Exploring the Information-Seeking Behavior of the Staff and Students of the Florida Virtual School: A Case Study

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EXPLORING THE INFORMATION-SEEKING BEHAVIOR OF THE STAFF AND STUDENTS OF THE FLORIDA VIRTUAL SCHOOL: A CASE STUDY

By

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A Dissertation submitted to the College of Information in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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This dissertation is dedicated to
my wife, Katie,
and to
our children, Hannah and Ethan.
Without their encouragement and support,
this dream would not have been fulfilled.
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ABSTRACT

Using a case study approach, this exploratory study investigated the manner in which the staff and students of the Florida Virtual School (FLVS) seek information resources and services and whether their information-seeking behavior could be explained by the application of the Bates berrypicking model. Influencing factors studied were integration of information literacy and selected demographics. The context of the case was presented through issues that affect information seeking in a virtual school such as legislative policy, budgetary policy, and accreditation issues. An examination of the literature showed that no previous published research had examined the information-seeking behavior of staff and students in a virtual secondary school setting.

The population included sixteen administrators, all twenty instructional designers, and all 308 full time teachers. In addition, thirty-six English II students in a class containing an open-ended research assignment, were included as part of the population of this study. The FLVS, recognized as a leader in K-12 virtual education and viewed as a critical case, was selected as the setting for this study.

The results of this study indicated that most course designers, teachers and students surveyed seek information using a berrypicking mode except in subject searching, while teachers in the math and critical research and thinking skills departments preferred a linear mode. This study also showed that FLVS director level administrators viewed their responsibility as important in assuring that teachers and students were able to seek out and use information resources and services. Content incorporated into FLVS courses by course designers was often obtained from Internet websites and FLVS purchased resources (i.e., BrainPOP, United Streaming, and SAS inSchool Curriculum Pathways). Likewise, FLVS teachers relied upon teacher- or department-developed knowledge bases, Internet websites, online databases and textbooks when seeking out information resources to supplement the existing centrally created course content. When completing an open-ended research assignment, FLVS students relied upon information resources provided by the FLVS and those available on the Internet even when they also attended a ‘brick-and-mortar’ school with a library. Both the influencing factors and contextual issues studied had an effect on the information-seeking behavior of the staff and students at the FLVS.
Outcomes or impacts of this study include increased knowledge about information-seeking behavior, increased knowledge about the application of the berrypicking model, new knowledge about information-seeking behavior in the virtual school environment, further evidence-based information practices in virtual K-12 schools, and the identification of additional areas for further research about information-seeking behavior in other state sponsored virtual K-12 schools.
CHAPTER I

INTRODUCTION

Through an exploratory study incorporating both qualitative and quantitative methods the information-seeking behavior of the staff and students of the Florida Virtual School (FLVS) are examined using a case study approach. For the purpose of this study the term “virtual school” is defined as “a state approved and/or regionally accredited school that offers secondary credit courses through distance learning methods that include Internet-based delivery” (Clark, 2000, p. i). Likewise, for the purpose of this study the term “staff” is defined as encompassing FLVS administrators, instructional designers/course developers and teachers.

Information behavior is very complex and comprised of several concepts. Wilson (1997), who is considered a pioneer in presenting the concept of information behavior, notes that the following three elements of information behavior must be considered, “the factors that give rise to an individual’s perception of need; the factors that affect the individual’s response to the perception of need; and the processes or actions involved in that response” (1997, p. 39). The last of these three factors encompasses the concept of information-seeking behavior for the purpose of the research being undertaken. The focal point was not on the user’s apparent need for information or on the factors involved in the user’s response to the perceived need, but rather on the actions or processes involved to “acquire information in response to a need or gap” in one’s knowledge (Case, 2002, p. 5).

In this research study the manner in which the staff and students of the FLVS seek information resources and services and whether their information-seeking behavior can be explained by the application, modification, or extension of the Bates berrypicking model are investigated. The berrypicking model is based on the following assumptions:

- The search query is continually changing.
- Searchers may utilize an extensive variety of sources.
- Information retrieved may give way to new ideas and directions to proceed.
- Information is gathered in bits and pieces picked up along the way (Bates, 1989).

Other research studies conducted by Lueg and Bidwell (2005), Brigham and Perron (2004), Barroso, Gollop, Sandelowski, Meynell, Pearce, and Collins (2003) and Kantner
and Keirnan (2003) have used the Bates berrypicking model as a framework or point of context for Internet and bibliographic database searching. Traditional information-seeking models are based on following a process either from beginning to end or in a circular/repetitive set of steps while carrying out a research-based assignment (Kuhlthau, 2003; Eisenberg & Berkowitz, 1988). These models were rejected for this study as likely to be too linear or circular for applicability in the mixed online and virtual environments where no specified beginning and end to the search process exists. Based on preliminary meetings held with FLVS staff members and published literature detailing the FLVS, it appeared that the berrypicking model as proposed by Bates might provide a framework to explore the information-seeking behavior of the staff and students of the FLVS.

Identified outcomes of this study contribute to the body of scholarship on information-seeking behavior by applying an accepted theory to a new environment, i.e., a virtual school. Although not a goal of the study, this research provides additional knowledge about the FLVS and also suggests areas for further research about information-seeking behavior in virtual schools.

The goals of this study include:

- Documentation of how FLVS staff and students seek out and use information resources and services.
- The rejection, acceptance or modification of Bates’ information-seeking behavior model of berrypicking as it relates to the staff and students of the FLVS (Bates, 1989).

Because this research employs an embedded case study methodology, certain issues that may influence the information-seeking behavior and are of interest to the case are explored in order to provide a framework for analysis and possible insights into the case selected. These influencing factors will include the integration of information literacy and selected staff and student demographics (i.e., educational background, experience, gender, age, instructional subject areas and students’ current educational environment). After reviewing the literature and conducting preliminary conversations with the FLVS, the following contextual issues were selected to address:

- Educational/Legislative policy
- Budgetary policy
Accreditation issues

Studying these contextual issues is not the main purpose of this study. However, incorporating these items is important to interpretation of the case.

Significance of the Study

A study involving the information-seeking behavior of the staff and students of a virtual high school is important for several reasons.

Importance of Understanding Information Behavior in an E-Learning Environment

The proliferation of virtual learning and e-schools and a call for information resources and information literacy in school environments support the significance of this study. Current issues raised in the literature point to a need to support e-learning and virtual schools while making sure that teachers and students are adequately trained in the use of online content (U.S. Department of Education, 2005). Blomeyer in a publication of the North Central Regional Educational Laboratory [NCREL] (2002) noted that e-learning “resource configurations…in K-12 environments currently are not recognized, generally understood, or agreed upon” (p. 9). Currently no research studies have been located that speak to the issues raised by NCREL researchers.

The National Center for Education Statistics (NCES) has estimated that there were “328,000 enrollments in distance education courses” (2005a, p. 7) at the K-12 level during the 2002-03 school year. With existing research linking the impact of school library media centers to student academic achievement (Baumbach, 2002; Lance, Rodney & Russell; Lance, Wellborn & Hamilton-Pennell, 1993, 2007) and the fact that 96 percent of secondary schools have libraries and 76 percent have librarians (NCES, 2005b), it is unknown how state sponsored public virtual schools currently offer any type of resources and services to support their faculty and students. State sponsored virtual K-12 schools have “established themselves, and are now leading the way to establishing new and effective models for changing the creation…of education in the United States” (Berge & Clark, 2005, p. 35). This study of information resource, seeking and use in a virtual school in relation to information resources and services may provide practical guidance for the FLVS, its peers and future virtual institutions.
The Prominence of The Florida Virtual School Among Virtual Schools

Through issuing Technology Innovation Challenge Grants in 1995, Congress provided funds for the use of innovative technology that assisted in establishing the initial state sponsored virtual K-12 schools. Starting in 1996 and continuing over a six-year period through 2001, at least a dozen state departments of education created statewide virtual high schools (Clark, 2001, p. i). While state-sponsored virtual high schools were first established in Hawaii and Utah, the third such virtual school was established in the State of Florida. Although the school was originally conceived as two separate online projects in Alachua and Orange Counties during the 1995-96 school year, the Florida Department of Education encouraged the counties to work together and provided the districts with a $200,000 “Break The Mold” school grant. Following intense planning by both counties during the first part of 1997, Florida Virtual School (FLVS) was officially launched in August 1997. With $1.3 million dollars appropriated by the 1997 Florida Legislature, FLVS started with 15 teachers and enrolled approximately 150 students from both Orange and Alachua Counties during the 1997-98 school year (Florida TaxWatch Center for Educational Performance and Accountability, 2007).

With funding totaling $23 million over the past five years, recent changes by the Florida legislature have allowed “the nation’s largest state-run online school...[to]...become part of the Sunshine State’s regular per-pupil funding system” (Hendrie, 2003, p. 1). Of the 22 states with state-led virtual high school programs that existed in 2007, i.e., Alabama, Arkansas, Colorado, Florida, Georgia, Hawaii, Idaho, Illinois, Iowa, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, North Carolina, North Dakota, South Carolina, South Dakota, Utah, Virginia, and West Virginia (Watson & Ryan, 2007, p. 16), only Florida is financially supported through a unique performance-based funding formula. Due to this high level of funding, FLVS has been able to provide courses to any student in the state of Florida free of charge. Only Utah and Hawaii among the other 18 schools are able to offer free courses to in-state students. Of the remaining states, fees range from $150 - $500 per course. The number of virtual schools will likely continue to grow due to such factors as the breakdown of traditional geographic boundaries, technological change, greater accessibility to IT technologies, previously established practices in post secondary distance education,
parental views of traditional schools, and the vested ownership of those involved in these types of schools (Russell, 2004). Viewed as a “leader among K-12 virtual schools in terms of innovation, depth of courses, rigor, and enrollment” (“Florida leads growth,” 2007, p. 1), the Florida Virtual School (FLVS) was identified by the researcher as a critical case for studying the information-seeking behavior of staff and students in the virtual K-12 environment. The FLVS was selected due to the broader relevance (Patton, 2002) that such a critical case could have on other state-sponsored virtual schools.

**The Need for a Model or Theory That is Applicable to Information-Seeking in a Virtual Environment**

A need exists for a model to explain both the information seeking and the use of resources in a virtual environment. The sources used for information retrieval have changed in the virtual environment. Full-text online journals as well as digital directories, encyclopedias and other reference sources traditionally available in libraries have changed the way information is sought out and analyzed. The traditional model of information retrieval (IR) started with a document or document representation (e.g. index, abstract) that resulted in an attempt to match the query with the information need. Bates’ berrypicking model perceives typical search queries as not being static or linear, but evolving with the user commonly gathering information in bits and pieces. Furthermore, the user employs a wide variety of search techniques at any point during the search leading to a greater set of results than could have been achieved by only a single method (Bates, 1989). Therefore this model has been selected to see if it works in the context of the Florida Virtual School.

**Importance of Mediated Information in a Virtual School Environment**

Everhart, author of the research column in *Knowledge Quest* and researcher in the school media field, reported failure in her attempt to identify virtual school library media specialists in any U.S. virtual schools (Personal Communication, November 20, 2004). It is also important to discover what the state-sponsored Florida Virtual School is doing to select information resources and services to support the school, how they are accomplishing this with or without the apparent assistance of a traditional or digital library or librarian and what lessons can be learned from this experience.
Other Factors

The influencing factors documented in this study, i.e., the integration of information literacy, and selected staff and student demographics, along with contextual issues, i.e., educational/legislative policy, budgetary policy, and accreditation issues that were drawn from the Keeping Pace With K-12 Online Learning studies, both raise additional questions and shed light upon the current information-seeking behavior in a virtual school. The results of this research project fill a void and provide a foundation for further research or decision-making. An in-depth look at a virtual school viewed as a leader may assist in the formulation of future models and guidelines.

Statement of the Problem

A thorough examination of the literature concerning virtual schooling at the high school level shows that no one has analyzed the complex and multifaceted issues surrounding students’ and staff members’ information-seeking behavior and use of resources in a virtual school setting and no theoretical or conceptual framework has been applied to this information-seeking behavior environment. While state-sponsored virtual K-12 schools continue to grow and spread across the United States, little understanding exists about how information resources are selected for inclusion in online courses and how these resources are managed and organized. No published study on virtual schools speaks to the issue of how and why instructional designers, course developers and teachers in a virtual K-12 setting select, obtain, and incorporate effective information resources for the curriculum. Nor is there any understanding of how persons associated with virtual schools use or do not use traditional libraries or digital libraries for resource support or whether this is a matter of concern to them. This creates a void in the research and applied literature that needs to be filled and constitutes the problem that drives this study.

Research Questions

The following overarching question is proposed to explore the information-seeking behavior of the students and staff of the FLVS:

How can the manner in which the staff and students of the FLVS seek out and use information resources and services be explained by the application, modification,
or extension of an information-seeking behavior model, conceptual framework, or theory?

In order to provide further insight into this overarching question the following information-seeking behavior questions are proposed to explore this area as it relates to the staff and students of the FLVS:

1. How do FLVS administrators view their responsibility to assure that students and teachers can seek out and use the information resources and services they need to support their learning and teaching?

2. How do FLVS instructional designers and course developers seek out and use the information resources and services they need to assist them in inserting (or integrating) information resources and services into the curriculum?

3. How do FLVS teachers seek out and use supplemental and/or additional information resources from those supplied by the instructional designers and course developers, needed to assist them in providing instruction?

4. How do FLVS students seek out and use the information resources and services they need to support their learning when these are not provided as part of the course content?

The following questions focus on influencing factors related to the information-seeking behavior of the staff and students of the FLVS and responses to these questions are used to assist in analysis of the data collected with the following information-seeking behavior research questions:

1. How is information literacy integrated into courses designed by the FLVS staff and how does this affect the student’s ability to seek out and use information resources and services?

2. How do selected demographics such as educational background, experience, gender, age, instructional subject areas and students’ current educational environment affect the Florida Virtual School’s staff and students when seeking out and using information resources and services?

Finally, the questions below, addressing contextual issues related to the information-seeking behavior of the staff and students of the FLVS, are used to provide further context to support analysis of the questions posed above:
1. How have policies at the state educational and legislative levels affected the ability of the staff and students’ of the FLVS to seek out and use information resources and services?

2. How have budgetary policy issues affected the Florida Virtual School’s ability to seek out and use information resources and services?

3. How have accreditation issues affected the Florida Virtual School’s ability to seek out and use information resources and services?

Assumptions

1. Staff and students seek out information beyond what is provided by the Florida Virtual School.

2. The berrypicking model can explain information behavior in a virtual school.

Limitations

1. Due to the fact that this research is a single case study, generalizations cannot be made beyond the population studied.

2. Any statistical examinations of the data are descriptive only and are limited to this case only.

3. Access to the FLVS student population is limited to a single class that contains an open-ended research assignment module due to research policies established by the FLVS research advisory committee.

4. Follow-ups to the survey instruments are limited to a single follow-up due to research policies established by the FLVS research advisory committee.

5. The research study being undertaken will only serve as a “snapshot” of the current situation.

6. Since a case study often relies upon descriptive information provided by various individuals associated with the case, important details and recollections of past events may be omitted due to problems inherent to memory.

Summary

After careful examination of the research alternatives, an exploratory case study approach was used to examine the information-seeking behavior of the FLVS staff and students. The Bates’ berrypicking model of information behavior was the theoretical framework applied and examined for appropriateness during this study. Based on an
examination of published literature in the areas associated with the information-seeking behavior in virtual schools, the problem arose from a need for research to explain information behavior in this area. Subunits of interest were explored in order to provide a framework for analysis and possible insights into the case selected. While not the main focus of the study, policy issues directly related to the information-seeking behavior at the FLVS were addressed along with an understanding of how information literacy is integrated into FLVS designed courses. Demographics such as educational background, experience, gender, age, instructional subject areas and students’ current educational environment were analyzed for any relationships to the information-seeking behavior of the staff at the FLVS. This study may make a unique contribution to the body of scholarship on information behavior, while also identifying a model or theory to explain information behavior in a virtual school setting in relation to information resources and services and in turn provide practical guidance for the FLVS and its peers.
CHAPTER II

REVIEW OF THE LITERATURE

To substantiate and support the meaning of, the importance of, and the need for this study, theories of information behavior are examined, with emphasis on the information-seeking behavior theory most relevant to the study. The review of the literature begins with an overview of research related to K-12 virtual schooling, followed by an examination of research on the information-seeking behavior in the K-12 environment. Emphasis has been placed on secondary school staff seeking resources in course planning and development and secondary students seeking information resources and services, because the Florida Virtual School (FLVS) is a public school for secondary students. Information literacy, as a specific type of information behavior, is considered only in relation to staff integrating it into the curriculum. In addition, research studies involving the effect of specific demographic data elements on staff information-seeking behavior are discussed. Contextual issues of interest to the case include the research that has been conducted on virtual schools with an emphasis on state-level policy, funding and accreditation standards. These contextual issues are reviewed in order to provide a framework for analysis and possible insights into the case selected. The review ends with a summary of the problem in relation to the literature covered by the current study.

Research and Virtual Schools

Research in the field of virtual K-12 distance education has only occurred over the past five years (Cavanaugh, Gillan, Kromrey, Hess and Blomeyer, 2004), limiting the body of literature from which to draw. Blomeyer (2002) supports the need for further research involving the “use of online learning in K-12 learning communities” (p. 10). In order to make clear the importance of the contextual components of the case, this section of the literature review focuses on the evolving virtual school movement and existing virtual school research studies published.

The Evolving Virtual School Movement

FLVS and other distance education initiatives for secondary students evolved out of “paper and pencil” types of correspondence courses. These types of courses have been offered at the high school level by various continuing education divisions of universities
across the country dating back to 1911 at the University of Missouri-Columbia. As technology evolved the use of telecourses delivered via broadcast TV, cable television, videotape and satellite served as a primary method for delivering instruction at the high school level. With the evolution that has occurred in computer-based technologies and the advent of the Internet, virtual schooling has become the “next wave” of distance education (Clark & Else, 1998).

Only 25 virtual K-12 schools existed in 1995, but that number almost doubled by the 2000-01 school year, bringing the total number of schools identified by Clark (2001) to 43. Clark’s sample only recognized schools that were in operation during the 2000-01 school year, had acquired either regional or state accreditation and offered part of their curriculum via the Internet. The schools identified fall under one of the following six types of profiles: (a) state-sanctioned, (b) college and university-based, (c) consortium and regionally based, (d) local education agency-based, (e) virtual charter schools, and (f) private virtual schools. Of the 43 schools identified by Clark in 2001, only 12 were considered “virtual schools officially recognized by the governor, legislature or state education agency as ‘the’ statewide virtual school” (Clark, 2001, p. 11).

A study conducted by The Peak Group (2002) identified 88 virtual school programs based on the following criteria: the Internet served as the primary means of delivering instruction, students in grades K-12 were the main focus, the reach of the program was greater than that of the traditional school, either the virtual school or the affiliated school district granted credit for courses taken, and the school was accredited. Based on this study, it is estimated that 178,500 K-12 students enrolled in an online course during the 2001-02 school year and the study projected that by the 2004-05 school year as many as one million K-12 students would enroll in an online course. A recent study by Picciano and Seaman (2007) estimates that the 2005-06 virtual K-12 enrollment was between 500,000 to 600,000 students and states that the one million students projected in The Peak Group (2002) study were high. The estimate of 500,000 to 600,000 students by the year 2005-06 may only account for a small fraction of the 47.2 million students in the U.S. K-12 public education system as of 2001 (Hoffman, 2003). Nonetheless, the financial investment in virtual school education is huge; Merrill Lynch
estimates that nearly one billion dollars was invested in the K-12 digital learning market just between 1999 and 2000 (“The Explosion,” 2000).

**Existing Virtual School Research Studies**

In 2004, the Colorado Department of Education, Illinois Virtual High School, Learning Point Associates, and the Wisconsin Virtual School jointly funded and published *Keeping Pace with K-12 Online Learning: A Snapshot of State-Level Policy and Practice*. This document assisted in identifying growth patterns in online education at the K-12 level, while also noting that a clear lack of guidance at the state level was evident in relation to the development of online educational practices. Based on this initial policy study and the need for further research in this area, the Florida Virtual School, Clark County School District, Illinois Virtual High School, Learning Point Associates, and the Virtual High School located in Massachusetts joined together to fund and guide a second study in 2005. This second study sought to extend the analysis from the original 11 states to include all 50 states, continue to follow the trends and further developments identified in the original 11 states, and identify ways to shape online education positively through future laws and policies (Watson, 2005). The second “Keeping Pace” study chose to look at state-level policy, budget, and accreditation issues across the 50 states. This second policy study found that state-level policies to govern online schools still did not exist in 50% of states. In addition, state funding and determining how best to cover costs incurred by offering online courses continued to be a major problem. Finally, issues also existed in the area of accreditation standards, which were needed to effectively evaluate the successes and shortcomings of online K-12 schools.

Much of what is known in the area of virtual K-12 schools has been published in paraprofessional journals, newspapers, and various websites, but often focuses on school data (i.e., number of schools, student enrollment figures, number and types of classes offered) and is anecdotal in nature. Since 1998 research reported in dissertation studies has begun to appear in this area and provides a starting point for further review. A search of ProQuest Digital Dissertations online identified 10 dissertations that have been conducted involving various aspects of online K-12 schools since 1998 that are discussed below.
Of the 10 dissertations identified, elements of the study conducted by Augustine-Shaw (2001) appear to support issues identified in the “Keeping Pace” studies. Augustine-Shaw looked at leadership perspectives and policy issues related to the implementation of a virtual school in the state of Kansas. Based on interviews and surveys with purposively selected superintendents and Kansas State Department of Education leaders, funding was identified as a key area “central to the adoption and implementation of the virtual school” (Augustine-Shaw, 2001, p. 220). In addition to funding issues, further findings indicated a need for establishing state and local policies to guide the implementation process.

Three of the 10 dissertation research studies located were conducted using the Florida Virtual School. These studies have few commonalities and address a range of issues from students with learning disabilities in the virtual school environment (Smouse, 2005), social aspects of students enrolled in online physical education courses (Ware, 2005), and the life experiences of teenage girls in the online environment (Bethea, 2002). The final six studies have investigated various aspects of the virtual K-12 school program, but also have few factors in common. Carpenter (2004) focused on topics involving the impact of online learning on New Mexico virtual high school students, while Tunison (2003) looked at the nature of instruction and community in a virtual high school. In addition, Heidlage (2003) examined Catholic high school principals to better understand their perceptions and use of virtual school courses to expand the traditional school curriculum. A fourth study conducted by Clemens (2002) detailed the perspectives of home school parents’ on virtual public schools, while the final two studies were conducted in Canada and focused on the establishment of four virtual charter schools located in Alberta, Canada (Smith, 2001) and virtual schooling at the middle grades (Litke, 1998).

**Information-Seeking Behavior**

The study of information behavior can be traced back to the 1950s. Over the past 56 years, various researchers and theorists have attempted to define exactly what is meant by information behavior. In 2005, Fisher, Erdelez, and McKechnie collected more than 70 theories in their book entitled *Theories of Information Behavior* (2005). A number of these focus specifically on information-seeking behavior, as defined by Wilson (1997)
and discussed in Chapter 1. Among these theories, Kuhlthau’s information search process has emerged as the most frequently applied in the K-12 environment. Although Kuhlthau’s theory has been applied in the online environment (1997), Marcia Bates’ berrypicking theory appears to more accurately explain online information seeking when looking at multiple groups of people (i.e., instructional designers/course developers, teachers and students) who are seeking information for different purposes.

