-Seeking Behaviors of Students, the Expectations of Faculty and the Role of Librarians in Writing Assignments That Require Students to Use Information Sources in Selected Pennsylvania Community Colleges: A Model for Instruction

IRB Number: 0702095

The above-referenced protocol has been reviewed by the University of Pittsburgh Institutional Review Board. Based on the information provided in the IRB protocol, this project meets all the necessary criteria for an exemption, and is hereby designated as "exempt" under section 45 CFR 46.101(b)(2).

- If any modifications are made to this project, please submit an 'exempt modification' form to the IRB.
- Please advise the IRB when your project has been completed so that it may be officially terminated in the IRB database.
- This research study may be audited by the University of Pittsburgh Research Conduct and Compliance Office.

Approval Date: March 7, 2007