**Brief Overview of Information-Seeking Theories**

Definitions of information-seeking behavior, proposed by leading figures in the field, fall into two major areas consisting of purposive activity (i.e., information-seeking) and passive behaviors encompassed under the broader term of information behavior (Case, 2002). Purposive activities involve the individual actively trying to acquire information, whereas an individual may through passive means take in information while making no attempt to seek out information. Active modes of seeking information include searching and browsing, while passive types consist of monitoring and simply being aware. These active modes of information seeking may be either directed, or undirected depending on whether the user seeks out information for a specific reason or is randomly exposed to information (Bates, 2002).

Of the 70 theories of information behavior identified by Fisher, Erdelez, and McKechnie (2005), Carol Kuhlthau’s information search process, an example of a purposive activity theory, has been applied the most extensively of any of the theories in the K-12 school setting. Originating from an initial study of secondary school students in 1983, Kuhlthau’s information search process has been empirically tested over the past two decades through multiple studies involving diverse populations. Based primarily on the personal construct theory of George Kelly, the major theorist who influenced Kuhlthau, the information search process portrays “information seeking as a process of construction” (Kuhlthau, 2005, p. 230). Through initial studies, Kuhlthau was able to identify the following six stages that people proceed through when searching for information:

1. **Task Initiation.** At this point the person realizes that information will be required to finish the assignment.
2. **Topic Selection.** During this stage the person is trying to select and identify a topic to investigate.

3. **Prefocus Exploration.** The purpose of this stage is to search for information in order to form a focus.

4. **Focus Formulation.** Based on the information encountered, the task is to form a focus.

5. **Information Collection.** During this stage the person is gathering information related to the focused topic.

6. **Search Closure.** The final stage of the process, the person is completing the search process and is preparing to present the information (Kuhlthau, 2005).

These stages are accompanied by feelings (i.e., uncertainty, optimism, confusion, frustration, doubt, clarity, confidence, and relief), thoughts (i.e., ambiguity, increased interest, and specificity), and actions (i.e., seeking relevant and pertinent information) that users experience during various stages of the search process.

Kuhlthau’s information search process assists the researcher in describing common patterns experienced by users in the process of seeking information involving a complex assignment. The information search process also relies on the assignment under investigation to have a distinct starting point and ending, while requiring “construction and learning to be accomplished” (Kuhlthau, 2005, p. 230). While stages in Kuhlthau’s information search process may be repeated or arranged in a different order, these stages are most often presented and conducted in a linear fashion that does not seem to explain information seeking in a constantly shifting, hypertextual online, non-linear environment. Although Kuhlthau’s process has been applied to Internet-based searches, it does not explain flexible or less structured searches.

While Kuhlthau’s theory has worked well in an environment in which a complex assignment with distinct starting and end points exist, another of the 70 theories of information behavior identified by Fisher, Erdelez, and McKechnie (2005), Bates’ theory of berrypicking, seems to explain more accurately the way in which people seek information in a less structured manner, more appropriate to tasks that do not have specific beginnings and endings and which may take place in a hypertextual environment such as a virtual school. Bates’ theory, which also focuses on purposive activities of
information seeking, has been utilized in both the off-line and online environments. Although not used as extensively as Kuhlthau’s in the K-12 environment, it has been applied to explain the information-seeking behavior of school staff during course development. Bates’ theory of berrypicking is explained in detail below.

**Bates’ Berrypicking Model**

Bates’ berrypicking model started as a theory of information seeking before the online world grew up but has become the most important theory for examining information seeking in the online environment also. Fisher, Erdelez and McKechnie (2005) chose Bates as the most prominent theorist in their volume on information behavior theories. This part of the literature review provides information outlining the concepts and assumptions contained in the berrypicking model along with a review of prior research undertaken that has incorporated the berrypicking model.

**Background and design.**

During the 1970s and 1980s as new and more complex online systems were created, researchers began to recognize the need for a more advanced way of understanding the search process and began publishing literature detailing various search techniques (Armstrong & Large, 1988; Bates, 1979a & b, 1981; Harter, 1986). The development of online public access catalogs (OPAC) in the 1980s shifted the search process from one where librarians would perform a single search on behalf of patrons in databases such as DIALOG and LEXIS-NEXIS to one that allowed the patron to formulate their own search process. Drawing upon this previous body of literature, Bates maintained that the prior method of single query searching did not always work and with the advent of more highly developed OPAC systems researchers could begin to develop a system designed around the way in which people truly search.

Bates laid the groundwork for this new model of searching in an article entitled “The Design of Browsing and Berrypicking Techniques for the Online Search Interface” (Bates, 1989). The berrypicking model was developed by Bates to assist in more closely identifying the true behavior of information searchers and differs from the traditional model of information retrieval (IR) in four areas:

1. **Nature of the query.** Unlike the traditional model of IR where the query was viewed as a single instance of the user’s problem, Bates identifies the search
query as one that is true to life while constantly changing and evolving throughout the course of the search process.

2. *Nature of the overall search process.* According to Bates “at each stage, with each different conception of the query, the user may identify useful information and references” (1989, p. 410). This differs from the traditional IR model where a single retrieved set completes the search process. Bates’ view of the search process involves users selecting individual bits and pieces of information throughout the course of the constantly evolving search. Thus Bates expresses this type of information retrieval as berrypicking based on the idea of picking berries from bushes scattered about in a forest.

3. *Range of search techniques used.* While the technique of subject searching was viewed as the primary search strategy employed by the traditional IR model, Bates identifies through the berrypicking model several strategies that users often select. Along with *subject searching,* users also make use of *footnote chasing* (i.e., following footnotes located in materials of interest to the researcher in a backwards pattern), *citation searching* (i.e., using a citation index to locate future materials that cite the work of interest), *journal run* (i.e., incorporating the journal that is central to the research being undertaken by browsing the table of contents pages for multiples volumes of the same journal), *area scanning* (i.e., browsing materials located in the same vicinity as other items of interest previously located), and *author searching* (i.e., locating other materials by the same author that are pertinent to the research being conducted) (Bates, 1989).

4. *Information “domain” or territory where the search is conducted.* The process of searching through the various techniques listed above supports the nature of the berrypicking model as users shift from source to source while adapting the particular strategy to meet their need. This differs from the classic IR model of a single retrieved set as the search strategies are constantly changing along with both the content and form of the sources being searched in the berrypicking model.

   In summary, the berrypicking model as outlined by Bates is based on the following assumptions:
• The search query is continually changing.
• Searchers may utilize an extensive variety of sources.
• Information retrieved may give way to new ideas and directions to proceed.
• Information is gathered in bits and pieces picked up along the way (Bates, 1989).

Since Bates published the article detailing the berrypicking model in 1989, authors have cited the work 176 times according to the “ISI Web of Knowledge” citation database (isiknowledge.com). Researchers have used the concepts and ideas proposed by Bates to address issues in areas including information-seeking behavior, interface design, information retrieval and search tactics to name a few.

Research incorporating the model.

Research articles incorporating the berrypicking model have been published in a range of disciplines from nursing to recreational planning (Brigham & Perron, 2004) and commercial product development. Lueg and Bidwell (2005), for example, examined the similarities between berrypicking and real world wayfinding. Wayfinding is defined as "the ability to find a way to a particular location in an expedient manner and to recognize the destination when reached" (Peponis et al., 1990) and is viewed by Lueg and Bidwell as being “distributed in time and space but its success involves to a large extent…physically moving the body, re-orientating the body, adjusting eyes to different light conditions” (2005, Abstract section, para. 1) and is defined as embodiment. After examining these interactions from an information-seeking point of view, results indicated that there might “be a lack of research on the relevance of embodiment to information behavior research” (Conclusion section, para. 1).

An in-depth use of berrypicking was reported by Barroso et al. (2003) in their investigation to develop the procedural, analytic and interpretive techniques to conduct qualitative meta-synthesis projects, using studies on women with HIV infection as the population in which to test the method. During the process subjects learned to use bibliographic databases, including choosing which databases to search, learning about the issues with each database, creating lists of search terms and refining inclusion criteria concerning which studies to include in the meta-synthesis. The investigators found the strategies of berrypicking to be useful. They did not just modify the search terms to get a better match, but the query itself was continually shifting closer to the
actual behavior of the searchers, just as a berrypicker would meander through the bushes, looking for clumps of the ‘best’ berries. The six strategies that are used in berrypicking were successfully used during their search and retrieval work to obtain significant qualitative studies of women with HIV infection.

Finally, in designing field research for commercial product development, Kantner and Keirnan (2003) asked a group of usability specialists to code users’ search methods according to goal categories (known item, exploratory, existence, and comprehensive) and according to style (linear vs. berrypicking). They found berrypicking to be more helpful than the linear style to assist in product development.

**K-12 School Staff Members**

While there has been substantial research conducted on various groups of high school educators, little research exists detailing the information-seeking behavior of this group. The majorities of studies identified were conducted from 1973 to 1987 and did not address the electronic environment due to the time period in which they occurred. Given the population of this study, it is significant to present an analysis of what is currently known about the information-seeking behavior of secondary school educators.

Early studies conducted by Hiland (1973) and Matheson (1979) during the 1970s on teachers in secondary schools provide a starting point from which to gain a better understanding of what is currently known about the information-seeking behavior of secondary school educators. Based on these two studies, findings indicate that in order for teachers to be able to carry out their teaching responsibilities they need access to a variety of information resources. Of the types of information sought by teachers participating in the two studies, everyday information of a factual type was most needed and was most often subject oriented. Matheson (1979) was able to identify three major purposes for why secondary teachers seek information. These three purposes included locating new materials, developing new materials and locating facts for classroom use. Secondary teachers included in these two studies often relied on books, textbooks, materials in their offices and conversations with fellow teachers when seeking information and felt that information resources should be “authoritative, accurate, reliable, and objective” (p. 91). Educators surveyed by Matheson noted that a lack of time played an important role in their ability to seek out and obtain information.
While studies conducted during the 1980s still do not address the information-seeking behavior of secondary teachers in the electronic environment, they do serve to reinforce the findings of previous studies in the field. The major purposes identified for seeking information focused again on finding fact-based information for classroom use, curriculum development and the creation of new materials. Secondary teachers studied by Davis (1987) relied on school-based resources to access the information they needed as opposed to seeking outside sources of information. Based on the four studies identified during this time period (Davis, 1987; Holland, 1980; Holmes, 1987; Ristow, 1987) it appears that secondary teachers rely on established routines for finding information and rely heavily on traditional textbooks and or colleagues as sources of instructional-design information.

Several studies have focused on identifying factors that may affect the information-seeking behavior of secondary educators. Attributes such as access to resources or subject domain may affect the information-seeking behavior of an information use environment (IUE) (Taylor, 1991). Teachers in a certain IUE (e.g., math, science, history) frequently have certain mental models of how to locate, evaluate, and use information (Marchionini, 1997) that may allow them to solve their problem in a unique way.

Research conducted by Small, Sutton, Eisenberg, Miwa, and Urfels (1998a) investigated “how and why PreK-12 educators use information from the Internet for instructional design purposes” (p. 401). The central research questions posed by Small et al. sought to identify the various types of instructional resources available on the Internet; specific types of resources that PreK-12 teachers make use of when planning instruction; understanding the types of information searched for on the Internet by educators who are involved in instructional planning; and how educators viewed the various aspects of their own Internet searches along with the search process. Through the use of content analysis and an electronic questionnaire researchers were able to determine that lesson plans were the most often sought out resource on the Internet. Results also indicated that educators involved in the study used “a variety of sources when looking for information to design their lessons, preferring the ‘berrypicking method’” (p. 407). Small et al. found that information/technology educators placed more importance on electronic resources (i.e.,
electronic databases, websites, etc.) than other groups identified and felt that this was due to their contact with these types of electronic resources when performing assigned job duties. Outcomes generated by this study were used to assist in the design of the Gateway to Educational Materials (GEM) Project, providing a website for educators to access educational materials identified as important by participants in this study.

Care must be taken when comparing findings of studies because of differences in populations, methodologies and other varying factors. Important themes identified through a review of these studies indicate a heavy reliance upon textbooks and fellow educators as sources of information, while secondary teachers most often sought out fact-based information using school-based resources to access the information in a pre-electronic environment. Based on the single study identified that addressed the electronic environment, educators seem to use a variety of websites when searching for relevant lesson plans and tend to prefer the berrypicking method. Finally, differences were identified between various groups of educators (i.e., Science, English, History, Technology) and the importance that they place on various types of resources that they have access to.

**Student’s Selection and Use of Resources**

The online environment has transformed what was once a relatively small amount of materials previously available to high school students in the traditional school into a vast and almost limitless number of resources now available via the Internet. Additionally, the development of the virtual school presents a unique situation combining students from various school settings (i.e., home-schooled, public and private). It is important to present an analysis of what is currently known about how secondary school students seek resources.

Research focusing on the information-seeking behavior of adolescents has followed three major paths according to Todd (2003). Through an analysis of existing research in the field, Todd has identified these areas as: research related to adolescents learning by way of the school library, adolescents and the Internet, and research focusing on adolescents’ everyday information-seeking. The two former themes include research that is mainly in formal situations, i.e., the school, with imposed queries as defined by Gross (2006). Although most of these studies focus on students’ capabilities at
conducting research (Liebscher & Marchionini, 1988; Neuman, 1995) and the details of
the research process (Kuhlthau, 1983, 1991), a few do focus on the type of resources
from which secondary students seek information.

In 2004, Chelton and Cool collected the important studies representing various
ways that young adults seek, process and use information in their book entitled Youth
Information-Seeking Behavior (2004). Many of the early studies identified by Chelton
and Cool (p. 27) in the 1980s tend to provide anecdotal accounts that focus on the use of
information retrieval systems by youth in school libraries. Other early use studies
(Tenopir, 1986; Pruitt & Dowling, 1985) focused on the use of online retrieval services
such as Dialog by high school students and found that retrieval services were most often
used in the completion of projects in current affairs and social sciences. In another study
that focused on the expanding use of online information systems, conducted towards the
end of the 1980s, Clyde and Kirk (1989) found that online information systems were
being incorporated into a variety of areas of the curriculum. Schools participating in
Clyde and Kirk’s study noted that faster access to online information and the currency of
the information available online were the primary benefits of using this type of resource.

Later studies conducted during the 1990s began to look at new types of
multimedia resources and how students made use of such materials. In a study conducted
by Small and Ferreira (1994) students tended to favor the use of multimedia resources
over print resources based on “accessibility, accuracy, comprehensiveness, consistency,
controllability, currency, ease of use, organization, reliability and understandability” (p.
100). In a study conducted by Latrobe and Havener (1997) the information-seeking
behavior of 18 eleventh-grade honors math students were explored. Through the use of a
survey instrument and individual structured interviews, information was solicited from
the eleventh-grade honors students that focused on the types of information sources that
they consulted. The survey instrument employed in this study contained 24 sources of
information grouped into the following five categories: organizations, personal
experience, media (print and non-print), other people, and classroom instruction. Students
reported that they sought out information from other people (i.e., peers, teachers and
parents) over other sources of information such as books, magazines, libraries and
electronic sources. The least used sources of information reported in the study were
videocassettes, business-related sources of information, and community/governmental organizations.

A more recent study conducted by Levin, Arafeh, Lenhart, and Rainie (2002) focused on how high school students used the Internet in and for school purposes and why these students used the Internet for library and reference materials. Based on the results of this study, students in the traditional school setting appear to favor the use of the Internet as a resource over textbooks and other materials contained in their local public and school libraries. Results indicate that students prefer Internet resources because they can be accessed from home 24 hours a day, and 365 days a year. In addition, students feel that their local public and/or school library contain limited multimedia materials for inclusion in course assignments, require them to stand in line to check out materials and pay to copy materials needed to complete class projects. When questioned about how students most often seek out resources online, the study found that students used commercial search engines provided by Google, Yahoo, and Ask.com.

In 2007, Chelton and Cool collected another set of important studies that provide a snapshot of research associated with the various ways that young adults seek information in their book entitled *Youth Information-Seeking Behavior II* (2007). Of the studies collected by Chelton and Cool, Valenza’s (2007) study has the most direct correlation to the information-seeking behavior of high school students and the virtual environment. Through a focus group investigation involving 26 public high school students, Valenza sought to better understand how school virtual library website interfaces “affect student information-seeking habits” (p. 208). Results indicated that students valued the school library website and used it while at school, in the evenings at home and on weekends. Students studied were identified as sophisticated users of the school library website and tended to avoid popular search engines like Google in favor of databases and resources located on the school library website. In addition, the students also reported issues in selecting the proper database to match their research assignment and problems in developing a search query to retrieve the most focused results. Finally, students reported evidence that the school library website had improved their research skills and prepared them to handle future research assignments that they might encounter in the college setting.
No studies could be located that address how these various types of students in the virtual school setting seek out information resources to complete an open-ended research assignment. While the issue of how students seek out resources in this type of setting is unknown, another area of equal significance is how information literacy is integrated into the online curriculum, which will be reviewed in the following section.

**Influencing Factors**

There are several factors affecting information-seeking behavior that have been identified in the literature. The two selected as most important for this study are information literacy as it relates to staff integrating it into the curriculum, and the effect of specific demographic data elements on staff information-seeking behavior. These two areas are discussed below.

**Information Literacy**

It is important to understand the difference between the concepts of information-seeking behavior and information literacy. While the steps in either process may be similar, information-seeking behavior deals with steps followed physically by an information seeker, whereas information literacy takes into account the knowledge needed to use the steps in the former process effectively (Seneviratne, 2004). Information literacy also includes more than just information-seeking behavior as it incorporates the ability of the user to recognize that there is a need and to formulate questions intended to gather the information needed. The concept of information literacy also includes the aspects of evaluation along with the appropriate and ethical use of the retrieved information (“Association of College,” 2001).

To provide a framework for discussion of the literature in this area, a brief background on information literacy is presented, followed by an analysis of existing research related to the integration of information literacy. This section concludes with a look at information and communication technologies (ICT) literacy, along with what is currently known about this subset of information literacy in relationship to the virtual school environment.

**Background.**

Research in the area of information literacy has been evolving for several decades. Paul Zurkowski, who at the time served as President of the Information Industry
Association, first introduced the term “Information Literacy” in 1974. Zurkowski, in a report to the National Commission on Libraries and Information Science, noted “people trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information-solutions to their problems” (1974, p. 6). Also suggested in the report was the establishment of a nationwide program that would assist in achieving universal information literacy over a ten-year span of time. The introduction of this term in 1974 sparked wide interest in the library science academic community and more specifically those in the area of school library media.

While the term information literacy had been introduced in 1974, it was not until 1989 that the American Library Association (ALA) Presidential Committee on Information Literacy published a final report containing the definition of information literacy that is commonly referred to in the literature today. The report states, “a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (American Library Association Presidential Committee on Information Literacy, 1989). Although various individuals (Doyle, 1992, 1996; McClure, 1994) and organizations (Association for Teacher Librarianship in Canada [ATLC] and Canadian School Library Association [CSLA], 1997) around the world have developed many definitions since the committee’s report was published, they all seem to be derived from the 1989 ALA definition.

As the area of information literacy has matured, various models have been developed to assist educators in integrating information literacy skills into the curriculum. One of the most popular and widely used of the information literacy models is the Big6 approach developed by Mike Eisenberg and Bob Berkowitz (1990). The Big6 approach includes a unified set of information and technology skills that are comprised of the following six stages: task definition, information-seeking strategies, location and access, use of information, synthesis and evaluation. This approach is seen as being flexible and adaptable over a wide range of educational settings and grade levels, while providing an approach to assist in integrating information literacy instruction into the curriculum (Lowe & Eisenberg, 2005).
Integrating information literacy.

Information literacy, as noted earlier, involves the recognition of when information is needed and the ability to locate, evaluate, and use needed information in an effective manner (“American Library Association,” 1989). While the literature is replete with studies touting the importance that information literacy should play in the educational setting, and the equal importance of integrating it across the curriculum rather than trying to teach it independently, few research-based studies exist that address the issues, impact or learning outcomes of integrating information literacy instruction into the curriculum. Todd (1995) conducted the initial study in this area while exploring the impact of integrating information literacy skills into the curriculum with 14-year-old low achieving science students. Students in the treatment group received specific instruction in the information-seeking process in tandem with the prescribed curriculum, while the control group only received the traditional science curriculum less any information-seeking instruction. The results of this study found that integrated information literacy skills, as implemented with the treatment group, appeared to have a significant impact on the students’ ability to use a wide range of information skills to address specific information problems. In a later study conducted by Hara (1997), information literacy skills were withheld from one-group of students in grades four through six and taught in both an integrated and isolated format with the remaining two groups of students. Again, students who received information literacy skills through an integrated approach were found to be most effective. The results of these two studies appear to support “research in other areas of education [that] report the same finding any time skills and content are merged” (Loertscher & Woolls, 2002, p. 65). Although Loertscher and Woolls state this, they provide no research involving other areas of education to support this statement.

Possibly based on confidence in these original studies conducted, concentrated work has been done to extend the integration of information literacy skills into K-12 state curriculum standards. In 2003 a task force comprised of Florida district media supervisors and Florida Department of Education staff members developed a document entitled Information Literacy: Florida’s Library Media/Curriculum Connections that contains the Florida student information literacy descriptors. This document was developed to assist school library media specialists in integrating information literacy
into the curriculum by correlating national information literacy standards, as outlined in *Information Power: Building Partnerships for Learning*, with both information literacy skills identified by the task force as critical for Florida Students and the Sunshine State Standards. Many states and school districts have also correlated information literacy standards with models such as the Big6 to existing K-12 curriculum standards. Eisenberg and Wurster (2002) aligned the Florida Sunshine State Standards with the Big6 in the subject area of language arts. While courses designed by the Florida Virtual School (FLVS) are developed from the Sunshine State Standards and aligned with standards developed by subject area professional organizations at the national level (Berge & Clark, 2005), no research studies have been located that address the integration of information literacy or subsets of information literacy (i.e., Information and Communication Technologies (ICT) literacy) into the K-12 online curriculum in Florida or elsewhere.

**Information and communication technologies (ICT) literacy.**

In January 2001, the Educational Testing Service (ETS) brought together leaders in the fields of labor, government, education and the private sector to discuss the relationship between Information and Communication Technologies (ICT) and literacy. As a result of this meeting, the panel defined ICT literacy as the use of “digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society” (Educational Testing Service, 2002, p. 2). The panel determined that ICT literacy would serve as an important skill needed by citizens in order to function in an ever-increasing technological climate. Based on a comprehensive review of existing literature detailing the effects of distance education on K-12 students outcomes, Cavanaugh, Gillan, Kromrey, Hess and Blomeyer (2004) note that one of the strengths “of virtual schools is their unique capability for immersing students in information and communication technologies (ICT)” (p. 22) and their ability “to bridge the access divide by providing computers to students” (p. 23). In addition, Cavanaugh et al. (2004) see virtual school students as being important to future employers due to their ICT skill set which could lead to a stronger demand “for data on effective virtual schools as more are developed worldwide” (p. 23). Currently, companies such as Learning.com, Educational Testing Service (ETS), K to the 8th Power, and Certiport Inc. are providing technology literacy
assessment tools to assist schools in determining the level of their students’ ICT skills (Ascione, 2006).

While few research studies have addressed the area of information literacy integration, the results appear to point towards integration as opposed to isolation with recent emphasis particularly on ICT skills. Viewed as another possible influencing factor, demographic areas identified in the literature are discussed in further detail below.

**Demographics Related to Information-Seeking**

Studies have correlated the following demographics with information-seeking behavior: educational background, experience, gender, age, and instructional subject areas.

In a study examining the work-related information-seeking behaviors of both professional and managerial university staff, Wilkins and Leckie (1997) reported that they found no correlation for years employed, but level of education produced statistically significant results. Cross-tabulations performed on demographic data collected found that users “with master’s degrees and Ph.D’s considered themselves to be library users, used the library more frequently, and used LibNet” (p. 569). While analyzing data concerning Americans seeking health care information on the internet, Tu and Hargraves (2003) reported that “information seeking rises sharply as the level of education increases: 55% of people with a postgraduate education sought health information, compared with only 25% of those without a high school diploma” (p. 2). They also found that men are less likely to seek health information on the Internet than women.

Gender and age were also relevant issues when Marcella and Baxter (1999) reported on the information needs and information-seeking behavior of a national sample of the population in the United Kingdom, with special reference needs related to citizenship. They were able to identify “many significant variables, in terms of age, gender, [and economic] status” (p. 159). Findings revealed that young people were less sure of the importance of being able to access information. Interestingly, in the public libraries, the percentage of male respondents was 48.9% compared to 50.3% female, suggesting a far smaller difference in library use by gender than that traditionally expected. In addition, Stenmark (2005) studied information seeking in organizations
employing an intranet and found that the motive for choosing a particular information source appears to be gender related.

Finally Small, Sutton, Miwa, Urfels, and Eisenberg (1998b) collected various types of demographic data including the instructional subject areas of the respondents and level of experience while analyzing the information-seeking behavior of PreK-12 teachers involved in instructional planning. Differences were identified in the information-seeking patterns of the various instructional subject area groups. Demographics detailing the experience level of the study participants “revealed that experienced educators often rely on established routines for finding information” (p. 212). This result was consistent with previous research conducted by Davis (1987), Holland (1980) and Ristow (1987).

Although only one study could be located that specifically addresses demographic information related to K-12 educators (Small et al., 1998b), other related studies reviewed above appear to show that differences may exist based on educational background, experience, gender, age, and instructional subject areas. No studies could be located that address differences that may or may not exist that correlate students’ current educational environment (i.e., public, private, or home-schooled). While this portion of the literature review has focused on aspects of staff in the virtual school environment, the next section will describe what is currently known about student use of resources in the virtual school setting.

Following this review of influencing factors and related elements, the literature review will now turn to research related to contextual issues in the virtual school environment. The Keeping Pace with K-12 Online Learning: A Snapshot of State-Level Policy and Practice 2007 study, both the most recent and the most comprehensive, emphasized policy, budget, and accreditation issues across the 50 states. These issues are examined more closely in the section below.

**Contextual Issues**

While not the primary focus of this research study, the following areas of interest may influence the case and should help provide context for the current situation. The issues chosen are related because they are important to the environment in which the case is being studied and are likely to impact the research being undertaken and because they
reflect the areas of major concern in other case studies to date. This section of the literature review centers on the following contextual areas of interest to the case: state educational/legislative policy issues, funding policy issues, and accreditation issues, summarizing the important background in these areas in relation to the Florida Virtual School (FLVS).

**State Educational/Legislative Policy Issues**

Despite the fast growth of virtual schooling around the country, very little has been published in the area of policy documents at the state level. While the virtual school community continues to grapple with issues of tracking student achievement, course quality, the initial cost of providing online courses and the best way to cover such costs, policymakers at the state level have often taken a very conservative approach (Watson, 2005). Similar issues published by the National Association of State Boards of Education (NASBE, 2001) predicted that K-12 virtual schooling would outpace the ability of state policymakers in handling these types of problems in meaningful ways. The purpose of this section of the literature review is to detail what is known, based on current documents published, about state level policy as it directly relates to the FLVS.

**House bill 1533.**

Although the FLVS offered courses on a state-wide basis in 1997, it was not until 2001 that the Florida House of Representatives passed House Bill 1533 officially establishing the school in state law and placing it under the supervision of the Commissioner of Education’s Office of Technology and Information Services. House Bill 1533 states that the mission of the FLVS is “to provide students with high-quality technology-based educational opportunities to gain the knowledge and skills necessary to succeed in the 21st century” (HB 1533, 2001, p. 53). Based on legislative mandate set forth in House Bill 1533, priority is given to:

1. Students who need expanded access to courses in order to meet their educational goals (i.e., homebound, inner-city and rural high school students).
2. Students seeking accelerated access in order to obtain a high school diploma at least one semester early (HB 1533, 2001, p. 53).

Further accountability is placed on the FLVS board of trustees in House Bill 1533 to develop appropriate means for assessing the effectiveness and efficiency of services
provided that encourage seamless articulation, maximum access, and student achievement (HB 1533, 2001).

**Funding Policy Issues**

An issue that has risen as state-sponsored virtual schools have spread, is who should pay? This issue not only affects the virtual school, but ‘brick-and-mortar’ schools in the states that have already established an online program. Cavalluzzo and Higgins (2001) note that the issue of who pays to cover the costs of running a virtual school can affect “experimentation, acceptance, and level of use.” Unfortunately schools such as the state-sponsored New Mexico virtual school have already closed due to financial problems and lack of proper funding mechanisms at the state legislative level (Carpenter, 2004; Clark, 2001).

In a study conducted by The Peak Group (2002), findings indicated that fees charged to students was the number one source of current funding, comprising over 50% of the total budget for each school. Other funding sources identified in the study included state initiatives and state or district allotments. Many of the schools in the study projected that fees charged to students would decrease in coming years, with state initiatives serving as the primary source of funding. While many states still struggle with proper funding formulas of who should pay (i.e., state government, local schools, students and or their parents, or a combination of all three), this section of the literature review focuses on the financial background of the FLVS.

**FLVS financial background.**

(1995-2002) Throughout the course of its short existence the FLVS has been subjected to several different types of online funding. While the FLVS was originally conceived as two separate online projects in Alachua and Orange Counties during the 1995-96 school year, leaders in each county were able to combine their efforts and secure a $200,000 “Break The Mold” grant through the Florida Department of Education. Funding totaling $23 million in state line item appropriations over a six-year period provided the FLVS with a set amount of money each year to base their budget. This type of funding mechanism also allowed the FLVS to control enrollment growth each year, without threatening local school district funding. However, with the line item appropriations also came the problems of meeting the demand for students and the ability of the school to
serve them effectively. The state appropriations were also tenuous in that the legislature could eliminate or partially fund the FLVS during any given school year.

**Florida K-20 education code.**

Legislation enacted in 2002 and 2003 provided parents with the ability to select from various educational options including the FLVS for their children to attend. Based on the constitutional amendment passed by Florida voters in 2002 requiring a decrease in class size throughout the state by 2010, the Florida legislature responded by implementing legislation to fund the FLVS as the 68th school district within the Florida Education Finance Program (FEFP). The funding formula adopted by the legislature is unique in that FLVS full-time-equivalent (FTE) students are determined by course completion and performance as opposed to traditional FTE formulas based on seat time. Therefore, if a student withdraws from or fails a FLVS course, the school receives no funding for that student. Initial funding provided by the General Appropriations Act through the FEFP for the FLVS was allocated at $4,820.25 per FTE based on a projection of 1,750 FTE completions producing an initial budget projection of $8,435,441 for the 2003 school year. The FLVS views the passing of this legislation as a way to provide permanency and financial stability as the school continues forward ("2003 Legislative Session," 2003).

**(2003-Present) FLVS financial background.**

Seeking an alternative funding solution for the FLVS that would provide for continued support by school districts in Florida, allow for a greater number of student enrollments, and demonstrate a continued commitment towards quality online courses, the FLVS lobbied the Florida Legislature to replace the line item funding with a performance-based funding model that would allow the FLVS to collect full-time equivalent (FTE) for “students who successfully complete online courses taught by FLVS teachers” (Council for Education Policy Research and Improvement [CEPRI], 2003). The funding model was a first for any online school and was passed by the Florida Legislature and put into effect on July 1, 2003.

Benefits of the new performance-based funding model include the fact that it is focused on the student, allows for flexibility needed in the online environment, provides for continued growth of the FLVS, and replaces the year-to-year line item structure with
one that is permanent. With this new performance-based funding model the FLVS recognizes the challenges that face them in the years to come. These include being held to a new level of accountability, developing ways to project and budget effectively, finding unique ways to meet the future demands of students, and balancing school growth while maintaining quality (Lentz & Steiner, 2004).

**Accreditation Issues**

The United States Web-Based Education Commission in its December 2000 report to Congress identified the need for high quality online educational content as one of seven important areas to be addressed. Until 2003 the issue of judging the quality of a virtual school program was difficult due to the lack of standards and accreditation agencies prepared to evaluate such institutions at the K-12 level. While five of the original 12 state-sponsored virtual schools identified by Clark (2001) are treated as part of the traditional public school system in which they reside the FLVS is currently an independent Florida district, accredited by the Southern Association of Colleges and Schools (SACS) through a new designation for distance education schools provided by The Commission on International and Trans-Regional Accreditation (CITA). This new level of accreditation paves the way for the FLVS to begin granting diplomas if it chooses or to continue providing supplementary courses for public, private, and home-schooled students.

In the spring of 2003 Cavanaugh (2004) examined the websites of 67 virtual schools to identify the accreditation status and the accrediting institution. Cavanaugh makes no mention of how the 67 virtual schools were identified for inclusion in the study. Of the 67 virtual school websites examined in the study only 27 stated that they were accredited. The 27 accredited schools represented a total of seven different agencies, “three of which are national” (Accrediting Commission of the Distance Education Training Council, Accrediting Commission for Independent Study, and the National Private School Accreditation Alliance), “and four of which are regional” (North Central Association of Colleges and Schools, Northwest Association of Schools and Colleges and Universities, Southern Association of Colleges and Schools, and the Western Association of Schools and Colleges) (p. 75). It is important to note that during the spring of 2003 when Cavanaugh sent out her survey, the FLVS had not yet attained the current CITA
accreditation by SACS and was listed as being accredited “by cooperating schools” (p. 81) meaning that the school districts enrolling students in the FLVS at the time of the study served as the accredited institution. As of 2008, all students attending the FLVS, whether full or part time, get their degree from the high school in the district where they physically reside, as the FLVS has not begun granting diplomas yet.

The SACS standards in relation to library collections in secondary schools state, “Secondary Schools with enrollment in excess of 1,500 students must provide at least 15,000 usable volumes,” while “new schools must have at least four volumes per student upon opening and meet the collection requirements within three years” (SACS, 2005, p. 15). Finally, SACS provides standards for distance education schools through the Accreditation Standards for the Commission on International and Trans-Regional Accreditation (CITA), but for a number of years did not include any mention of library or other educational resources. However, that changed in 2005, at which time indicators that relate to educational materials were outlined in the CITA standards.

While the original distance education accreditation standards published by CITA in 2001 did not address educational materials, as of July 2005 quality indicators were added to assess this area of the online institution seeking accreditation. These new indicators are included under the broader area of curriculum and instruction and are used to assess whether the school “provides a research based curriculum and instructional program that facilitates achievement for all students” (CITA, 2005, p. 2). The five quality indicators used to assess educational materials are stated below:

1. The school adopts and implements a policy concerning the selection of educational materials, which is based on sound educational research and practice.
2. The instructional materials are selected to support the specific objectives of the individual course, as well as the overall mission and goals of the school.
3. The materials provided to the student are current and match with the course objectives. The reading level of the materials is appropriate to the reading level competence of the students.
4. Appropriate study guides and supplementary materials are provided and based on course objectives.
5. Employs effective and systematic procedures for ensuring student and staff equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support student learning, the curriculum, and the instructional program (p. 3).
Since CITA accreditation visits are conducted once every five years and previous accreditation standards were approved in 2001, the latest standards would need to be addressed by schools seeking accreditation during the 2006-07 school year. The addition of quality indicators for educational materials in online K-12 accreditation standards validates the need for such materials in order to provide a quality program that facilitates student achievement.

**Problem In Relation To The Literature**

As described in Chapter 1, this research study examines how the staff of the FLVS seeks out and uses information resources and services and whether this can be explained by the application, modification, or extension of an information-seeking behavior theory. In addition, the study seeks to examine how students in the virtual K-12 setting, who have completed an open-ended research assignment, seek out resources to complete their assignment. There is no research base or theoretical application to this problem in any virtual school environment.

Based on the problem addressed by this study, Bates’ berrypicking theory is used to examine the information-seeking behavior of the staff and students in the virtual K-12 setting. Of the two most relevant theories in the field of information-seeking behavior, Bates’ berrypicking theory seems to most accurately explain information-seeking behavior that occurs in both an online and offline environment. Although Kuhlthau’s Information Search Process theory is often applied in the K-12 environment, it was not selected because the setting being examined lacks an observable assignment that contains a distinct starting point and endpoint and Kuhlthau’s theory does not explain flexible or less structured searches.

The overarching problem addressed by this study involves the information-seeking behavior of the staff preparing course materials and to a lesser extent the students in a virtual K-12 setting. Although Small, Sutton, Eisenberg, Miwa and Urfels (1998b) studied the online resources used by traditional PreK-12 educators in instructional design, there are no studies that speak to staff in a virtual K-12 setting. This problem is not addressed in the literature as most research involving the information-seeking behavior of secondary school educators was conducted prior to the advent of the online environment (Davis, 1987; Hiland, 1973; Holland, 1980; Holmes, 1987; Matheson, 1979; Ristow,
1987). The study conducted by Small et al. (1998b) that looks at staff information-seeking behavior in the online environment suggests that educators may prefer the berrypicking method when searching for relevant information, but it is not known whether staff members in the virtual school setting seek information in the same fashion.

Though less of a focus than the information behavior of staff, due to access issues, an aspect of this study addresses how students of various school settings (i.e., homeschooled, public and private) seek out information resources to complete an open-ended research assignment in the virtual school environment. This setting provides a unique environment to investigate differences that may or may not exist among the various students that attend this type of school. While major research areas related to adolescents’ information-seeking behavior have focused on the ability of students to conduct research and the details involved in the research process, the issue of how students seek out and use resources has received far less attention in the published literature. Based on the results of Levin, Arafeh, Lenhart and Rainie (2002), who have addressed this issue in the traditional school environment, students appear to seek out and favor Internet resources over other types of traditional materials and prefer using the Internet as opposed to a public or school library when completing an assignment. While this issue is addressed in relation to students in the traditional school setting, the problem of how students seek out information resources to complete an open-ended research assignment in the virtual school environment is not addressed in either the current youth information-seeking or virtual school research literature.

This study also examines how instructional designers, course developers, and teachers integrate information literacy skills instruction into the online environment. Few research studies exist that address the area of information literacy integration. Based on studies conducted by Todd (1995) and Hara (1997), evidence appears to support the importance for integrating information literacy into the curriculum rather than teaching it in isolation. While these studies address the integration of information literacy in the offline environment, no studies could be located that address the integration of information literacy or subsets of information literacy (i.e., Information and Communication Technologies (ICT) literacy) into the K-12 online environment. The development of information literacy in the online curriculum has been identified as a key
area of interest to the Florida Virtual School (“Research Opportunities,” 2006), so the decision to address this particular aspect of information literacy has been incorporated into the study.

A challenge related to the overarching issue explored by this study involved analyzing the information-seeking behavior of the staff and students for differences that may exist based on selected demographics. These demographics include educational background, experience, gender, age, instructional subject areas and students’ current educational environment (i.e., public, private, or home-schooled). The variables are important to the case study because they might assist in explaining possible differences that may exist among the information-seeking behaviors of the staff and students in the virtual K-12 setting. Each selected demographic related to the staff has been addressed in separate information-seeking behavior studies and the literature supports the existence of possible differences based on these demographics. Although the demographic related to students’ current educational environment i.e., home-schooled, public or private school, is not addressed in the literature, it is included because it may provide unique results due to the virtual K-12 setting that includes the unusual mix of public, private, and home-schooled students.

Finally, three contextual issues consisting of state-level policy, funding policy and accreditation standards were selected to investigate as relevant to the case study. The elements are supported by a search of existing dissertation and other research. These three elements are the ones that appear consistently and are in the most recent study Keeping Pace with K-12 Online Learning: A Snapshot of State-Level Policy and Practice 2007. They appear to be the most likely to affect decision-making, local school policies and budgets, curriculum development and the selection of resources, and ultimately information-seeking behavior. While the Florida legislature has addressed many of the state-level policy issues that have arisen throughout the formation of the FLVS, no documentation exists about how instructional materials provided by the state of Florida are handled in a school of this type. Funding issues may also play a role in the staff members’ ability to select accurate and relevant resources for inclusion in courses offered through the FLVS, while also affecting the quality, numbers and types of resources available to students involved in completing a research assignment. Finally, in the area of
accreditation, the most recent published version of the Commission on International and Trans-Regional Accreditation (CITA) standards include for the first time specifications about educational resources that affect the FLVS.

Based on the problem stated and the lack of supporting research in the areas to be addressed by this study, there is a need to examine the staff and students’ information-seeking behavior and use of resources in the virtual school setting. Through this study and the incorporation of the Florida Virtual School, viewed as a “National leader in distance learning for high school students” (OPPAGA, 2003, p. 5), new and unique knowledge is generated that will assist key stakeholders in the fields of online K-12 education and information-seeking behavior.
CHAPTER III

METHODOLOGY

A case study approach was used to investigate how and why instructional designers, course developers and teachers select information resources to support their teaching and how students select information resources to support their learning, as well as how administrators view their responsibility to assure that students and teachers can obtain the information resources and services they need to support their learning and teaching. The case study methodology is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2003, p. 13) and relies upon multiple sources of evidence. The data collection methods were principally qualitative. Questions were posed related to information-seeking behavior, influencing factors (i.e., the integration of information literacy and selected staff and student demographics), and contextual issues (i.e., Educational/Legislative policy, budgetary policy, and accreditation issues). Data was collected during the end of summer and fall 2006 semesters.

The Florida Virtual School (FLVS) was contacted and approval was obtained from the school’s internal research committee and administration. Human subjects forms were submitted to the Florida State University Internal Review Board (IRB) and approval was granted to carry out the research study proposed (see Appendix A). Likewise, informed consent and youth assent forms were submitted and approved by the Florida State University IRB for FLVS administrators, instructional designers/course developers, teachers, parents and students (see Appendix B).

Population of the Study

As an entirely online educational institution, the FLVS differs from other traditional schools in that physical facilities usually associated with a school do not exist. The lack of traditional physical facilities allows teachers and students the freedom to live anywhere in the state or the world. While administrative operations are located in Orlando, Florida, the majority of teachers and support staff are located throughout the state. The population for this study was drawn from a purposive sample of FLVS
administrators, instructional designers/course developers, teachers and students that is described in further detail below.

Administrators selected for this study included chief, director, and administrators on the instructional leadership team, who were selected because of their ability to provide background information, current level of support for the information-seeking behavior of the staff and students at the FLVS, along with information about the contextual issues of state level policy, funding policy, and accreditation. All other individuals involved spoke to their own information-seeking behavior. Another subset of the FLVS population selected for this study included instructional designers/course developers. Based on preliminary conversations with the FLVS, it appeared that instructional designers/course developers at the FLVS played a key role in the selection and integration of resources, as well as information literacy instruction, into the online curriculum. These two groups (i.e., instructional designers and course developers) worked in tandem while designing courses offered through the FLVS. In addition, teachers played an important role in carrying out instruction created by both the instructional designers and course developers. FLVS teachers were central to this study because little was known about how they seek out and use supplemental and/or additional information resources from those supplied by instructional designers and course developers or whether they add to the centrally planned information literacy instruction.

Finally, students who attended the FLVS constituted the last segment of the population included in this study. Students who were enrolled in a course with a resource project that required independent searching were included in this study in order to explore the ways in which various types of students (i.e., home-schooled, public, and private) seek out and use the information resources and services in addition to those provided by the FLVS. Because of the access-to-students limitations established by the FLVS, more focus was placed on administrators, instructional design/course developers, and teachers rather than students.

Based on the justifications and descriptions given, the population selected for various portions of this study included 16 administrators, the entire population of 20 instructional design/course developers, and the entire population of 308 full-time teachers. In addition, through the identification and assistance of the FLVS Curriculum
Specialist, 36 students enrolled in the second semester of an English II class containing an open-ended research assignment were included as part of the population of this study.

Data Collection

Researchers have developed multiple strategies for collecting data as part of the case study method. Useful strategies include: documentation, archival records, interviews, observations, the collection of physical artifacts and surveys. The use of these multiple data collection techniques is often referred to in the literature as methodological triangulation (Denzin, 1970; Mathison, 1988; Merriam, 1988) and is seen as a major strength of the case study research method. Multiple methods of data collection were incorporated to assist in the triangulation of data, validation of findings and to address issues of construct validity.

Documentation

The use of documentation as a source for data collection is an important element of case study research. Types of documents collected during the course of this research study included:

1. Organizational charts (See Appendix J) and accreditation visit responses
2. “Keeping Pace” studies and state governmental accountability reports
3. Formal studies and evaluations of the study site
4. Newspaper articles and other reports in the mass media

In addition to publicly available documents, specific FLVS documents were collected that were not available to the general public and that shed further light on the research topic.

Documents were used during the data collection phase of the study to assist in corroborating evidence gathered from various other sources, while providing specific details that may otherwise go unnoticed. Based on the documents collected, inferences were made about other possible avenues of information within the case. As a source of evidence the use of documentation was seen as being stable (i.e., can be reviewed repeatedly); unobtrusive (i.e., not created as a result of the case study); exact (i.e., contains exact names, references, and details of an event); and provided broad coverage (i.e., long span of time, many events, and many settings) (Yin, 2003).
While the collection of various types of documents served as one source of evidence, interviews and surveys constituted the major data collection methods and are discussed in further detail in the following sections.

**Interviews**

The interview as a data-gathering device assists the researcher in obtaining “the descriptions and interpretations of others” (Stake, 1995, p. 64). Interviews are a useful tool for collecting data about things that cannot be easily observed, such as emotions or past events. Open-ended interviews provide the investigator with the freedom to pursue various lines of questioning while still staying within a pre-set group of questions. Not only can the researcher ask about facts pertaining to the case, but also events and opinions of the respondents. This type of interview can provide other avenues of inquiry, while the respondents may serve as informants by providing the researcher with names of other prospective people to be interviewed at a later time (Yin, 2003). While the open-ended question may allow for greater flexibility in gathering opinions and thoughts from the participants, the open-ended nature of the questions may lead to subjectivity concerns and bias when coded by the researcher.

All survey and all interview questions were keyed to the main research questions and sub-questions using a question matrix; this was done to make sure that all of the research areas being investigated were covered. A key that explains the acronyms used in the matrix (and therefore the research questions and survey questions) is found below the matrix. The question matrix was not shared with the interview participants (see Appendix I).

Both interview instruments were pre-tested prior to their administration. The administrative interview instrument was pre-tested with a current Leon County School District administrator, while the instructional designer/course developer instrument was pre-tested with an instructional design specialist at Florida State University. Feedback gathered from pre-testing the interview instruments was incorporated into the final versions of the interviews administered.

Based on previous electronic communications and phone conversations with the FLVS manager of research and grants, the FLVS was made aware of the overall scope of the research study and the staff areas requested to be interviewed. The researcher
identified key areas in the staff structure and asked that interview participants be selected from those supplied. Through a phone conference call between the researcher and key FLVS staff members, an agreement was reached involving the FLVS staff to be interviewed. Seven to 10 FLVS staff members were to be selected by the manager of research and grants and the director of Florida services to be interviewed for approximately 45 minutes each.

The FLVS administrative structure starts at the top with the president of the school followed by seven “chief” administrative positions and then nine “director” level administrators. All individuals interviewed were administrators in the instructional department of the FLVS. The instructional department was selected because that is where all of the resource procurement occurs. Individual interviews were scheduled with one chief level administrator and three director level administrators that report to them. Interviews were conducted with four FLVS administrators (i.e., Chief Learning Officer, Director of Instruction, Director of Curriculum Services and Director of Florida Services) (see Appendix J). Again, these administrators were selected because of their ability to provide background information, current level of support for the information-seeking behavior of the staff and students at the FLVS, along with information about the contextual issues of state level policy, funding policy, and accreditation.

Instructional designers/course developers (ID/CD) were defined as individuals who reported to the Director of Curriculum Services (see Appendix J). Individual interviews were also scheduled and conducted with three instructional designers/course developers (ID/CD) (i.e., Lead Curriculum Specialist, and two Curriculum Specialists). These ID/CD are considered a course development team rather than administrators. The three ID/CD were selected because of the key role that they played in the selection and integration of resources and services, creation of course content for teachers, as well as information literacy instruction, into the online curriculum.

These seven individuals comprised approximately 13.5% of these staff positions included in the research study and were seen as being representative enough of the entire group of administrators and ID/CD to accurately reflect their opinions.

Interview questions related to information-seeking behavior, influencing factors, and contextual issues for administrators (see Appendix C), while instructional
designers/course developers’ questions focused on information-seeking behavior and influencing factors (see Appendix D). Consent forms were sent via email to the identified FLVS staff members (see Appendix B). Once the signed forms had been received by the researcher, interviews were scheduled at a suitable time for each participant. Because of the dispersed nature of the staff, interviews were conducted over the phone. A set of interview questions (see Appendixes C and D) was sent to the participant in advance of the scheduled interview. Interviews were tape recorded and transcribed to ensure accuracy. At the conclusion of the interview the researcher summarized the major points that were made by the participants. Finally, a transcript of the interview was emailed to each participant for review and approval to enhance the credibility of the data collected (Lincoln & Guba, 1985).

**Surveys**

Surveys can be useful in collecting specific information, but as with experiments, bias can enter into the development of the survey as well as the reporting of the findings. Leedy defines the term survey as “‘to look or to see over or beyond’ the casual glance or the superficial observation” (1997, p. 190). Possible forms of questions contained in a survey range from that of closed to open-ended types of questions. While the open-ended question may allow for greater flexibility in gathering opinions and thoughts from the participants, the open-ended nature of the questions may lead to subjectivity concerns and bias when coded by the researcher.

All survey questions were keyed to the main research questions and sub-questions. This key appears in the form of a matrix towards the end of this document (see Appendix I).

While the FLVS personnel structure has become more complex as the school has grown, certain key staff areas (i.e., administrators, instructional designers/course developers, and teachers) appear to have a greater impact on the information-seeking behavior of the FLVS than others. Results of interviews conducted with key administrators and instructional designers/course developers were analyzed and used to construct three separate survey instruments. These surveys were administered online through a website to 16 FLVS administrators (Appendix E), 20 FLVS instructional designers/course developers (Appendix F), and 308 FLVS teachers (Appendix G).
surveys were designed in a two-part format with the first section covering selected demographic elements, while the second portion consisted of content related questions that were specific to each group being surveyed. All three areas (i.e., information-seeking behavior, influencing factors, and contextual issues) were incorporated into the administrative and instructional designer/course developer surveys. The developed berrypicking information-seeking scenario was not included in the FLVS administrative survey, as administrators were not viewed as individuals who were tasked with seeking out information resources and services. The teacher survey focused on the areas information-seeking behavior and influencing factors. Demographic related elements collected, through the use of these three surveys, may shed light upon various differences in relation to the information-seeking behaviors of staff in a virtual school environment.

A consent request to participate in the study was emailed to the 16 administrators, all 20 instructional designers/course developers, and all 308 full-time teachers by a FLVS staff member. These requests were sent to password protected staff accounts managed by the FLVS. The corresponding consent forms (see Appendix B) contained a link from the email message to the survey. In order to avoid identifying information, the surveys were created in an anonymous fashion allowing consent to be granted electronically. By activating the link to the survey they were granting consent to participate.

As stated in the limitations section of Chapter 1, access to and questions posed of the FLVS student population was limited based on parameters established by the FLVS research advisory committee. Based on these limitations, a fourth survey consisting of 10 questions was administered to 36 second-semester high school English II students (Appendix H). Since the Florida Virtual School operates in the online environment and students are dispersed around and outside the state of Florida, informed consent was obtained through email. Consent was granted electronically for both parent and then student. The request for participation was sent by the Florida Virtual School English II teacher only to password protected parental accounts managed by the Florida Virtual School. The parental consent form (see Appendix B) was sent via email to notify parents of the research and let them know that if they allowed their student to link from the email message to the survey, they were granting permission. The email message also specified that the student should have read and agreed to all provisions before taking the survey.
Once the link had been activated, the opening page of the electronic survey contained the youth assent form (see Appendix B) and required the student to click on a link at the bottom of the web page before proceeding to complete the survey.

All four surveys were pre-tested prior to their administration. Instructions on how to complete the online surveys were included along with any definitions needed to provide context. The administrative survey instrument was pre-tested with current Leon County School District administrators, while the instructional designer/course developer survey instrument was pre-tested with an instructional design specialist at Florida State University. The teacher survey instrument was pre-tested with Florida State University faculty and other teachers who had online teaching experience. The student survey was pre-tested with students who had previously completed courses through the FLVS and were not currently enrolled in an FLVS English II course. Feedback gathered from pre-testing the surveys was incorporated into the final versions of the surveys to be administered.

Each of the four surveys was created and hosted through www.surveymonkey.com. Confidentiality of all subjects was maintained. The Florida Virtual School handled administration of the surveys to administrators, instructional designers/course developers (ID/CD), teachers and parental notification for students. The researcher did not have access to or the opportunity to deal with any type of personal identifying data. Responses were stored electronically on the www.surveymonkey.com website and were only accessible to the researcher via a password protected account. No individual responses were reported. Only group findings were documented.

After initial email messages were sent to participating administrators, ID/CD, teachers and students, a follow-up reminder was sent to the appropriate email accounts two weeks after initial contact to obtain a better return rate. Further reminders beyond this original follow-up were not allowed by the FLVS.

Babbie (2004, p. 260), a standard methodological reference, notes that survey return rates of 50% are acceptable to analyze and publish with 60% seen as good and 70% viewed as very good. The response rates proposed by Babbie are offered as suggestions and should only serve as a guideline as they have no statistical basis. According to Babbie, the literature in reference to acceptable return rates varies widely
on what is perceived as an acceptable response rate. The projected survey population was to include 16 FLVS administrators, 20 FLVS ID/CD, 308 FLVS teachers and 36 FLVS students. Due to the exploratory nature of this study and the limitation of one follow-up reminder, the projected acceptable return rate for each of the four groups surveyed was 45% or higher.

**The Florida Ask a Librarian Service**

The FLVS currently participates in the statewide “Ask a Librarian” service provided by Florida libraries. Usage data related to the FLVS and currently collected by the State Library of Florida was included in this study. Existing usage data was requested from the Virtual Reference Coordinator (VRC) at the Tampa Bay Library Consortium, who currently serves as the point of contact for this service.

**Techniques To Ensure The Collection of Reliable, Valid and Useful Data**

When collecting data for use in a case study, it is important to ensure that the data is reliable, valid, and useful. Yin (2003) has identified three principles that should assist the researcher in collecting this type of data. The three principles are discussed in detail below.

1. **Using multiple sources of evidence**

   A key strength of the case study research methodology rests in the ability of the researcher to use multiple sources and techniques in the data gathering process. This is often referred to in the literature as triangulation. “The rationale for this strategy is that the flaws of one method are often the strengths of another, and by combining methods, observers can achieve the best of each, while overcoming their unique deficiencies” (Denzin, 1970, p. 308). Likewise, triangulation allows the researcher to address a much larger array of issues. Within the area of triangulation, Patton (1987) has identified the following four types as they relate to case study research: (a) triangulation of data sources (i.e., data triangulation), (b) triangulation among different evaluators (i.e., investigator triangulation), (c) triangulation of perspectives to the same data set (i.e., theory triangulation), and (d) triangulation of methods (i.e., methodological triangulation). Finally, Yin (2003) asserts that construct validity is also addressed through the use of triangulation “because the multiple sources of evidence essentially provide multiple measures of the same phenomenon” (p. 99).
Multiple sources of evidence were employed in this study through the collection of documents, interviews and surveys. These three techniques provided multiple measures of the same phenomenon from the perspective of FLVS administrators, instructional designers, course developers, teachers and students.

2. Creating a case study database

Another principle that can assist in ensuring that the data collected is reliable, valid, and useful, is through the establishment of a case study database. The creation and use of such a database by the researcher provides another way for outside investigators to review the evidence collected, while not simply being limited to the final case study report. According to Yin, this “increases markedly the reliability of the entire case study” (2003, p. 102). Such a database could contain notes, documents, survey data, and narrative texts gathered throughout the process of the investigation.

A case study database was created in Filemaker Pro to assist in organizing the evidence collected throughout the course of the research process. The database contains notes, documents, interview narratives, survey data and other documents pertinent to the study of the FLVS.

3. Maintaining a chain of evidence

Finally, maintaining a chain of evidence may increase the reliability of the data being collected throughout the study. According to Yin (2003) by maintaining a chain of evidence you “allow an external observer—in this situation, the reader of the case study—to follow the derivation of any evidence, ranging from initial research questions to ultimate case study conclusions” (p. 105). Likewise, this should also allow the outside observer to track the chain of evidence in either direction. If done correctly this principle should negate the loss of data due to carelessness or bias, while allowing all of the data collected to be considered when creating the final report. Through the achievement of these objectives, construct validity can be determined, “thereby increasing the overall quality of the case” (p. 105).

Maintaining a chain of evidence was accomplished through the creation of a case study database. Results of evidence gathered coincided with initial research questions and details of the evidence collected are documented in the following chapter.
Data Analysis

Data analysis took place throughout the course of the research study. Qualitative data was analyzed for patterns and emerging narrative themes to assist in determining how FLVS administrators and instructional designers/course developers get access to and seek out the information resources they need to assist them in inserting (or integrating) information resources into the curriculum. Each of the interviews along with all open-ended survey comments were entered into a database using the qualitative software program Text Analysis Markup System Analyzer (TAMS). Qualitative data was coded and classified to recognize important themes and patterns as they emerged.

Administrative, instructional designer/course developer, teacher and student surveys were administered through SurveyMonkey.com, while data collected from the surveys were examined for frequencies using the Statistical Package for the Social Sciences (SPSS). Chi Square was used to test relationships among data elements with the understanding that the results are only suggestive and cannot be generalized beyond this case study. In this data analysis a relationship of various demographics were compared to specific responses and frequencies were compared to specific responses in a category (such as resources) where the groups were large enough (i.e., FLVS teachers). Finally, FLVS usage data related to the “Ask A Librarian” service and collected through the Tampa Bay Library Consortium (TBLC) Virtual Reference Coordinator (VRC) was examined for frequencies.

The results of the data collection, analysis, and interpretation of findings resulting from the data collection and analysis in relation to the research questions is spoken to in the remaining chapters.
CHAPTER IV

DATA ANALYSIS

Data collected for this study explore the information-seeking behavior of the staff and students of the Florida Virtual School (FLVS). Results include an interpretation of responses received from participants through the use of telephone interviews, online surveys and documents pertinent to the study. The responses are organized according to the four major research questions posed, followed by areas focusing on influencing factors (i.e., the integration of information literacy and selected staff and student demographics) and contextual issues (i.e., Educational/Legislative policy, budgetary policy, and accreditation issues) related to the information-seeking behavior of the staff and students of the FLVS.

Information-Seeking Behavior

The overarching purpose addressed by this study was to learn about the manner in which the staff and students of the FLVS seek out and use information resources and services and whether their information-seeking behavior can be explained by the application of the Bates berrypicking model. In order to provide further insight, the following research questions were proposed: how do FLVS administrators view their responsibility to assure that teachers and students can seek out and use the information resources and services they need to support their teaching and learning; how do FLVS instructional designers and course developers seek out and use the information resources and services they need to assist them in inserting (or integrating) information resources and services into the curriculum; how do FLVS teachers seek out and use supplemental and/or additional information resources from those supplied by the instructional designers and course developers, needed to assist them in providing instruction; and how do FLVS students seek out and use the information resources and services they need to support their learning when these are not provided as part of the course content. Other questions, delineated later, were asked about influencing factors and contextual issues.

The research questions are addressed in this chapter through an analysis of responses received from documents and from phone interviews and online surveys conducted with a purposeful sample. Online surveys were completed with a return rate of
75% (12 of 16) for administrators, 55% (11 of 20) for instructional designers/course developers (ID/CD), 47% (147 of 308) for teachers and 50% (18 of 36) for students. The responses to survey questions were places on a Likert-like scale and treated as if they were equal interval. The responses ranged from 1 (the top or highest frequency response) to 5 (to bottom or least frequency response). When these data were interpreted, a score of between 1 and 2 was considered extremely high and meaningful in a positive sense. Comparatively if resources or services received between 1 and 2, this was interpreted as something quite important to the group surveyed as a whole and if between 2 and 3 fairly important. On the other hand, if a score fell below 3, it was interpreted as low and the closer to 5 it was, the lower. There were no absolute scores of 1 or 5 and very few between 1 and 2 or 4 and 5. This interpretative scale must be kept in mind when reading the tables as well as when noting the findings in Chapter 5 that are based on this data.

**Florida Virtual School Administrative Role**

The following section includes results based on phone interviews conducted with four FLVS administrators. Results presented in tables 1-4 are based on responses gleaned from the online survey administered to 16 FLVS instructional leadership team administrators and are based on a total of 12 instructional leadership team administrative respondents. Participants who were interviewed and surveyed were chosen by the Director of Research and the Director of Florida Services and were viewed as a representative purposive sample of FLVS administrators.

**Teachers’ Obtaining Information Resources and Services**

An area probed during phone interviews involved determining the role that FLVS administrators played in assuring that teachers were able to obtain needed information resources and services to support their teaching and learning. This role varied (i.e., the ‘higher up’ the less involved) and was dependent upon the administrative duties of the individuals who participated in the phone interviews. Roles described by respondents ranged from that of a listening and championing role, to a role of direct involvement, to a role that had little if any interaction with the FLVS teachers. Areas most often mentioned by FLVS administrators that appeared to play the greatest role in making sure that teachers were able to obtain needed information resources and services to support their
teaching and learning appear to fall under the director of instruction and the director of curriculum services.

Table 1 presents the results of FLVS administrators surveyed regarding their level of involvement in making sure that teachers are able to seek out needed information resources and services to support their learning. Less than half of their responses showed substantial involvement.

Table 1 - FLVS Administrators’ Role in Assisting Teachers to Seek Out Information Resources and Services

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>As an administrator at the Florida Virtual School how involved are you in making sure that teachers are able to seek out (i.e., search for) needed information resources to support their teaching?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always Involved</td>
</tr>
<tr>
<td></td>
<td>1 (8.3%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>As an administrator at the Florida Virtual School how involved are you in making sure that teachers are able to seek out (i.e., search for) needed information services to support their teaching?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always Involved</td>
</tr>
<tr>
<td></td>
<td>1 (8.3%)</td>
</tr>
</tbody>
</table>

Total Respondents
N=12

Note: Response Average (1=Always and 5=Never).

**Teachers’ Use of Information Resources and Services**

Similar to the area of obtaining information resources and services, FLVS administrators were asked during phone interviews to describe their responsibility as it related to planning for teacher use of information resources and services in courses at the FLVS. Again, this role varied and was dependent upon the administrative duties of the individuals who participated in the phone interviews. Respondents directly involved in this area viewed their role as one of filtering through the resources and deciding what would be good for the teachers and then working with the training director and
curriculum director to make final decisions. Once this had taken place, the upper level administrators asked staff members from both the training director and curriculum director teams to work directly with the teachers. The areas most often mentioned by administrators at the FLVS that appeared to play the greatest role in making sure that teachers were able to use information resources and services seem to fall under the mentor program department, training team and curriculum services team.

Administrative respondents often noted during the interviews the important role that the mentor program department played in training, supporting and making sure that the teachers were using the resources or services once they had been decided upon and purchased. An example mentioned by several administrators pointed to the school’s use of a product called Elluminate. The FLVS is pushing to have teachers use this service with their students to help tutor and increase student-to-student interaction. While the training team provided the initial training sessions, the mentor program department provides the ongoing support for this service. The curriculum services team (i.e., director of curriculum services, lead curriculum specialist, curriculum specialists, instructional design specialists, development support representatives, and subject matter experts) also plays a major role in this area. Administrators noted that FLVS curriculum specialists spend approximately 40 to 60 percent of their time working directly with teachers while providing support to help teachers use the resources effectively.

Table 2 presents the results of FLVS administrators surveyed regarding their level of involvement in making sure that teachers are able to use information resources and services to support their learning. Less than half of their responses showed substantial involvement.
Table 2 - FLVS Administrators’ Role in Assisting Teachers to use Information Resources and Services

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>Always Involved</th>
<th>Frequently Involved</th>
<th>Occasionally Involved</th>
<th>Rarely Involved</th>
<th>Never Involved</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>As an administrator at the Florida Virtual School how involved are you in making sure that teachers are able to use information resources to support their teaching?</td>
<td>1 (8.3%)</td>
<td>4 (33.3%)</td>
<td>3 (25.0%)</td>
<td>1 (8.3%)</td>
<td>3 (25.0%)</td>
<td>3.08</td>
</tr>
</tbody>
</table>

Administrator Question
As an administrator at the Florida Virtual School how involved are you in making sure that teachers are able to use information services to support their teaching?

<table>
<thead>
<tr>
<th>Always Involved</th>
<th>Frequently Involved</th>
<th>Occasionally Involved</th>
<th>Rarely Involved</th>
<th>Never Involved</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (8.3%)</td>
<td>4 (33.3%)</td>
<td>2 (16.7%)</td>
<td>2 (16.7%)</td>
<td>3 (25.0%)</td>
<td>3.16</td>
</tr>
</tbody>
</table>

Total Respondents
N=12

Note: Response Average (1=Always and 5=Never).

Students’ Obtaining Information Resources and Services

Another area that was probed during phone interviews involved finding out the role that FLVS administrators played in assuring that students were able to obtain needed information resources and services to support their learning. This role varied and was dependent upon the administrative duties of the individuals who participated in the phone interviews. Roles described by respondents ranged from that of direct involvement in making sure that the students were able to access the school resources and courses from remote sites (i.e., school libraries, school computer labs, etc.) to a role that had little if any direct interaction with the FLVS students. Areas most often mentioned by administrators at the FLVS that appeared to play the greatest role in making sure that students were able to obtain needed information resources and services to support their learning appear to fall under the director of instruction, director of curriculum services and the director of Florida services.

Administrative respondents noted during interviews that the FLVS learning management system (i.e., UCompass Educator) contains an information resource bar that is visible from within any course offered by the FLVS. Resources located on this bar are
ones that teachers felt students needed to be able to access at any point no matter what course they were in and administrators played a key role in determining which resources should be accessible to FLVS students. There are 13 categories contained on the information resource bar that include links to resources like Ask a Librarian, mla.org, refdesk.com, turnitin.com, United Streaming and others (see Appendix K).

Table 3 presents the results of FLVS administrators surveyed regarding their level of involvement in making sure that students are able to obtain needed information resources and services to support their learning. The scores indicating level of involvement with students in assuring they can adequately seek out information was even lower than that for teachers.

Table 3 - FLVS Administrators’ Role Insuring That Students Are Able To Seek Out Information Resources And Services

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>As an administrator at the Florida Virtual School how involved are you in making sure that students are able to seek out (i.e., search for) needed information resources to support their learning?</th>
<th>Always Involved</th>
<th>Frequently Involved</th>
<th>Occasionally Involved</th>
<th>Rarely Involved</th>
<th>Never Involved</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator Question</td>
<td>As an administrator at the Florida Virtual School how involved are you in making sure that students are able to seek out (i.e., search for) needed information services to support their learning?</td>
<td>Always Involved</td>
<td>Frequently Involved</td>
<td>Occasionally Involved</td>
<td>Rarely Involved</td>
<td>Never Involved</td>
<td>Response Average</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=12</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Always and 5=Never).

**Students’ Use of Information Resources and Services**

Similar to the area of obtaining information resources and services, FLVS administrators were asked during phone interviews to describe their responsibility as it related to making sure that students were able to use information resources and services
at the FLVS. Respondents directly involved in this area viewed their role as more “big picture” and not one that was involved in the nitty-gritty due to the fact that so many of the resources were integrated into FLVS courses. Key administrators played a vital role in the initial integration of the information resource bar into the FLVS learning management system (i.e., UCompass Educator) and continue to play a major role in determining which resources are accessible to all FLVS students through the information resource bar. Areas most often mentioned by FLVS administrators that appeared to play the greatest role in making sure that students were able to use information resources and services seem to fall under the curriculum services team, lead teachers, training team and technology support department.

Administrative respondents often noted during the interviews the important role that the curriculum services team played in making sure that students were able to use the information resources or services once they had been integrated into the course. Each course at the FLVS contains a course information link that is separate from the student information resource bar, while the curriculum services team is charged with writing directions or creating brief presentations to help the students understand how to use the resources and services. The lead teachers then assist in coaching the other teachers in making sure that the students know how to use the resources and services that are made available. FLVS teachers then either explain during the first module of each course, or instructions are given that discuss what resources are embedded in the course and what resources will be mailed to the student. The training team works to make sure that the teachers understand how to use the resources and services so that if a student is having an issue beyond what was explained in the course module instructions, or they just were not getting it, the student could contact their instructor who would be there to help and talk them through the situation. If the FLVS teacher was unable to assist in solving the student’s access issue, then the technology support department would be available to assist the student.

Table 4 presents the results of FLVS administrators surveyed regarding their level of involvement in making sure that students are able to use information resources and services to support their learning. The scores indicating level of involvement with
students in assuring they can adequately use information was even lower than that for teachers.

Table 4 - FLVS Administrators’ Role Insuring Students Are Able To Use information Resources And Services

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>As an administrator at the Florida Virtual School how involved are you in making sure that students are able to use information resources to support their learning?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always Involved</td>
</tr>
<tr>
<td>Administrator Question</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
</tr>
</tbody>
</table>

Note: Response Average (1=Always and 5=Never).

**Ask a librarian.**

Another area probed involved gathering data from the Tampa Bay Library Consortium (TBLC) Virtual Reference Coordinator (VRC) to determine whether FLVS students use the “Ask A Librarian” service provided by the State Library of Florida. Statistics for the “Ask A Librarian” service are kept by the TBLC. According to data collected, the FLVS’ initial participation began in November of 2003. In order to participate in the “Ask A Librarian” program a staff member from the FLVS must agree to volunteer and staff the virtual desk for two hours a week. The FLVS staff member who initially assisted in staffing the virtual desk was a history teacher who also had a master’s degree in library science. FLVS students’ only access to a librarian may be through the “Ask A Librarian” service.
While the TBLC collects statistics based on the patron’s login point, it is possible for FLVS students to access the “Ask A Librarian” service through their local public library website and not be identified as a FLVS student. The “Ask A Librarian” program also provides a reference by email service that is available 24 hours a day; however, these statistics are managed locally throughout the state of Florida by individual members and are not currently available in any type of centralized database.

Between November 2003 and April 2005, there were 1,054 documented logins to live chat from the FLVS website. During this time period FLVS student use of the service accounted for approximately 5.6% of the total usage. Again, it is possible that greater numbers of FLVS students make use of this service, but it is not fully documented by the TBLC. According to the VRC, the FLVS teacher who had been staffing the service since its inception stopped around July 2005 and no FLVS teacher has been staffing the service since then. While no FLVS staff member has been volunteering, or assisting with the virtual desk recently, the VRC mentioned that FLVS students are still able to access the “Ask A Librarian” service.

Data gathered from the TBLC VRC and displayed in Table 5 below presents the results of student use of the “Ask A Librarian” service over the past two school terms.

Table 5 - “Ask A Librarian” FLVS Student Use

<table>
<thead>
<tr>
<th>School Year</th>
<th>FLVS Student Use</th>
<th>All Patrons Use</th>
<th>Percentage of FLVS Student Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/1/2005 – 6/30/2006</td>
<td>41</td>
<td>22,542</td>
<td>0.18%</td>
</tr>
<tr>
<td>7/1/2006 – 6/30/2007</td>
<td>213</td>
<td>41,376</td>
<td>0.51%</td>
</tr>
</tbody>
</table>

**Personnel Involved In Selection of Information Resources and Services**

During phone interviews, FLVS administrators and instructional designers/course developers (ID/CD) were asked to provide information detailing the specific personnel who were involved in the selection of information resources and services in the FLVS setting. Respondents noted that while resources and services are most often selected by
director level personnel and are identified at various conferences that the FLVS personnel (i.e., curriculum specialists, course developers, course liaison teachers, etc.) attend, actual personnel involved in the selection process varies because the school makes decisions through teams, committees, and groups and includes stakeholders from all over the school.

There are two directors of instruction at the FLVS who perform the same job and work directly with what are called “instructional leaders.” These “instructional leaders” would be the equivalent of an assistant principal position in a ‘brick-and-mortar’ school. The two directors of instruction play a large role in the selection of information resources and services at the FLVS since resources and services used at the FLVS are purchased through the director of instruction’s budget. A few examples of resources and services that are purchased through the director of instruction’s budget include, but are not limited to, SAS InSchool Curriculum Pathways, UnitedStreaming, BrainPOP and Elluminate.

SAS InSchool Curriculum Pathways provides an online resource for students and teachers in grades 8-14 through simulations, guided online research, more than 5,000 teacher-evaluated web sites and lessons covering a broad range of concepts and skills. UnitedStreaming is a digital video-based on-demand resource that provides educators with access to 50,000 video segments that can be integrated into the classroom curriculum. BrainPOP provides web-based content that is correlated to state standards across subject areas that include technology, math, English, science, social studies, music, arts and health. Finally, the Elluminate product provides the FLVS with the ability to create software-based virtual classroom environments that allow for greater interaction in distance education and online training situations.

While the directors of instruction fund the resource or service, the director of curriculum services makes the ultimate decision as to which video clip from a product like United Streaming is used in the actual course. Staff members working for the director of curriculum services are often involved in the selection of resources and services during the course design process, which may include the subject matter expert, curriculum specialist, instructional designer and the project manager assigned to the course under development. Respondents noted that the directors of instruction try to work
closely with the director of curriculum services in making decisions related to the selection of information resources and services.

Other types of resources and services that may not be used across the entire FLVS curriculum are often identified through more casual types of contacts with vendors, resource providers, or simply by someone at the FLVS mentioning to the curriculum services team that they should look into it. Respondents noted that they had even received resource ideas from students at the FLVS. Similarly, the content writer for a specific course is involved in the selection process through collecting external websites and possible lab simulations that might be appropriate to use in the course they are developing. Content writers are referred to as content experts at the FVLS and are often concurrently employed as teachers at the FLVS.

In order to better facilitate the selection of information resources and services at the FLVS, a curriculum resource specialist was hired during the fall of 2006 and placed in charge of resources. Interview respondents mentioned that vendors often contact the FLVS thinking that their product would be perfect for the FLVS and the School has spent a lot of time in the past with the vendors only to find out that their product just will not work with the way that the FLVS is structured. Prior to joining the staff at the FLVS, the curriculum resource specialist worked as a high school media specialist in the state of Florida and serves as a gatekeeper in terms of negotiating prices and looking at demonstrations of different resources to make sure that the FLVS is getting the best product. See Appendix L for further information regarding the current job description of the curriculum resource specialist at the FLVS.

**Florida Virtual School Instructional Designers/Course Developers**

The following section includes results based on phone interviews conducted with three FLVS instructional designers/course developers (ID/CD). The three FLVS ID/CD interviewed included the Lead Curriculum Specialist, Curriculum Specialist, and member of the Instructional Leader Team. Results presented in tables 6-15 are based on responses gleaned from the online survey administered to 20 FLVS ID/CD and is based on a total of 11 ID/CD respondents.
**Information Seeking**

**Berripicking search scenario.**

In order to determine whether the information-seeking behavior of the FLVS instructional designers/course developers (ID/CD) could be explained by the application of Bates’ berrypicking model, participants were presented with the two search process scenarios listed in Table 6. Scenario “A” was designed to present the search process in a linear format, while scenario “B” was based upon a representation of Bates’ berrypicking model.

Table 6 - Search Process Scenarios

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Search Process Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A:</td>
<td>Search for one type of material or one subject at a time, evaluate what I find, and then move on to another type.</td>
</tr>
<tr>
<td>Scenario B:</td>
<td>Search through a variety of materials, identifying useful information and references throughout the search process, but not necessarily limiting my search to one type of material or one subject at a time.</td>
</tr>
</tbody>
</table>

With a hard copy of the search process scenarios in front of the phone interview participants, FLVS instructional designers/course developers were asked to select the scenario that best described how they sought resources for the purpose of course development. All of the FLVS instructional designers/course developers interviewed selected scenario “B” (i.e., the berrypicking scenario). Interview participants went on to explain that they often looked at lots of different types of resources, at various times, while making evaluations and then revisiting them. Resources viewed as being useful might be quickly categorized on a computer as the respondents continued their search, while another interview respondent supported their selection of scenario B by stating that the FLVS did not operate in a linear fashion.
In order to test the two scenarios for reliability, both scenarios presented in Table 6 were broken into their sub components and presented to ID/CD through an online survey. Table 7 indicates the results of the first sub component of the search process scenario involving FLVS ID/CD. Scenario A1 in Table 7 represents the sub component of the linear search process, while scenario B1 corresponds to a sub component of the Bates’ berrypicking search process.

Table 7 - Search Process Scenarios Sub Component 1

<table>
<thead>
<tr>
<th>Search Process Scenario</th>
<th>ID/CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A1: Focus my search on one type of material at a time.</td>
<td>1 (90.1%)</td>
</tr>
<tr>
<td>Scenario B1: Search through a variety of materials, moving back and forth among types.</td>
<td>10 (90.9%)</td>
</tr>
</tbody>
</table>

Total Respondents N=11

Table 8 presents the results of the second sub component of the search process scenario involving FLVS ID/CD. Scenario A2 in Table 8 represents the sub component of the linear search process, while scenario B2 corresponds to a sub component of the Bates’ berrypicking search process. It should be noted that the responses to this scenario are the only ones that do not support the berrypicking scenario.

Table 8 - Search Process Scenarios Sub Component 2

<table>
<thead>
<tr>
<th>Search Process Scenario</th>
<th>ID/CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A2: Focus my search on one subject at a time.</td>
<td>9 (81.8%)</td>
</tr>
<tr>
<td>Scenario B2: Search on a variety of subjects at a time, moving back and forth among topics.</td>
<td>2 (18.2%)</td>
</tr>
</tbody>
</table>

Total Respondents N=11
Table 9 provides the results of the third and final sub component of the search process scenario involving the FLVS ID/CD. Scenario A3 in Table 9 represents the sub component of the linear search process, while scenario B3 corresponds to a sub component of the Bates’ berrypicking search process.

**Table 9 - Search Process Scenarios Sub Component 3**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Search Process Scenario</th>
<th>ID/CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A3:</td>
<td>Evaluate what I find before moving on to another type of material.</td>
<td>2 (18.2%)</td>
</tr>
<tr>
<td>Scenario B3:</td>
<td>Evaluate materials as I locate them and sometimes locate several and then evaluate them individually or comparatively.</td>
<td>9 (81.8%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td>N=11</td>
</tr>
</tbody>
</table>

After answering three questions representing three separate sub components of the two search process scenarios, FLVS ID/CD were presented with the complete search process for both scenarios. Table 10 displays the results of the complete search process for both scenarios for FLVS ID/CD.

**Table 10 - Search Process Scenario Results**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Search Process Scenario</th>
<th>ID/CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A:</td>
<td>Search for one type of material or one subject at a time, evaluate what I find, and then move on to another type.</td>
<td>2 (18.2%)</td>
</tr>
<tr>
<td>Scenario B:</td>
<td>Search through a variety of materials, identifying useful information and references throughout the search process, but not necessarily limiting my search to one type of material or one subject at a time.</td>
<td>9 (81.8%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td>N=11</td>
</tr>
</tbody>
</table>
Training in search techniques.

The majority of instructional designers/course developers (ID/CD) at the FLVS rely upon self-taught search techniques when seeking out online information resources. During phone interviews, FLVS ID/CD were asked how they gained knowledge in search techniques when seeking out online information resources for the purpose of integrating them into the curriculum. While respondents noted that they had received no formal training by the FLVS in search techniques and relied upon their own self-taught skills when searching for online information resources to integrate into the curriculum, one respondent stated that FLVS curriculum specialists had conducted training for FLVS teachers in the past on the topic of doing good successful searches.

Results gathered from the online survey and displayed in Table 11 indicate the current status of training in search techniques for FLVS ID/CD. Two ID/CD who selected “other” stated that they relied upon both previous FLVS training and self-taught skills, while one ID/CD noted that they had taught a course on Internet search techniques in the past.

<table>
<thead>
<tr>
<th>Search Techniques</th>
<th>Course Developers &amp; Instructional Designers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rely upon training provided by the Florida Virtual School in search techniques.</td>
<td>1 (09.1%)</td>
</tr>
<tr>
<td>Rely upon my own self-taught (i.e., learn as you go) search techniques.</td>
<td>8 (72.7%)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (18.2%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=11</td>
</tr>
</tbody>
</table>

Seeking out information resources and services.

Another area that was probed during phone interviews involved finding out how FLVS instructional designers/course developers (ID/CD) sought out information resources and services used in the design or development of courses at the FLVS.
Interview responses varied and were dependent upon the background and “Information Use Environment” (IUE) that the respondent relied upon when seeking out information resources and services. While many of the respondents mentioned that they relied upon purchased FLVS and free Internet-based resources and services, other respondents noted that they relied upon and searched through statewide university databases and online journals due to their status as a degree-seeking college student.

Interview respondents noted that once the scope, sequence and topics for a specific course had been identified, then the course developer (i.e., content specialist) would perform some initial resource searches. The course developer would normally search through the “Big 3” set of resources (i.e., United Streaming, BrainPop and SAS InSchool Curriculum Pathways), or have a discussion with one of their FLVS partners or another vendor that might provide the resource, or know of a resource. Respondents noted that they might seek out resources while at a conference, or post something to a discussion list to see if anyone knew of a good resource that would fit with the unit or module that they were developing. The course developer might also seek out and have a discussion with an instructor who had experience in teaching the course or content in a setting that was similar, or different from that of the FLVS. Likewise, the course developer would also seek out information from the FLVS curriculum resource specialist and the curriculum services team. The course developer would then work with the curriculum specialist to create a storyboard of the module lessons and the topics of the lessons that would further define the types of resources needed to support the course and in turn assist in narrowing the search.

According to respondents, the course developer is the person going out and searching for external links as well as using the paid resources of the FLVS. While the course developer may seek out and refer to several different texts to see what is traditionally covered in the course being developed, FLVS courses are not developed based on any type of textbook but on a motif and the Florida Sunshine State Standards. Therefore, while the textbook might be used as a reference when constructing a content page, respondents viewed the textbook as a minor resource.

Results gathered from the online survey and displayed in Table 12 indicate the places that FLVS ID/CD use when seeking out resources for the purpose of designing or
developing a course. One respondent who selected the “other” choice stated that they frequently relied upon Questia (i.e., an online library service providing books and journal and newspaper articles in the social sciences and humanities area), while three ID/CD noted that they sometimes relied upon books in their own personal library, other software-based products and texts authored by the Association for Supervision and Curriculum Development.

Table 12 - Instructional Designers/Course Developers by Source of Information Resources

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequently (5+ Times)</th>
<th>Sometimes (2-4 Times)</th>
<th>Seldom (1 Time)</th>
<th>Never (0 Times)</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLVS Purchased Resources</td>
<td>6 (55.0%)</td>
<td>2 (18.0%)</td>
<td>3 (27.0%)</td>
<td>0 (00.0%)</td>
<td>1.73</td>
</tr>
<tr>
<td>The Florida Electronic Library</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>3 (27.0%)</td>
<td>8 (73.0%)</td>
<td>3.73</td>
</tr>
<tr>
<td>Public Library</td>
<td>2 (18.0%)</td>
<td>1 (09.0%)</td>
<td>1 (09.0%)</td>
<td>7 (64.0%)</td>
<td>3.18</td>
</tr>
<tr>
<td>Community College Library</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>11 (100%)</td>
<td>4.00</td>
</tr>
<tr>
<td>University/College Library</td>
<td>0 (00.0%)</td>
<td>1 (09.0%)</td>
<td>1 (09.0%)</td>
<td>9 (82.0%)</td>
<td>3.73</td>
</tr>
<tr>
<td>The Internet</td>
<td>11 (100%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>1.00</td>
</tr>
<tr>
<td>“Ask a Librarian” Service</td>
<td>0 (00.0%)</td>
<td>2 (18.0%)</td>
<td>2 (18.0%)</td>
<td>7 (64.0%)</td>
<td>3.45</td>
</tr>
<tr>
<td>Other</td>
<td>1 (09.0%)</td>
<td>3 (27.0%)</td>
<td>0 (00.0%)</td>
<td>7 (64.0%)</td>
<td>3.18</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td>N=11</td>
<td></td>
</tr>
</tbody>
</table>

Note: Response Average (1=Frequently and 4=Never).

Table 13 presents the results of FLVS instructional designers/course developers (ID/CD) surveyed regarding their selection of resources used when seeking out content for the purpose of designing or developing a course. Respondents who selected the “other” option in the survey question noted that they sometimes relied upon online resources, their own knowledge and other teachers when obtaining content for the purpose of designing or developing a course.
Table 13 - Instructional Designers/Course Developers by Source of Content

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequently (5+ Times)</th>
<th>Sometimes (2-4 Times)</th>
<th>Seldom (1 Time)</th>
<th>Never (0 Times)</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbooks</td>
<td>3 (27.0%)</td>
<td>2 (18.0%)</td>
<td>5 (45.0%)</td>
<td>1 (09.0%)</td>
<td>2.36</td>
</tr>
<tr>
<td>Printed Books Other Than Textbooks</td>
<td>3 (27.0%)</td>
<td>5 (45.0%)</td>
<td>2 (18.0%)</td>
<td>1 (09.0%)</td>
<td>2.09</td>
</tr>
<tr>
<td>Authoritative Websites</td>
<td>7 (64.0%)</td>
<td>4 (36.0%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>1.36</td>
</tr>
<tr>
<td>Journals</td>
<td>2 (18.0%)</td>
<td>6 (55.0%)</td>
<td>3 (27.0%)</td>
<td>0 (00.0%)</td>
<td>2.09</td>
</tr>
<tr>
<td>eBooks</td>
<td>0 (00.0%)</td>
<td>6 (55.0%)</td>
<td>3 (27.0%)</td>
<td>2 (18.0%)</td>
<td>2.64</td>
</tr>
<tr>
<td>Online Databases</td>
<td>1 (09.0%)</td>
<td>4 (36.0%)</td>
<td>3 (27.0%)</td>
<td>3 (27.0%)</td>
<td>2.73</td>
</tr>
<tr>
<td>Electronic Encyclopedias</td>
<td>1 (09.0%)</td>
<td>5 (45.0%)</td>
<td>4 (36.0%)</td>
<td>1 (09.0%)</td>
<td>2.45</td>
</tr>
<tr>
<td>Other</td>
<td>0 (00.0%)</td>
<td>2 (18.0%)</td>
<td>1 (09.0%)</td>
<td>8 (73.0%)</td>
<td>3.55</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=11</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Frequently and 4=Never).

Finally, FLVS instructional designers/course developers (ID/CD) were asked during phone interviews about the issue of selecting resources that were available to students located outside of the state of Florida. ID/CD mentioned that while they do not let this be an overriding concern, they have thought through who else is going to be able to access the integrated resources down the road. It was also mentioned that if the resource or service was really limited to only students in the state of Florida, then it would be something that the ID/CD would be less inclined to incorporate into a course. Table 14 presents the results of FLVS instructional designers/course developers (ID/CD) surveyed regarding the level of importance that they place on selecting resources that are accessible to students who reside outside of the state of Florida as well as entities that may lease or purchase FLVS courses.
Table 14 - ID/CD Level of Importance in Selecting Resources For Students and Entities Outside of Florida

<table>
<thead>
<tr>
<th>ID/CD Question</th>
<th>How important is it that the resource be accessible to students outside of the state of Florida?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely Important</td>
</tr>
<tr>
<td>ID/CD Question</td>
<td></td>
</tr>
<tr>
<td>How important is it that the resource be accessible to students</td>
<td>6 (54.5%)</td>
</tr>
<tr>
<td>outside of the state of Florida?</td>
<td></td>
</tr>
<tr>
<td>ID/CD Question</td>
<td></td>
</tr>
<tr>
<td>How important is it that the resource is available to those who may</td>
<td>5 (45.5%)</td>
</tr>
<tr>
<td>lease or purchase Florida Virtual School courses?</td>
<td></td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
</tr>
</tbody>
</table>

Note: Response Average (1=Extremely and 5=Not).

**Information Use**

FLVS instructional designers/course developers (ID/CD) were also asked during the phone interviews to explain how they used the information resources and services identified when designing or developing courses. As expected, interview responses varied and were based on the background and experience of the respondent. Most of the respondents stated that resources and services would probably be imbedded into a lesson in the course for student use. They all cautioned that they were leery of websites because even public domain websites considered stable tend to disappear.

The most essential external resources are imbedded into a particular unit or assessment for the course being developed. Developers look for interactivity resources that are good and correct in their content instead of reinventing the wheel. Students are also directed to a certain source and given an explanation of why they are visiting this resource and what they need to do with the information once they have completed the interactivity.

Sometimes there is a need to include a video clip from a service such as United Streaming. When this occurs the process of linking is more complicated than a website or link to an online textbook. Once a developer selects a clip, then it is turned over to the
technical arm of the curriculum services team to integrate into the course unit, making it as seamless as possible for the students to access.

Another aspect of using resources is the online or CD-ROM versions of textbooks. Once content is developed by the FLVS then students are pointed to online textbooks to complete a specific assignment. ID/CD must be vigilant in making sure that the link is to the appropriate version of the textbook. It was mentioned by several of the ID/CD that the publishers usually revise the textbooks every three years and so the FLVS updates accordingly.

SAS InSchool Curriculum Pathways is considered a useful tool when using resources. There are regular sessions that ID/CD attend to update themselves on the latest SAS products. The only problem mentioned was that the resources developed by SAS worked as designed and did not allow the FLVS to modify the resources. The FLVS constantly has to keep up with changes to the SAS product to make sure that the links still work and are appropriate for the assignment.

The ID/CD use websites regularly as reinforcement and enhancements rather than the central portion of the lesson or assignment. They find websites established by agencies like the National Aeronautics and Space Administration (NASA), United States Geological Survey (USGS), Public Broadcasting System (PBS), governmental agencies, colleges and the Library of Congress to be stable and encourage the use of these types of resources because they are in the public domain.

One designer interviewed suggested that they like to use resources that are respected and present various points of view. Sometimes they present a certain topic through the viewpoint of newspaper articles from around the country. Other times ID/CD will purposely select a resource that shows bias and then select a second resource that shows the other point of view.

When asked how the FLVS uses the Florida Electronic Library, one developer detailed their problems with its use. Even though this service is free to the FLVS, they cannot use it when a course is being leased or sold to another state or school district. Respondents mentioned that the FLVS needs to have access to some type of library service and may try to fill this need through an agreement with Questia.
Results gathered from the Instructional designers/curriculum developers (ID/CD) online survey and displayed in Table 15 indicates the importance FLVS ID/CD place on student access to resources. Participants were asked to assess the importance of ease of access when selecting a resource for inclusion in a course, when using an information service (i.e., BrainPOP, United Streaming, etc.), and when using an information resource (e.g., textbook, website, article, etc.).

Table 15 - ID/CD Ease of Access to Information Resources and Services

<table>
<thead>
<tr>
<th>ID/CD Question</th>
<th>When using information resources, how important is ease of access when selecting a resource for inclusion in a course?</th>
<th>Extremely Important</th>
<th>Very Important</th>
<th>Often Important</th>
<th>Somewhat Important</th>
<th>Not Important</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID/CD Question</td>
<td>When using an information service (i.e., Brain POP, United Streaming, etc.), how important is ease of access when using the service to select resources for inclusion in a course?</td>
<td>Extremely Important</td>
<td>Very Important</td>
<td>Often Important</td>
<td>Somewhat Important</td>
<td>Not Important</td>
<td>Response Average</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID/CD Question</td>
<td>When using an information resource (e.g., textbook, website, article, etc.), how important is it for the resource to be in a digital format?</td>
<td>Extremely Important</td>
<td>Very Important</td>
<td>Often Important</td>
<td>Somewhat Important</td>
<td>Not Important</td>
<td>Response Average</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Response Average (1=Extremely and 5=Not).

Florida Virtual School Teachers

Since FLVS teachers were not interviewed, the following section presented in tables 16-21 includes results gleaned from the online survey administered to 308 FLVS teachers and is based on a total of 147 teacher respondents.
**Information Seeking**

*Berrypicking search scenario.*

In order to determine whether the information-seeking behavior of the FLVS teachers could be explained by the application of Bates’ berrypicking model, participants were presented with the two search process scenarios listed in Table 16. Scenario “A” was designed to present the search process in a linear format, while scenario “B” was based upon a representation of Bates’ berrypicking model. The majority of the teachers choose the berrypicking method of information seeking in these overall scenarios (see Table 20).

<table>
<thead>
<tr>
<th>Scenario A:</th>
<th>Search for one type of material or one subject at a time, evaluate what I find, and then move on to another type.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario B:</td>
<td>Search through a variety of materials, identifying useful information and references throughout the search process, but not necessarily limiting my search to one type of material or one subject at a time.</td>
</tr>
</tbody>
</table>

In order to test the two scenarios for reliability, both scenarios presented in Table 16 were broken into their sub components and presented to the teachers through an online survey. Table 17 indicates the results of the first sub component of the search process scenario involving FLVS teachers. Scenario A1 in Table 17 represents the sub component of the linear search process, while scenario B1 corresponds to a sub component of the Bates’ berrypicking search process.
Table 17 - Search Process Scenarios Sub Component 1

<table>
<thead>
<tr>
<th></th>
<th>Search Process Scenario</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A1:</td>
<td>Focus my search on one type of <strong>material</strong> at a time.</td>
<td>36 (25.2%)</td>
</tr>
<tr>
<td>Scenario B1:</td>
<td>Search through a variety of <strong>materials</strong>, moving back and forth among types.</td>
<td>107 (74.8%)</td>
</tr>
<tr>
<td></td>
<td>Total Respondents</td>
<td>N=143</td>
</tr>
</tbody>
</table>

Note: Four teachers skipped this question.

Table 18 presents the results of the second sub component of the search process scenario involving FLVS teachers. Scenario A2 in Table 18 represents the sub component of the linear search process, while scenario B2 corresponds to a sub component of the Bates’ berrypicking search process. Note that this is the one scenario on which the teachers departed from the berrypicking model of information seeking.

Table 18 - Search Process Scenarios Sub Component 2

<table>
<thead>
<tr>
<th></th>
<th>Search Process Scenario</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A2:</td>
<td>Focus my search on one <strong>subject</strong> at a time.</td>
<td>103 (72.0%)</td>
</tr>
<tr>
<td>Scenario B2:</td>
<td>Search on a variety of <strong>subjects</strong> at a time, moving back and forth among topics.</td>
<td>40 (28.0%)</td>
</tr>
<tr>
<td></td>
<td>Total Respondents</td>
<td>N=143</td>
</tr>
</tbody>
</table>

Note: Four teachers skipped this question.

Table 19 provides the results of the third and final sub component of the search process scenario involving the FLVS ID/CD. Scenario A3 in Table 19 represents the sub component of the linear search process, while scenario B3 corresponds to a sub component of the Bates’ berrypicking search process.
Table 19 - Search Process Scenarios Sub Component 3

<table>
<thead>
<tr>
<th>Search Process Scenario</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A3: Evaluate what I find before moving on to another type of material.</td>
<td>40 (28.2%)</td>
</tr>
<tr>
<td>Scenario B3: Evaluate materials as I locate them and sometimes locate several and then evaluate them individually or comparatively.</td>
<td>102 (71.8%)</td>
</tr>
<tr>
<td><strong>Total Respondents</strong></td>
<td><strong>N=142</strong></td>
</tr>
</tbody>
</table>

Note: Five teachers skipped this question.

After answering three questions representing three separate sub components of the two search process scenarios, FLVS teachers were presented with the complete search process for both scenarios. Table 20 displays the results of the complete search process for both scenarios for FLVS teachers.

Table 20 - Search Process Scenario Results

<table>
<thead>
<tr>
<th>Search Process Scenario</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A: Search for one type of material or one subject at a time, evaluate what I find, and then move on to another type.</td>
<td>53 (37.9%)</td>
</tr>
<tr>
<td>Scenario B: Search through a variety of materials, identifying useful information and references throughout the search process, but not necessarily limiting my search to one type of material or one subject at a time.</td>
<td>87 (62.1%)</td>
</tr>
<tr>
<td><strong>Total Respondents</strong></td>
<td><strong>N=140</strong></td>
</tr>
</tbody>
</table>

Note: Seven teachers skipped this question.

**Training In search techniques.**

The majority of teachers at the FLVS rely upon self-taught search techniques when seeking out online information resources. Results gathered from the online survey
and displayed in Table 21 indicate the current status of training in search techniques for FLVS teachers. Thirteen teacher respondents who selected “other” stated that they relied upon both previous FLVS training and self-taught skills. One teacher relied upon skills gained through a Master of Science degree in technology, and another teacher stated that this question fell outside of their area of responsibility at the FLVS.

Table 21 - Respondents by Training in Search Techniques at the Florida Virtual School

<table>
<thead>
<tr>
<th>Search Techniques</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rely upon training provided by the Florida Virtual School in search techniques.</td>
<td>14 (10.0%)</td>
</tr>
<tr>
<td>Rely upon my own self-taught (i.e., learn as you go) search techniques.</td>
<td>111 (79.3%)</td>
</tr>
<tr>
<td>Other</td>
<td>15 (10.7%)</td>
</tr>
<tr>
<td><strong>Total Respondents</strong></td>
<td><strong>N=140</strong></td>
</tr>
</tbody>
</table>

Note: Seven teachers skipped this question.

Seeking out supplemental information resources.

Due to the fact that the majority of resources are selected and embedded within FLVS courses during the design phase and FLVS teachers are not able to modify the course content, instructional designers/course developers (ID/CD) were asked during phone interviews to provide knowledge of how FLVS teachers sought out and used supplemental and or additional information resources from those supplied by the ID/CD. The knowledge provided by the ID/CD ranged from that of the FLVS teachers not having time to seek out supplemental information resources to specific interactions recounted by the phone interview respondents.

The ID/CD interviewed noted that FLVS teachers often collected ideas for supplemental resources through attending conferences, communicating with other FLVS veteran or mentor teachers, while also receiving resource ideas from electronic discussion groups and the Internet. The interview respondents also mentioned that FLVS teachers often contacted the curriculum specialists to see if there were any resources that might
assist them with their current module or lesson. It was also mentioned during interviews that most teachers or departments at the FLVS have developed their own special knowledge bases that they usually search to help answer certain types of questions and provide extra resources to assist students who are having a hard time grasping the concept being taught (see Table 22). Finally, when asked whether FLVS teachers received a list of supplemental resources separate from those visible to the students, the respondents noted that the teachers do not.

Table 22 - Teachers’ Use of FLVS Developed Knowledge Bases

<table>
<thead>
<tr>
<th>Teacher Question</th>
<th>How important is a teacher- or department-developed knowledge base that contains answers to certain types of questions and supplemental resources?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely Important</td>
</tr>
<tr>
<td>Extrememly</td>
<td>56</td>
</tr>
<tr>
<td>Important</td>
<td>(44.4%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=126</td>
</tr>
</tbody>
</table>

Note: Twenty-one teachers skipped this question. Response Average (1=Extremely and 5=Not).

Based on background information provided by the ID/CD during phone interviews, FLVS teachers were asked through a survey to identify places that they might use when seeking out supplemental and/or additional information resources from those supplied by the ID/CD. Table 23 presents the results of possible locations that FLVS teachers might use when seeking out supplemental and/or additional information resources.
Table 23 - Teachers by Source of Supplemental Information Resources

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequently (5+ Times)</th>
<th>Sometimes (2-4 Times)</th>
<th>Seldom (1 Time)</th>
<th>Never (0 Times)</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLVS Purchased Resources</td>
<td>31 (23.5%)</td>
<td>59 (44.7%)</td>
<td>27 (20.5%)</td>
<td>15 (11.4%)</td>
<td>2.20</td>
</tr>
<tr>
<td>The Florida Electronic Library</td>
<td>2 (1.5%)</td>
<td>9 (6.8%)</td>
<td>26 (19.7%)</td>
<td>95 (72.0%)</td>
<td>3.62</td>
</tr>
<tr>
<td>Public Library</td>
<td>8 (6.1%)</td>
<td>29 (22.1%)</td>
<td>33 (25.2%)</td>
<td>61 (46.6%)</td>
<td>3.12</td>
</tr>
<tr>
<td>Community College Library</td>
<td>1 (0.8%)</td>
<td>5 (3.8%)</td>
<td>14 (10.6%)</td>
<td>112 (84.8%)</td>
<td>3.80</td>
</tr>
<tr>
<td>University/College Library</td>
<td>8 (6.1%)</td>
<td>18 (13.6%)</td>
<td>21 (15.9%)</td>
<td>85 (64.4%)</td>
<td>3.39</td>
</tr>
<tr>
<td>The Internet</td>
<td>108 (81.8%)</td>
<td>18 (13.6%)</td>
<td>2 (1.5%)</td>
<td>4 (3.0%)</td>
<td>1.26</td>
</tr>
<tr>
<td>“Ask a Librarian” Service</td>
<td>2 (1.5%)</td>
<td>9 (6.8%)</td>
<td>22 (16.7%)</td>
<td>99 (75.0%)</td>
<td>3.65</td>
</tr>
<tr>
<td>Other</td>
<td>18 (13.6%)</td>
<td>10 (7.6%)</td>
<td>6 (4.5%)</td>
<td>98 (74.2%)</td>
<td>3.39</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=132</td>
</tr>
</tbody>
</table>

Note: Fifteen teachers skipped this question. Response Average (1=Freq and 4=Never).

Table 24 presents an expanded view of respondents who selected the “other” option in the prior survey question, while choosing to add to the possible list of locations that FLVS teachers might use when seeking out supplemental information resources.

Table 24 - Teachers by Source of “Other” Supplemental Information Resource Locations

<table>
<thead>
<tr>
<th>Frequency</th>
<th>“Other” Sources of Supplemental Information Resource Locations Listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequently (5+ Times)</td>
<td>Personal Library (6), Colleagues/Other Teachers (5), Textbooks (5), Conferences (1), Government Pamphlets/Publications (1), The History Channel (1), Questia (1)</td>
</tr>
<tr>
<td>Sometimes (2-4 Times)</td>
<td>Colleagues/Other Teachers (5), Personal Library (2), ‘Brick-And-Mortar’ Lesson Plans (1), Community Contacts &amp; Resources (1), Links From Professional Educational Organizations (1), Self Developed Resources (1)</td>
</tr>
<tr>
<td>Seldom (1 Time)</td>
<td>Book Store (1), Conferences (1), google.com (1)</td>
</tr>
</tbody>
</table>

Note: Number in parenthesis equals the total responses given for that location.
FLVS teachers were also asked through a survey to identify sources that they might use when seeking out supplemental and/or additional content from that supplied by the ID/CD. Table 25 presents the results of FLVS teachers surveyed regarding the types of resources used when seeking out supplemental and/or additional content.

Table 25 - Teachers by Source of Supplemental Content

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequently (5+ Times)</th>
<th>Sometimes (2-4 Times)</th>
<th>Seldom (1 Time)</th>
<th>Never (0 Times)</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbooks</td>
<td>22 (17.1%)</td>
<td>50 (38.8%)</td>
<td>26 (20.2%)</td>
<td>31 (24.0%)</td>
<td>2.51</td>
</tr>
<tr>
<td>Printed Books Other Than Textbooks</td>
<td>21 (16.3%)</td>
<td>53 (41.1%)</td>
<td>27 (20.9%)</td>
<td>28 (21.7%)</td>
<td>2.48</td>
</tr>
<tr>
<td>Authoritative Websites</td>
<td>57 (44.2%)</td>
<td>55 (42.6%)</td>
<td>7 (5.4%)</td>
<td>10 (7.8%)</td>
<td>1.77</td>
</tr>
<tr>
<td>Journals</td>
<td>13 (10.1%)</td>
<td>37 (28.7%)</td>
<td>36 (27.9%)</td>
<td>43 (33.3%)</td>
<td>2.84</td>
</tr>
<tr>
<td>eBooks</td>
<td>7 (5.4%)</td>
<td>23 (17.8%)</td>
<td>23 (17.8%)</td>
<td>76 (58.9%)</td>
<td>3.30</td>
</tr>
<tr>
<td>Online Databases</td>
<td>27 (20.9%)</td>
<td>52 (40.3%)</td>
<td>29 (22.5%)</td>
<td>21 (16.3%)</td>
<td>2.34</td>
</tr>
<tr>
<td>Electronic Encyclopedias</td>
<td>19 (14.7%)</td>
<td>51 (39.5%)</td>
<td>32 (24.8%)</td>
<td>27 (20.9%)</td>
<td>2.52</td>
</tr>
<tr>
<td>Other</td>
<td>1 (0.8%)</td>
<td>10 (7.8%)</td>
<td>6 (4.7%)</td>
<td>112 (86.8%)</td>
<td>3.78</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=129</td>
</tr>
</tbody>
</table>

Note: Eighteen teachers skipped this question. Response Average (1=Freq and 4=Never).

Table 26 presents an expanded view of respondents who selected the “other” option in the prior survey question, while choosing to add to the possible list of sources that FLVS teachers might use when seeking out supplemental content.
### Table 26 - Teachers by Source of “Other” Supplemental Content Resources

<table>
<thead>
<tr>
<th>Frequency</th>
<th>“Other” Sources of Supplemental Content Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequently</td>
<td>Podcasts (1)</td>
</tr>
<tr>
<td>(5+ Times)</td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>Colleagues/Other Teachers (4), Conferences (1), Government Sources (1),</td>
</tr>
<tr>
<td>(2-4 Times)</td>
<td>Science Based Magazines (1), Training Materials (1)</td>
</tr>
<tr>
<td>Seldom</td>
<td>N/A</td>
</tr>
<tr>
<td>(1 Time)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Number in parenthesis equals the total responses given for that location.

### Information Use: Supplemental Information Resources

This aspect of teacher involvement was investigated during phone interviews of FLVS instructional designers/course developers (ID/CD). Even though teachers are not allowed to modify course content, they find other ways to meet the instructional needs of their individual students through supplemental or additional information resources.

One of the designers interviewed felt that teachers don’t really use supplemental resources because of time restraints. Others interviewed disagreed and stated that individual teachers have their own knowledge base and seem to share it with students who are having difficulty grasping a concept. In fact one gave a specific example: “A teacher covering the Electoral College and if some of the students didn’t get it because the reading level wasn’t at their level, then the teacher might have another resource that they could send out to those students to help.”

All of the ID/CD interviewed agreed that teachers are encouraged to use other types of supplemental resources with students who might have problems grasping the concept being taught in a certain lesson. Many teachers and departments have developed their own knowledge base to help answer certain types of questions and provide extra resources to assist students who are having a hard time grasping the concept being taught.

In addition to teacher and department-level knowledge bases, as mentioned previously, teachers and students have access to a course information bar. This bar directs them to supplemental resources and includes items like the Library of Congress and how to cite references properly (see Appendix K). Finally, while teachers are not able to
change the course content, ID/CD interviewed mentioned that teachers often use supplemental resources to individualize their courses through the announcement page, white board chats and review sessions.

Table 27 presents the results of the online survey that asked teachers to identify the level of importance in relation to ease of access when using information resources and services. FLVS teachers were asked to determine the importance of selecting a resource to enrich the current course content such as ease of access in using information resources, information services (i.e., BrainPOP, United Streaming, etc.), and information resources (e.g., textbook, website, article, etc.) in a digital format.

Table 27 - Teachers’ Ease of Access to Information Resources and Services

<table>
<thead>
<tr>
<th>Teacher Question</th>
<th>When using information resources to enrich the current course content, how important is ease of access when selecting supplemental resources?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely Important</td>
</tr>
<tr>
<td></td>
<td>65 (50.4%)</td>
</tr>
</tbody>
</table>

Total Respondents N=129

<table>
<thead>
<tr>
<th>Teacher Question</th>
<th>When using an information service (i.e., Brain POP, United Streaming, etc.) to enrich the current course content, how important is ease of access, when using the service to select supplemental resources?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely Important</td>
</tr>
<tr>
<td></td>
<td>75 (58.6%)</td>
</tr>
</tbody>
</table>

Total Respondents N=128

<table>
<thead>
<tr>
<th>Teacher Question</th>
<th>When using an information resource (e.g., textbook, website, article, etc.), to enrich the curriculum, how important is it for the resource(s) to be in a digital format?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely Important</td>
</tr>
<tr>
<td></td>
<td>30 (23.4%)</td>
</tr>
</tbody>
</table>

Total Respondents N=128

Note: Response Average (1=Extremely and 5=Not).
Since FLVS students were not interviewed, the following section presented in tables 28-34 includes results gleaned from the online survey administered to 36 FLVS English II students and is based on a total of 18 student respondents.

**Information Seeking**

**Berrypicking search scenario.**

In order to determine whether the information-seeking behavior of the FLVS students could be explained by the application of Bates’ berrypicking model, participants were presented with the two search process scenarios listed in Table 28. Scenario “A” was designed to present the search process in a linear format, while scenario “B” was based upon a representation of Bates’ berrypicking model. Most of the students chose scenario “B” or the berrypicking model as their overall choice for information seeking (see Table 32).

<table>
<thead>
<tr>
<th>Scenario A:</th>
<th>Search for one type of material or one subject at a time, evaluate what I find, and then move on to another type.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario B:</td>
<td>Search through a variety of materials, identifying useful information and references throughout the search process, but not necessarily limiting my search to one type of material or one subject at a time.</td>
</tr>
</tbody>
</table>

In order to test the two scenarios for reliability, both scenarios presented in Table 28 were broken into their sub components and presented to the students through an online survey. Table 29 indicates the results of the first sub component of the search process scenario involving FLVS students. Scenario A1 in Table 29 represents the sub component of the linear search process, while scenario B1 corresponds to a sub component of the Bates’ berrypicking search process.
Table 29 - Search Process Scenarios Sub Component 1

<table>
<thead>
<tr>
<th>Search Process Scenario</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A1: Focus my search on one type of material at a time.</td>
<td>8 (53.3%)</td>
</tr>
<tr>
<td>Scenario B1: Search through a variety of materials, moving back and forth among types.</td>
<td>7 (46.7%)</td>
</tr>
</tbody>
</table>

Total Respondents  N=15

Note: Three students skipped this question.

Table 30 presents the results of the second sub component of the search process scenario involving FLVS students. Scenario A2 in Table 30 represents the sub component of the linear search process, while scenario B2 corresponds to a sub component of the Bates’ berrypicking search process. Both this response and the one below depart from the berrypicking model, although by only one student.

Table 30 - Search Process Scenarios Sub Component 2

<table>
<thead>
<tr>
<th>Search Process Scenario</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario A2: Focus my search on one subject at a time.</td>
<td>8 (53.3%)</td>
</tr>
<tr>
<td>Scenario B2: Search on a variety of subjects at a time, moving back and forth among topics.</td>
<td>7 (46.7%)</td>
</tr>
</tbody>
</table>

Total Respondents  N=15

Note: Three students skipped this question.

Table 31 provides the results of the third and final sub component of the search process scenario involving the FLVS ID/CD. Scenario A3 in Table 20 represents the sub component of the linear search process, while scenario B3 corresponds to a sub component of the Bates’ berrypicking search process.
Table 31 - Search Process Scenarios Sub Component 3

<table>
<thead>
<tr>
<th>Search Process Scenario</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario A3:</strong> Evaluated what I find before moving on to another type of material.</td>
<td>3 (20.0%)</td>
</tr>
<tr>
<td><strong>Scenario B3:</strong> Evaluate materials as I locate them and sometimes locate several and</td>
<td>12 (80.0%)</td>
</tr>
<tr>
<td>then evaluate them individually or comparatively.</td>
<td></td>
</tr>
</tbody>
</table>

| Total Respondents | N=15                        |

Note: Three students skipped this question.

After answering three questions representing three separate sub components of the two search process scenarios, FLVS students were presented with the complete search process for both scenarios. Table 32 displays the results of the complete search process for both scenarios for FLVS students.

Table 32 - Search Process Scenario Results

<table>
<thead>
<tr>
<th>Search Process Scenario</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario A:</strong> Search for one type of material or one subject at a time, evaluate</td>
<td>4 (26.7%)</td>
</tr>
<tr>
<td>what I find, and then move on to another type.</td>
<td></td>
</tr>
<tr>
<td><strong>Scenario B:</strong> Search through a variety of materials, identifying useful information</td>
<td>11 (73.3%)</td>
</tr>
<tr>
<td>and references throughout the search process, but not necessarily limiting my search</td>
<td></td>
</tr>
<tr>
<td>to one type of material or one subject at a time.</td>
<td></td>
</tr>
</tbody>
</table>

| Total Respondents | N=15                        |

Note: Three students skipped this question.

**Seeking out information resources.**

FLVS English II students who had just completed an open-ended research assignment were asked through a survey to identify places that they might obtain
resources from when completing assignments during the semester surveyed. Table 33 presents the results of FLVS students surveyed regarding the location of resources used when seeking out information to complete assignments. Students who selected the “other” option in the survey question noted that they frequently relied upon bookstores (i.e., Barnes & Noble and Borders), while they sometimes relied upon history books that they owned and encyclopedias.

Table 33 - Students by Source of Information Resources

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequently (5+ Times)</th>
<th>Sometimes (2-4 Times)</th>
<th>Seldom (1 Time)</th>
<th>Never (0 Times)</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Virtual School</td>
<td>14 (88.0%)</td>
<td>2 (12.0%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>1.13</td>
</tr>
<tr>
<td>Local School Library</td>
<td>0 (00.0%)</td>
<td>1 (06.0%)</td>
<td>3 (19.0%)</td>
<td>12 (75.0%)</td>
<td>3.69</td>
</tr>
<tr>
<td>Public Library</td>
<td>4 (25.0%)</td>
<td>3 (19.0%)</td>
<td>3 (19.0%)</td>
<td>6 (38.0%)</td>
<td>2.69</td>
</tr>
<tr>
<td>Community College Library</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>1 (06.0%)</td>
<td>15 (94.0%)</td>
<td>3.94</td>
</tr>
<tr>
<td>University/College Library</td>
<td>0 (00.0%)</td>
<td>1 (06.0%)</td>
<td>1 (06.0%)</td>
<td>14 (88.0%)</td>
<td>3.81</td>
</tr>
<tr>
<td>The Internet</td>
<td>12 (75.0%)</td>
<td>3 (19.0%)</td>
<td>1 (06.0%)</td>
<td>0 (00.0%)</td>
<td>1.31</td>
</tr>
<tr>
<td>“Ask a Librarian” Service</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>16 (100%)</td>
<td>4.00</td>
</tr>
<tr>
<td>Other</td>
<td>2 (12.0%)</td>
<td>4 (25.0%)</td>
<td>0 (00.0%)</td>
<td>10 (62.0%)</td>
<td>3.13</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=16</td>
</tr>
</tbody>
</table>

Note: Two students skipped this question. Response Average (1=Freq and 4=Never).

FLVS English II students were also asked to identify individuals that they relied upon while completing their assignments during the semester surveyed. Table 34 presents the results of the FLVS students surveyed, while students who selected the “other” option below noted that they frequently relied upon friends as a source of information.
Table 34 - Students by Reliance on Individuals as Sources of Information

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequently (5+ Times)</th>
<th>Sometimes (2-4 Times)</th>
<th>Seldom (1 Time)</th>
<th>Never (0 Times)</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current FLVS Course Teacher</td>
<td>9 (60.0%)</td>
<td>3 (20.0%)</td>
<td>1 (07.0%)</td>
<td>2 (13.0%)</td>
<td>1.73</td>
</tr>
<tr>
<td>Current High School Library Media Specialist</td>
<td>0 (00.0%)</td>
<td>1 (07.0%)</td>
<td>0 (00.0%)</td>
<td>14 (93.0%)</td>
<td>3.87</td>
</tr>
<tr>
<td>Local Public Librarian</td>
<td>1 (07.0%)</td>
<td>1 (07.0%)</td>
<td>0 (00.0%)</td>
<td>13 (87.0%)</td>
<td>3.67</td>
</tr>
<tr>
<td>My Parent(s)</td>
<td>6 (40.0%)</td>
<td>6 (40.0%)</td>
<td>1 (07.0%)</td>
<td>2 (13.0%)</td>
<td>1.93</td>
</tr>
<tr>
<td>“Ask a Librarian” Service</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>1 (07.0%)</td>
<td>14 (93.0%)</td>
<td>3.93</td>
</tr>
<tr>
<td>Other</td>
<td>1 (07.0%)</td>
<td>1 (07.0%)</td>
<td>0 (00.0%)</td>
<td>13 (87.0%)</td>
<td>3.67</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=15</td>
</tr>
</tbody>
</table>

Note: Three students skipped this question. Response Average (1=Freq and 4=Never).

Influencing Factors

The following section focuses on influencing factors related to the information-seeking behavior of the staff and students of the FLVS. In order to provide further insight, the following research questions were proposed: how is information literacy integrated into courses designed by the FLVS staff and how does this affect the student’s ability to seek out and use information resources and services; and how do selected demographics such as educational background, experience, gender, age, instructional subject areas and students’ current educational environment affect the Florida Virtual School’s staff and students when seeking out and using information resources and services?

The questions proposed above are addressed in this section through an interpretation of responses received from phone interviews, online surveys and documents collected with a purposeful sample.

Information Literacy

A possible influencing factor involved in the information-seeking behavior of a virtual school is the teaching of information literacy. In order to better understand the role that information literacy plays in the FLVS, respondents were asked to address the importance of integrating the teaching of information literacy as well as their current awareness and knowledge of the Florida student information literacy descriptors.
The Integration of Information Literacy

Information literacy and how it is incorporated in the FLVS was part of the phone interviews with administrators and instructional designers/course developers (ID/CD). Respondents noted that information literacy components are incorporated in all or nearly all of the FLVS courses. They also recognize that students are asked to locate and evaluate information. One administrator noted that information literacy is a big challenge for the FLVS because there is so much information available and so many resources that students need to be taught how to use. The learning community in general faces a big challenge to teach a student how to recognize that they need a resource and then how to find it and be proactive enough to evaluate whether or not it is going to help them. This is an ongoing issue between the teachers and the students and the FLVS is always looking for ways that they can better prepare the students for not only online learning, but also to take relevant information and use it to complete their projects or in the end be able to master the standards.

When asked during phone interviews if any information literacy assessment tests (i.e., iSkills, and Tool for Real-time Assessment of Information Literacy Skills (Trails)) were administered to FLVS students, respondents noted that they do not.

Another aspect of information literacy was mentioned by one of the ID/CDs. This respondent felt that there were information literacy components in almost all of the courses at the FLVS, as it is part of the 21st Century Skills. Another ID/CD mentioned that many of their lessons asked the students to manipulate the information and not simply regurgitate it. The students are also given multiple opportunities to present their information in various formats (i.e., brochure, newsletter, video, PowerPoint presentation, interview, etc.).

According to another ID/CD, all FLVS social studies courses contain a research component. These research components vary in complexity from course to course within the social studies discipline. ID/CD often try to give the students parameters when designing a research component (i.e., possible research areas and places to go to get further information needed to complete the assignment), but there are some components that are more open to free searching on the student’s part. The FLVS has found that
parents do not want their students hunting in the uncontrolled world of the Internet when completing a research assignment.

Table 35 presents the results of FLVS administrators surveyed regarding their level of involvement in promoting the integration of information literacy into the curriculum at the FLVS.

Table 35 - Administrative Respondents by Level of Involvement in Integrating Information Literacy

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>How involved are you in promoting the integration of information literacy into the curriculum?</th>
<th>Always Involved (0%)</th>
<th>Frequently Involved (16.7%)</th>
<th>Occasionally Involved (25.0%)</th>
<th>Rarely Involved (25.0%)</th>
<th>Never Involved (33.3%)</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N=12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Similar to the question posed above, results gathered from the online survey and displayed in Table 36 indicate the current level of importance noted by FLVS ID/CD when integrating the teaching of information literacy into the FLVS curriculum.

Table 36 - ID/CD Respondents by Level of Importance for Teaching Information Literacy

<table>
<thead>
<tr>
<th>ID/CD Question</th>
<th>How important is integrating the teaching of information literacy?</th>
<th>Extremely Important (27.3%)</th>
<th>Very Important (54.5%)</th>
<th>Often Important (9.1%)</th>
<th>Somewhat Important (9.1%)</th>
<th>Not Important (0%)</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2.00</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=11</td>
</tr>
</tbody>
</table>

Response Average (1=Extremely and 5=Not).
Finally, FLVS teachers were also surveyed in regards to the importance of ID/CD integrating information literacy into the courses that they teach. The results gathered from the online survey are displayed in Table 37 below.

![Table 37 - Teacher Respondents by Level of Importance for Integrating Information Literacy](image)

**Florida Student Information Literacy Descriptors**

Another possible influencing factor involved in the information-seeking behavior of a virtual school, and directly related to the topic of information literacy, is current awareness and knowledge of the Florida student information literacy descriptors. In order to better understand the role that the Florida student information literacy descriptors play at the FLVS, respondents were asked to address the importance of integrating the Florida student information literacy descriptors into the curriculum.

The FLVS administrators and ID/CD responded to a question about the “Information Literacy Descriptors” developed by Florida district media supervisors and Florida Department of Education staff members during phone interviews. None of the respondents had ever seen the descriptors, while one ID/CD had heard of them, but not seen them. Many of the respondents suggested that they align their courses with the Sunshine State Standards and update their courses as the Standards are updated, but had no knowledge of the document created by Florida district media supervisors and Florida Department of Education staff members.
After phone interviews were conducted with FLVS administrators, a question was developed for the online survey to further investigate the level of involvement by administrators beyond those interviewed. Table 38 indicates the level of involvement by FLVS administrators in promoting the integration of the Florida student information literacy descriptors into the curriculum.

Table 38 - Administrative Level of Involvement in Florida Student Information Literacy Descriptors

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>How involved are you in promoting the integration of the Florida Students Information Literacy Descriptors into the curriculum?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always Involved</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Always and 6=Not Aware of Them).

Finally, FLVS ID/CD were also questioned regarding the level of importance that they placed on integrating the Florida student information literacy descriptors into courses developed at the FLVS. Table 39 expands upon the question posed during phone interviews conducted and presents the responses gathered beyond the ID/CD interviewed.
Table 39 - ID/CD Level of Importance for The Florida Student Information Literacy Descriptors

<table>
<thead>
<tr>
<th>ID/CD Question</th>
<th>How important is the integration of the Florida Student Information Literacy Descriptors?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely Important</td>
</tr>
<tr>
<td></td>
<td>2 (18.2%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
</tr>
</tbody>
</table>

Note: Response Average (1=Extremely and 6=Not Aware of Them).

Staff and Student Demographics

Another possible influencing factor involved in the information-seeking behavior of a virtual school, are staff and student demographics. Demographic questions were posed to FLVS administrators, instructional designers/course developers (ID/CD) and teachers that focused on age, gender, level of education, years of employment at the FLVS and at ‘brick-and-mortar’ schools. Further demographic questions were specific to FLVS teachers and included their teaching subject area, whether FLVS teachers had worked at a ‘brick-and-mortar’ school that employed a school library media specialist and their level of collaboration with the ‘brick-and-mortar’ school library media specialist. Other demographic questions were posed specifically to FLVS students that involved the type of high school that they attended (i.e., home school, public or private), number of virtual courses taken through the FLVS and their Florida residency status.

The only research question related to these demographics was their relationship to linear or berrypicking searching. There were not enough participants related to any responses to make a Chi Square analysis possible except for FLVS teachers. When the Chi Square was run for FLVS teachers (see Table 40) there was no significant relationship between any demographic and their information-seeking mode.
Table 40 - Results of Chi Square Analysis of Teacher Demographics by Berrypicking and Linear Search Scenarios

<table>
<thead>
<tr>
<th>FLVS Teacher Demographics</th>
<th>Chi Square</th>
<th>Significance (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Range</td>
<td>5.671</td>
<td>.129</td>
</tr>
<tr>
<td>Gender</td>
<td>.046</td>
<td>.831</td>
</tr>
<tr>
<td>Education</td>
<td>1.426</td>
<td>.699</td>
</tr>
<tr>
<td>Experience</td>
<td>4.207</td>
<td>.240</td>
</tr>
<tr>
<td>Years Teaching</td>
<td>4.021</td>
<td>.403</td>
</tr>
<tr>
<td>FLVS Teaching Area</td>
<td>8.690</td>
<td>.369</td>
</tr>
<tr>
<td>‘Brick-and-Mortar’ Teaching Experience</td>
<td>.027</td>
<td>.870</td>
</tr>
<tr>
<td>Media Specialist at ‘Brick-and-Mortar’ School</td>
<td>4.513</td>
<td>.105</td>
</tr>
<tr>
<td>Cooperate with ‘Brick-and-Mortar’ Media Specialist</td>
<td>1.533</td>
<td>.821</td>
</tr>
</tbody>
</table>

Further demographic elements were collected that provide a detailed glimpse of the description of the research study population (see Appendix O). These demographic elements describe the sample in the event that anyone is interested in the breakdown at the FLVS during the time of the case study by age, gender or some other demographic.

**Contextual Issues**

The following section focuses on contextual issues related to the information-seeking behavior of the staff and students of the FLVS. In order to provide further insight, the following research questions were proposed: how have policies at the state educational and legislative levels affected the ability of the staff and students of the FLVS to seek out and use information resources and services; how have budgetary policy issues affected the Florida Virtual School’s ability to seek out and use information resources and services; and how have accreditation issues affected the Florida Virtual School’s ability to seek out and use information resources and services? These three areas, while not the main purpose of the study, are seen as important to the interpretation of the case.

**Educational/Legislative Policy**

A possible contextual issue of interest to this study involves policy issues in the State of Florida that may affect information seeking in a virtual school setting. In order to better understand the role that state level policies play in the FLVS, respondents were
asked to address the areas at which state level policies may affect the ability to seek out and use information resources and services in this type of environment.

**Selection of Information Resources and Services**

Legislative policies highly affect any school, including the Florida Virtual School (FLVS). During phone interviews one of the participants was able to provide insights into the issue of selecting information resources and services for teachers and students. The FLVS is mandated by the State of Florida to serve students in schools that are low performing, rural, and in high minority areas. It was mentioned by one administrator that this population of students may not have access to as high level or sophisticated technology as students from other types of schools and that 50% of the school districts in Florida are listed as rural. The FLVS tries to be very conscious when selecting resources due to Internet connection speeds that might be required to access the resource. Any resources selected must be usable at dial-up connection speeds.

As a public school in the state of Florida, the FLVS is also mandated by the State of Florida to abide by the Consent Decree (Florida Department of Education, 2005). This educational policy requires the FLVS and any other public school in State of Florida to provide equal access to appropriate English language instruction for students in the English for Speakers of Other Languages (ESOL) program. An administrator mentioned during phone interviews that at any one time the FLVS might have between 500 to 600 ESOL students and this in turn affects the selection of resources and services. Due to this large number of ESOL students and parents who may exhibit a low level of proficiency with the English language, a translator is used to translate course resources into the primary language that is spoken at the student’s home.

Finally, the FLVS is also bound to support Florida Statutes (i.e., 1001.42(4)(I) and 1003.57) that require public schools to provide services for Exceptional Student Education (ESE). Interview respondents noted that issues related to ESE students are taken into consideration when selecting information resources and services. Also, FLVS gifted ESE student courses are often individualized by “adding depth, breadth, complexity, or abstractness to the course curriculum and/or adjusting the pace with which the material is presented” (“Bureau of Instructional,” 2004, p. 3).
Table 41 presents the results of FLVS administrators surveyed regarding the frequency at which policies at the state level affect the ability of the staff and students when seeking out information resources and services.

Table 41 - Administrators by Frequency of Policies at the State Level Affecting Seeking

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>How often do policies at the state level affect the ability of staff when seeking out information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>Always</td>
<td>1 (8.3%)</td>
</tr>
<tr>
<td>Frequently</td>
<td></td>
</tr>
<tr>
<td>Occasionally</td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>How often do policies at the state level affect the ability of students when seeking out information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>Always</td>
<td>1 (8.3%)</td>
</tr>
<tr>
<td>Frequently</td>
<td></td>
</tr>
<tr>
<td>Occasionally</td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td></td>
</tr>
</tbody>
</table>

Total Respondents: N=12

Note: Response Average (1=Always and 5=Never).

Associated with the information displayed above, ID/CD were asked about the frequency of policies at the state level affecting their ability to seek out information resources and services when designing a course. ID/CD were also asked to respond to the affect of state level policies in regards to the ability of students being able to seek out information resources and services at the FLVS. Table 42 presents the results of these two areas below.
Table 42 - ID/CD by Frequency of Policies at the State Level Affecting Seeking

<table>
<thead>
<tr>
<th>ID/CD Question</th>
<th>How often do policies at the state level affect your ability to seek out information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>Always</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>ID/CD Question</td>
<td>How often do policies at the state level affect the ability of students when seeking out information resources and services?</td>
</tr>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>Always</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=11</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Always and 5=Never).

**Use of Information Resources and Services**

During phone interviews, none of the administrators mentioned any concerns with policies that affect the use of information resources and services for teachers and students at the Florida Virtual School (FLVS). When asked about whether resources available through Florida Electronic Library were incorporated into courses at the FLVS, one interviewee replied that it was not incorporated due to students attending the FLVS from outside the State of Florida and also leasing/licensing/selling agreements with other states. The FLVS has access to an array of resources and they tended not to include Florida specific resources in the courses.

When asked whether the FLVS is required to run any type of Internet filtering software in order to obtain Federal e-rate funds, one administrator mentioned that there might be some type of Internet filter in place at the main office building in Orlando, FL, but they were not sure. Another administrator that responded mentioned that they did not run any type of filtering software for the students as the students are primarily accessing the Internet from home and the FLVS is not an Internet service provider (ISP).
Table 43 presents the results of FLVS administrators surveyed regarding the frequency at which policies at the state level affect the ability of the staff and students when using information resources and services.

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>How often do policies at the state level affect the ability of staff to use information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>Administrator Question</td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td></td>
<td>1 (8.3%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>How often do policies at the state level affect the ability of students when using information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td></td>
<td>1 (8.3%)</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Always and 5=Never).

Likewise, ID/CD were surveyed about the frequency of policies at the state level affecting their ability to use information resources and services when designing a course. ID/CD were also asked to respond to the affect of state-level policies in regards to the ability of students being able to use information resources and services at the FLVS. Table 44 presents the results of these two areas below.
Table 44 - ID/CD by Frequency of Policies at the State Level Affecting Use

<table>
<thead>
<tr>
<th>ID/CD Question</th>
<th>How often do policies at the state level affect your ability to seek out information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>ID/CD Question</td>
<td>1 (9.1%)</td>
</tr>
</tbody>
</table>

ID/CD Question: How often do policies at the state level affect the ability of students when seeking out information resources and services?

|                                                                                | Always (More than once a month) | Frequently (About once a month) | Occasionally (Less than once a month) | Rarely (Less than once a month) | Never | Response Average |
|--------------------------------------------------------------------------------| 0 (0.0%)                        | 1 (9.1%)                        | 0 (0.0%)                             | 8 (72.7%)                       | 2 (18.2%) | 4.00 |

Total Respondents: N=11

Note: Response Average (1=Always and 5=Never).

Budgetary Policy

Another contextual issue of interest to this study involved budgetary policy issues in the State of Florida that may affect information seeking in a virtual school setting. In order to better understand the role that state-level budgetary policies play in the FLVS, respondents were asked to address the frequency at which state level budgetary policies may affect their ability to seek out and use information resources and services at the FLVS.

Administrative View of State Funding Policy Issues: Seeking Out

Funding issues affect the ability of schools to fulfill their mission as well as the mission to provide quality information resources and services. Four key administrators were interviewed to determine which State funding issues affect the FLVS and its ability to select information resources and services for their teachers and students. Most of those interviewed agreed that they did not receive four of the state categoricals (i.e., transportation, exceptional student education, supplemental academic instruction and facilities funding). The FLVS does receive the state library media allocation for instructional materials, just as other public ‘brick-and-mortar’ schools do in the state of Florida.
An issue mentioned by two administrators concerned companies who currently produce resources for traditional ‘brick-and-mortar’ schools trying to sell the same products to the FLVS. Respondents mentioned that many electronic resources that are sold to schools are done so by offering a site license at a reduced price, but that the site license is only valid when used within a single structure, or building. Sales representatives for these various products have a hard time understanding that the FLVS is not located in one physical building and therefore the established pricing structure for these various products does not cover an educational institution like the FLVS.

Another funding based issue mentioned by administrators focused on the FLVS performance-based funding formula that has replaced the previous state of Florida Department of Education line item funding. With performance-based budgeting, the FLVS has considerable control over how much money comes into the FLVS based on the number of “course completions” they have. This helps the FLVS provide further resources to the students, while imposing fewer constraints when compared to the traditional school setting. The FLVS is considered its own entity and school district, which receives funding for all of the students who complete their courses. Funding for the school is received in July, October and February just like other Florida school districts that receive their full-time equivalent (FTE) funding. Unlike a traditional school where the principal is trying to get as many students as possible to show up in October to increase funding, the FLVS does not suffer from this problem. The FLVS simply reports their course completions during each of the three reporting periods and then receives funding based on those figures. In the school year 2006-2007 the FLVS budget was based on 39,000 student completions and it received $900+ per student completion. The FLVS also has the flexibility in setting the course enrollment goal each year and can increase funding at will by simply increasing the course enrollment goal and therefore provide further resources and services to the students.

Another funding policy issue mentioned by administrators focused on the global services arm of the FLVS. This portion of the school provides even more resources for the school by charging students outside of the State of Florida to take courses, while also handling the sale of courses to other districts, states and other countries. As of July 10, 2007, the FLVS announced the launch of the Florida Virtual Global School
(http://www.flvsps.net/) as an extension of the FLVS and expansion of the original global services arm of the school. Past funding policies have also granted the FLVS the ability to sell franchises and courses to entities from both within and outside of the State of Florida.

Finally, associated with this area, administrators were asked during phone interviews if anyone had tried to place a cap on the student course enrollment goal to help control costs. Administrative respondents mentioned that they didn’t think that would occur since the State Department of Education in Florida would like to see the FLVS grow even faster than it is currently. Respondents also mentioned that fast-paced growth is not a priority for the FLVS at this time, since it would come at a cost and would likely affect the overall quality of the school.

Table 45 presents the results of FLVS administrators surveyed regarding budgetary policy issues at the state level affecting the FLVS when seeking out information resources and services.

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>How often do budgetary policy issues at the state level affect the ability of the Florida Virtual School when seeking out information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=12</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Always and 5=Never).
Instructional Designers/Course Developers View of State Funding Policy

Issues: Seeking Out

The instructional designers/course developers (ID/CD) phone interviews provided guidance concerning funding issues that affect their ability to select information resources and services. Respondents interviewed mentioned that they were more concerned with content than cost. One of the respondents stated that they don’t really want to know what a resource or service might cost until it has been demonstrated. Then usually after viewing the demonstration and explaining to the vendor how they would like to use their product, they will often approach the vendor and see if they would like to partner with the FLVS. Another issue mentioned by respondents focused on vendors not producing enough interactive/simulations and content that is useful and in a price range that a public high school could afford.

When asked about the area of seeking resources in relation to funding policy issues, the respondents mentioned the word “free” often. Any purchased resource that might be included in a course goes through a cost analysis to weigh the costs versus the benefits to the student. If funds are short, then the FLVS is obviously going to use fewer paid resources.

Another area mentioned during interviews involving funding and the seeking out of resources focused on the number of lost physical resources. While the FLVS prefers to have items in a digital/electronic format, hard copy items are still sent out to students in certain courses. Respondents mentioned that they have a high loss rate with students not returning the physical resources. Since the FLVS is not like a ‘brick-and-mortar’ school, they cannot hold the student’s diploma, prom ticket or cap and gown to try and retrieve the materials.

When questioned further about whether the ID/CD focused more on selecting free resources as opposed to paid ones, the respondents said that free is always good, but there are some items that need to be purchased to obtain the correct resource. ID/CD also noted that some courses that are developed cost more due to the resources needed to support them.

ID/CD were also asked during interviews about selecting items like textbooks. Whenever possible the FLVS does not use a textbook as the ID/CD view textbooks as
being “boring.” However, phone interview respondents did mention that recent policy changes with the Advanced Placement (AP) College Board courses offered through the FLVS have caused the ID/CD to redesign many of the AP courses to use a textbook. The new policy change requires schools that participate and offer AP courses to demonstrate that they are using the required college level texts and materials.

Finally, when questioned about issues raised in the Office of Program Policy Analysis and Government Accountability (OPPAGA) Report that mentioned the possibility of grade inflation occurring under the new performance-based funding mechanism, respondents felt the necessary steps were in place to keep this from occurring. The leadership of the FLVS has taken steps to make sure that grade inflation does not occur and that students are not given passing grades just to collect funding. There is also a mechanism in place to ensure that when students complete a module they are randomly expected to complete an oral exam with the teacher to make sure that they have done the work.

Table 46 presents the results of FLVS ID/CD surveyed regarding the budgetary policy issues at the state level affecting the FLVS when seeking out information resources and services.

Table 46 - ID/CD by Frequency of Budgetary Issues Affecting Seeking

<table>
<thead>
<tr>
<th>ID/CD Question</th>
<th>How often do budgetary policy issues affect your ability to seek out information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>0 (0.0%)</td>
<td>2 (18.2%)</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Always and 5=Never).
Administrative View of State Funding Policy Issues: Use

The funding issues that affect the FLVS’s ability to use information resources and services focus on the State of Florida instructional materials money. Administrators interviewed noted that the instructional materials funding is used to purchase additional student materials that may include subscriptions, CDs and in some cases print based materials. Sixty-five percent of the FLVS Full-Time Equivalent (FTE) funding is used to directly support instruction (i.e., teachers and students) at the FLVS.

In the past the FLVS has sent some type of external physical resource to the students, but that policy is now changing because the courses are becoming much more self-contained and less dependent upon physical resources. Materials sent in the past consisted of items such as paperback novels, CDs, DVDs and/or various types of software.

When purchasing items such as software, respondents mentioned that it was a matter of deciding what they wanted to accomplish and then figuring out where it fit in the budget. Software-based items that are purchased with instructional materials funds include SAS InSchool Curriculum Pathways, United Streaming, the FLVS Learning Management System (LMS) (i.e., UCompass Educator), Wimba (i.e., used by Spanish teachers at the FLVS), Elluminate (i.e., used for online student tutoring service), and Turn-It-in.com (i.e., used for student academic integrity). The School also purchases other types of software because they are building up to provide other foreign languages beyond Spanish and Latin. At the time of the phone interviews, only five or six of the FLVS courses were textbook based and those were mainly advanced placement courses. These textbook-based courses either use a CD-based textbook, or online textbook, with the final three or four courses still using a physical textbook that is shipped to the student.

Finally, another concern related to funding policy issues is the area of grade inflation. As a possible side effect of the performance-based funding mechanism in the OPPAGA report, it was mentioned by respondents that they had many checks and balances and access to real time data to keep this from happening. Administrative staff supervises the teachers very closely and many reports are generated to determine what is happening with grading. They look for any type of irregularities in terms of students
finishing the course more quickly than they should. Oral assessments are required as well as benchmark assessments like the semester exams and other projects completed online.

Table 47 presents the results of FLVS administrators surveyed regarding budgetary policy issues at the state level affecting the FLVS when using information resources and services.

Table 47 - Administrators by Frequency of Budgetary Issues Affecting Use

<table>
<thead>
<tr>
<th>Administrator Question</th>
<th>How often do budgetary policies at the state level affect your ability when using information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>1 (8.3%)</td>
<td>1 (8.3%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>123</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Always and 5=Never).

Instructional Designers/Course Developers View of State Funding Policy Issues: Use

Only one of the instructional designers/course developers (ID/CD) responded to this question through the phone interview process. The only concern raised by this respondent was that the cost be reasonable for the resource that they wanted to purchase and use. Once this had taken place then the resource would be approved for purchase. The respondent felt that the FLVS was very open to including various resources and services as long as they could demonstrate how it was going to benefit the students. It was also mentioned by the ID/CD that there was considerable competition between companies trying to participate in online learning that assisted in keeping the costs at more affordable level. The ID/CD interviewed had never found an online resource or service that needed to be included in a course that was outrageously priced.
Table 48 presents the results of FLVS ID/CD surveyed regarding the budgetary policy issues at the state level affecting the FLVS when using information resources and services.

<table>
<thead>
<tr>
<th>ID/CD Question</th>
<th>How often do budgetary policy issues at the state level affect your ability to use information resources and services?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always (More than once a month)</td>
</tr>
<tr>
<td>0 (0.0%)</td>
<td>2 (18.2%)</td>
</tr>
</tbody>
</table>

Total Respondents N=11

Note: Response Average (1=Always and 5=Never).

Accreditation

The final contextual issue of interest to this study involved possible accreditation issues that might affect information seeking in a virtual school setting. In order to better understand the role that accreditation issues play in the FLVS, respondents were asked to address the areas at which accreditation issues may affect the Florida Virtual School’s ability to seek out and use information resources and services.

The FLVS is accredited through the Commission on International and Trans-Regional Accreditation (CITA) and first received accreditation in 2001. Phone interview respondents mentioned that during the 2006-2007 school year the five-year review process was recently completed (see Appendix M for Florida Virtual School CITA Documentation Response) with one of the administrators interviewed serving as the project manager for the accreditation process. This same respondent who currently serves as the accreditation project manager for the FLVS also assisted with a portion of the original 2001 accreditation report. For further documentation regarding the FLVS accreditation process, see Appendix N for the educational materials portion of the FLVS CITA Accreditation Report.
The following section is split into two parts and focuses on the educational materials standards section of the Commission on International and Trans-Regional Accreditation (CITA). The section on educational materials was added to the CITA guidelines in July of 2005 with respondents noting that this section of the accreditation report was to be completed by the FLVS curriculum services team.

**Accreditation Issues That Affect Selection**

Both administrators and instructional designers/course developers (ID/CD) were interviewed and surveyed about issues focusing on the educational materials portion of the Commission on International and Trans-Regional Accreditation (CITA) accreditation guidelines that focused on the selection of educational materials for the FLVS. The following section focuses on the first educational materials accreditation guideline.

**CITA accreditation standard: 3.2.1 educational materials.**

The CITA Guidelines specify the need to provide evidence to verify that the FLVS has a policy statement concerning the selection of educational materials. CITA Standard 3.2.1 states, “the school adopts and implements a policy concerning the selection of educational materials, which is based on sound educational research and practice” (CITA, 2005, p. 3). Rather than a traditional ‘brick-and-mortar’ school selection policy the FLVS has developed a proprietary rubric. Administrators interviewed stated that they have a policy and deferred to the rubric developed by the ID/CD. The ID/CD interviewed alluded to the rubric and mentioned a few details. As a part of the FLVS five-year interim CITA review to maintain accreditation, the FLVS provided further details of their rubric. The FLVS response stated, “Educational material developed, licensed or purchased from vendors is evaluated according to the FLVS Resource Evaluation rubric which is published in the FLVS Development Handbook” (“Florida Virtual School CITA,” 2007, p. 17). The rubric used for the selection of resources contains the following 10 main criteria listed in Table 49 below. See Appendix N for the complete response provided by the FLVS regarding this specific CITA standard.
Table 49 - Florida Virtual School Resource Evaluation Rubric Criteria

<table>
<thead>
<tr>
<th>• Instructional Content</th>
<th>• Teacher and Learner Support Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Engagement and/or Interactivity</td>
<td>• Adaptability and Accessibility</td>
</tr>
<tr>
<td>• Age/Grade Appropriateness</td>
<td>• Technical Aspects</td>
</tr>
<tr>
<td>• Flexibility</td>
<td>• Client Needs</td>
</tr>
<tr>
<td>• Assessment</td>
<td>• Cost</td>
</tr>
</tbody>
</table>

Source: (“Florida Virtual School CITA,” 2007, p. 17)

In order to provide a greater perspective for this standard, FLVS administrators and course developers/instructional designers (ID/CD) were surveyed regarding their view of how the FLVS is meeting CITA Standard 3.2.1. Table 50 presents the results for this standard below.

Table 50 - Analysis of CITA Standard 3.2.1

Based on the most recent CITA standards that require the school to adopt and implement a policy concerning the selection of educational materials, how would you rate the Florida Virtual School on this quality indicator?

<table>
<thead>
<tr>
<th>Administrators</th>
<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 (25.0%)</td>
<td>4 (33.3%)</td>
<td>2 (16.7%)</td>
<td>0 (00.0%)</td>
<td>3 (25.0%)</td>
<td>2.66</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=12</td>
</tr>
<tr>
<td>ID/CD</td>
<td>Exemplary</td>
<td>Effective</td>
<td>Emerging</td>
<td>Absent</td>
<td>Not Applicable</td>
<td>Response Average</td>
</tr>
<tr>
<td></td>
<td>5 (45.5%)</td>
<td>2 (18.2%)</td>
<td>3 (27.3%)</td>
<td>0 (00.0%)</td>
<td>1 (09.1%)</td>
<td>2.09</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=11</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Exemplary and 5=Not Applicable).

Finally, an examination of the FLVS educational materials portion of the CITA accreditation report found that the FLVS was cited as making effective progress in regards to CITA standard 3.2.1 (see Appendix N).
Accreditation Issues That Affect Use

While the FLVS is not required to have a physical library like a traditional school, they are still required to show how they provide resources for use by the students. Both administrators and instructional designers/course developers (ID/CD) were also interviewed and surveyed about issues focusing on the educational materials portion of the CITA accreditation guidelines that focused on the use of educational materials for the FLVS. The following section focuses on the remaining educational materials accreditation guidelines.

**CITA accreditation standard: 3.2.2 educational materials.**

CITA Standard 3.2.2 states, “The instructional materials are selected to support the specific objectives of the individual course, as well as the overall mission and goals of the school” (CITA, 2005, p. 3). Several of the ID/CD interviewed felt that they were definitely meeting Standard 3.2.2. Respondents mentioned that the resources selected definitely supported the objectives and standards of the courses at the FLVS. One example given by one of the ID/CD interviewed was a program called **MathType**. This program is used to create equations for math courses at the FLVS and directly supports the courses where the program is used.

The FLVS responded to the five-year interim CITA group that they base their courses on the Sunshine State Standards, Florida’s Goal 3 Standards, relevancy, multiple modalities, and budget allocations for materials. They also reiterate that these criteria are included in the Course Development Guidelines and Resource Evaluation Rubric. The FLVS has a philosophy that instruction should be relevant and should accommodate students’ varied learning styles and types of intelligence.

In order to provide a greater perspective beyond that of the interviews conducted, FLVS administrators and course developers/instructional designers (ID/CD) were surveyed regarding their view of how the FLVS is meeting CITA Standard 3.2.2. Table 51 presents the results for this standard below.
Table 51 - Analysis of CITA Standard 3.2.2

Based on the most recent CITA standards that require the school to *select instructional materials to support the specific objectives of the individual course, as well as the overall mission and goals of the school*, how would you rate the Florida Virtual School on this quality indicator?

<table>
<thead>
<tr>
<th>Administrators</th>
<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 (50.0%)</td>
<td>3 (25.0%)</td>
<td>1 (08.3%)</td>
<td>0 (00.0%)</td>
<td>2 (16.7%)</td>
<td>2.08</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Respondents</th>
<th>N=12</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ID/CD</th>
<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 (54.5%)</td>
<td>4 (36.4%)</td>
<td>1 (09.1%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>1.54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Respondents</th>
<th>N=11</th>
</tr>
</thead>
</table>

Note: Response Average (1=Exemplary and 5=Not Applicable).

Lastly, an examination of the FLVS educational materials portion of the CITA accreditation report found that the FLVS was cited as making effective progress in regards to CITA standard 3.2.2 (see Appendix N).

**CITA accreditation standard: 3.2.3 educational materials.**

CITA Standard 3.2.3 states, “The materials provided to the student are current and match with the course objectives. The reading level of the materials is appropriate to the reading level competence of the students” (CITA, 2005, p. 3).

All of the respondents interviewed felt that the resources incorporated into courses were up-to-date. The School responded to the five-year interim CITA group that a major principle in the FLVS philosophy is that instruction should accommodate students’ varied learning styles and types of intelligence. Student feedback on the module evaluations, on the mid-term survey (anonymous), and district contact and lab facilitators’ observations impact the decision for course revisions. Courses at the FLVS are constantly updated to reflect new technology changes in world events, new benchmarks and standards and changes in teaching resources. Since the FLVS curriculum is dynamic, not static, revisions are made on a continual basis and every course is run through a three-year redevelopment schedule.
Interview respondents also felt that the materials provided to students matched with the course objectives for the students at the FLVS. As evidence towards meeting this standard, the FLVS responded to the five-year interim CITA group that their Course Development guidelines require a scope and sequence be developed in the initial stages of course development. The scope and sequence section of the Course Review Instrument is used to evaluate the instructional material for adequate coverage of the course objectives. A minimum of four internal reviews of the instructional material occurs using the FLVS Course Review Instrument during the process of development. In addition to using the instrument, each module is reviewed by curriculum specialists, subject matter experts, course collaborators, and/or instructional designers. Further evidence provided by the FLVS shows that during final stages of development content/standards specialists (secondary and post-secondary content experts), industry experts and/or instructional design specialists complete external reviews. After a course has been released into the production environment, it is reviewed internally every three years.

In order to expand upon the information gathered through interviews and documents, FLVS administrators and course developers/instructional designers (ID/CD) were surveyed regarding their view of how the FLVS is meeting the first portion of CITA Standard 3.2.3. Table 52 presents the results for this standard below.

Table 52 - Analysis of CITA Standard 3.2.3a

<table>
<thead>
<tr>
<th>Administrators</th>
<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 (41.7%)</td>
<td>4 (33.3%)</td>
<td>1 (08.3%)</td>
<td>0 (00.0%)</td>
<td>2 (16.7%)</td>
<td>2.16</td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ID/CD</th>
<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 (54.5%)</td>
<td>5 (45.5%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>1.45</td>
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<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=11</td>
</tr>
</tbody>
</table>

Note: Response Average (1=Exemplary and 5=Not Applicable).
The second portion of CITA Standard 3.2.3 focused on reading level and was separated out and posed to participating respondents. The reading level was viewed as important to the curriculum services team when selecting resources. Course Developers/Instructional Designers (ID/CD) are often asked to check for reading level, while an external review is also done to spot check for readability levels in the FLVS courses.

Evidence provided by the FLVS in response to the five-year interim CITA accreditation visit shows that the following readability guidelines are used for each course:

- Readability scale to be used is the Flesch-Kincaid
- Applied to a variety of texts throughout a module
- Target readability is 2 grade levels above or below the traditional target grade level of the course (“Florida Virtual School CITA,” 2007, p. 18).

The FLVS uses the Flesch-Kincaid readability tool to assist in gauging the readability level of text-based materials that are incorporated into courses. The Flesch-Kincaid tool allows the FLVS to quickly take a passage from a general text type material (i.e., newspaper, magazine, website) and process the document for spelling and grammar. The readability score gives the FLVS general information about the reading difficulty or ease of a passage and quantitative assessment (i.e., number of words and syllables, number of sentences, and the general length of the passage). The tool does not take into account the qualitative factors that affect ease of reading (i.e., vocabulary, density of concepts, organization and presentation of content). All of these factors assist the external and internal evaluators to adjust the writing accordingly to meet the needs of the student reader.

In order to provide a greater perspective beyond that of the interviews conducted and documents collected, FLVS administrators and course developers/instructional designers (ID/CD) were surveyed regarding their view of how the FLVS is meeting the second portion of CITA Standard 3.2.3. Table 53 presents the results for this standard below.
Table 53 - Analysis of CITA Standard 3.2.3b

Based on the most recent CITA standards that require the school to make sure that the reading level of the materials is appropriate to the reading level competence of the students, how would you rate the Florida Virtual School on this quality indicator?

<table>
<thead>
<tr>
<th>Administrators</th>
<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>2.75</td>
</tr>
<tr>
<td></td>
<td>(16.7%)</td>
<td>(25.0%)</td>
<td>(41.7%)</td>
<td>(00.0%)</td>
<td>(25.0%)</td>
<td></td>
</tr>
<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=12</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ID/CD</th>
<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
</tr>
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<td></td>
<td>2</td>
<td>7</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2.00</td>
</tr>
<tr>
<td></td>
<td>(18.2%)</td>
<td>(63.6%)</td>
<td>(18.2%)</td>
<td>(00.0%)</td>
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<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=11</td>
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</tbody>
</table>

Note: Response Average (1=Exemplary and 5=Not Applicable).

Finally, an examination of the FLVS educational materials portion of the CITA accreditation report found that the FLVS was cited as making effective progress in regards to CITA standard 3.2.3 (see Appendix N).

**CITA accreditation standard: 3.2.4 educational materials.**

CITA Standard 3.2.4 states, “Appropriate study guides and supplementary materials are provided and based on course objectives” (CITA, 2005, p. 3).

According to several ID/CD, study guides are dependent on the course and the developer who is designing the course. Study guides are not required, but are more prevalent in certain subject areas than others. An example was given of a student doing poorly on a test in the pre-calculus course and that an ID/CD can refer students to one of the several practice tests that exist in the online text used as a study guide.

Evidence provided by the FLVS in response to the five-year interim CITA accreditation visit shows that courses include supporting materials that often serve as a review resource or study guide. Some courses also contain extra resources that may be in a CD-ROM or web-based format that serve as a type of study guide. Finally, all courses contain an assignment chart to assist both the student and parents/guardians.
FLVS administrators and course developers/instructional designers (ID/CD) were surveyed regarding their view of how the FLVS is meeting the first portion of CITA Standard 3.2.4. Table 54 presents the results for this standard below.

Table 54 - Analysis of CITA Standard 3.2.4a

<table>
<thead>
<tr>
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<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators</td>
<td>4 (33.3%)</td>
<td>3 (25.0%)</td>
<td>3 (25.0)</td>
<td>0 (0.0%)</td>
<td>2 (16.7%)</td>
<td>2.41</td>
</tr>
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<td>Total Respondents</td>
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</tr>
<tr>
<td>ID/CD</td>
<td>4 (36.4%)</td>
<td>3 (27.3%)</td>
<td>3 (27.3%)</td>
<td>1 (09.1%)</td>
<td>0 (00.0%)</td>
<td>2.09</td>
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<td>Total Respondents</td>
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<td>N=11</td>
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</table>

Note: Response Average (1=Exemplary and 5=Not Applicable).

FLVS administrators and course developers/instructional designers (ID/CD) were also surveyed regarding their view of how the FLVS is meeting the second portion of CITA Standard 3.2.4. Table 55 presents the results for this standard below.
Lastly, an examination of the FLVS educational materials portion of the CITA accreditation report found that the FLVS was cited as making effective progress in regards to CITA standard 3.2.4 (see Appendix N).

**CITA accreditation standard: 3.2.5 educational materials.**

CITA Standard 3.2.5 states that the school “employs effective and systematic procedures for ensuring student and staff equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support student learning, the curriculum, and the instructional program” (CITA, 2005, p. 3).

This Standard is met, according to several ID/CD through the FLVS development and review process. All of the curriculum specialists have a copy of “Engaging the Online Learner”. Each course contains a materials list of all the items that are included and/or sent to the students. Interview respondents also mentioned that the FLVS rarely uses print materials. If a new staff member is hired at the FLVS, it is up to the mentor teacher or director of that individual to order the complement of professional print materials that may be needed. The topic of a professional library has come up several times and the FLVS is looking toward establishing something in regards to this area.

One ID/CD replied that the FLVS is very “equitable” since the mission of the school is to help students in low performing schools and rural school districts where
schools may not be able to offer certain courses. The school has a materials person on staff that knows what the school has purchased. The curriculum specialists have also organized a list of materials to assist the global services arm of the FLVS when they lease courses to a school district in other states.

Another ID/CD interviewed stated that every student received the same materials and also mentioned the FLVS is trying to address the “Digital Divide” area because not every student has an adequate computer at home and also may have a slower connection to the Internet. These students often complete their courses on school computers that are usually much better than the computer that they may have at home. There is a materials database that tracks all print items that have been purchased with FLVS funds, but the FLVS has very few print resources. Items used for professional development are often listed in the staff handbook or on a shared website that is accessible to everyone in the FLVS. When asked if they use e-Books at the FLVS, the respondent mentioned that one of their partners at the FLVS that previously had provided these resources just went out of business.

In order to provide a greater perspective beyond that of the interviews conducted, FLVS administrators and course developers/instructional designers (ID/CD) were surveyed regarding their view of how the FLVS is meeting the “staff” portion of CITA Standard 3.2.5. Table 56 presents the results for this standard below.
Table 56 - Analysis of CITA Standard 3.2.5a

Based on the most recent CITA standards that require the school to *employ effective and systematic procedures for ensuring “staff” have equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support the curriculum, and the instructional program*, how would you rate the Florida Virtual School on this quality indicator?

<table>
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<th>Exemplary</th>
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<th>Not Applicable</th>
<th>Response Average</th>
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</thead>
<tbody>
<tr>
<td>Administrators</td>
<td>3 (27.3%)</td>
<td>5 (45.5%)</td>
<td>2 (18.2%)</td>
<td>0 (00.0%)</td>
<td>1 (09.1%)</td>
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<td></td>
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<td>N=11</td>
</tr>
<tr>
<td>ID/CD</td>
<td>2 (18.2%)</td>
<td>7 (63.6%)</td>
<td>2 (18.2%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
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<td>Total Respondents</td>
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<td>N=11</td>
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</table>

Note: One administrator skipped this question. Response Average (1=Exemplary and 5=Not Applicable).

Similarly, in order to provide a greater perspective beyond that of the interviews conducted, FLVS administrators and course developers/instructional designers (ID/CD) were also surveyed regarding their view of how the FLVS is meeting the “student” portion of CITA Standard 3.2.5. Table 57 presents the results for this standard below.
Based on the most recent CITA standards that require the school to *employ effective and systematic procedures for ensuring “students” have equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support student learning, and the instructional program*, how would you rate the Florida Virtual School on this quality indicator?

<table>
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<tr>
<th>Administrators</th>
<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
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<tr>
<td></td>
<td>4 (36.4%)</td>
<td>4 (36.4%)</td>
<td>2 (18.2%)</td>
<td>0 (00.0%)</td>
<td>1 (09.1%)</td>
<td>2.09</td>
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<td>Total Respondents</td>
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<td>N=11</td>
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<tr>
<th>ID/CD</th>
<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
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<tbody>
<tr>
<td></td>
<td>2 (18.2%)</td>
<td>7 (63.6%)</td>
<td>2 (18.2%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
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<tr>
<td>Total Respondents</td>
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<td>N=11</td>
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</table>

Note: One administrator skipped this question. Response Average (1=Exemplary and 5=Not Applicable).

Evidence regarding standard 3.2.5 was omitted from the FLVS CITA accreditation report and could not be collected to assist in further determining the level of progress being made by the FLVS (see Appendix N).

**Additional quality indicator.**

Finally, an additional standard was developed by the researcher to delve further into the educational materials section of the CITA guidelines. FLVS administrators and course developers/instructional designers (ID/CD) were both asked through separate online surveys to rate how well the FLVS is doing in employing effective and systematic procedures related to the use of information resources and services. Table 58 presents the results for this additional standard below.
While the most recent CITA standards do not require the school to *employ effective and systematic procedures related to the use of information resources and services*, how would you rate the Florida Virtual School on this quality indicator?

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<th>Exemplary</th>
<th>Effective</th>
<th>Emerging</th>
<th>Absent</th>
<th>Not Applicable</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators</td>
<td>2 (18.2%)</td>
<td>6 (54.5%)</td>
<td>2 (18.2%)</td>
<td>0 (00.0%)</td>
<td>1 (09.1%)</td>
<td>2.27</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=11</td>
</tr>
<tr>
<td>ID/CD</td>
<td>1 (09.1%)</td>
<td>7 (63.6%)</td>
<td>3 (27.3%)</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>2.18</td>
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<tr>
<td>Total Respondents</td>
<td></td>
<td></td>
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<td>N=11</td>
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</tbody>
</table>

Note: One administrator skipped this question. Response Average (1=Exemplary and 5=Not Applicable).

This chapter has sought to present the various pieces of data collected to create a snapshot of the information-seeking behavior of the staff and students of the FLVS in a clear and understandable way to the reader. Findings, conclusions and areas of future research that are based on the data presented in this chapter are addressed in the concluding chapter.
CHAPTER V

FINDINGS, CONCLUSIONS AND FUTURE RESEARCH

Through an exploratory study applying the berrypicking theory and incorporating both qualitative and quantitative methods the information-seeking behavior of the staff and students of the Florida Virtual School (FLVS) were examined using a case study approach. This approach was used to investigate how and why instructional designers, course developers and teachers select information resources to support their teaching and how students select information resources to support their learning, as well as how administrators view their responsibility to assure that students and teachers can obtain the information resources and services they need to support their learning and teaching. Following the findings, conclusions and implications associated with each area are presented, while the final section suggests areas of future research for the profession to extend this initial study.

Information-Seeking Behavior

The following section discusses findings related to the overarching research question posed.

Overarching Research Question and Findings

How can the manner in which the staff and students of the Florida Virtual School (FLVS) seek out and use information resources and services be explained by the application, modification, or extension of an information-seeking behavior model, conceptual framework, or theory?

Finding 1: Bates’ berrypicking model can be used to explain the information-seeking behavior of staff and students in the Florida Virtual School (FLVS) and the case study approach can identify administrative roles, influencing factors, and contextual issues that affect this.

Discussion.

Bates’ berrypicking theory is based on the following assumptions:

• The search query is continually changing.
• Searchers may utilize an extensive variety of sources.
• Information retrieved may give way to new ideas and directions to proceed.
• Information is gathered in bits and pieces picked up along the way (Bates, 1989).

Scenarios constructed from which staff and students chose their own behaviors, as well as survey questions, were based on these assumptions. Except in subject searching and except for staff dealing with math and science, a majority of all staff identified strongly with these search characteristics, choosing them as their own. Likewise a majority of students on all but subject searching and type of materials searching chose the berrypicking information search method. Figure 1 below visually demonstrates this finding for each group surveyed (See pages 61-63, 71-73, and 80-82 in Chapter 4 for supporting data).

![Berrypicking Versus Linear](image)

**Figure 1 - Berrypicking Versus Linear Search Scenario Results**

This research clearly validated the Bates’ theory as a suitable one to describe information search behavior in a virtual environment and demonstrated that the more linear models
would not have been appropriate to explain the search behavior. The exceptions will be discussed in the appropriate sections below.

Findings will be addressed from each of the sub research questions below, followed by findings related to the influencing factors and contextual issues.

**Florida Virtual School Administrators**

**Research Question 1**

How do Florida Virtual School (FLVS) administrators view their responsibility to assure that students and teachers can seek out and use the information resources and services they need to support their learning and teaching?

**Administrator’s responsibility for teachers.**

**Finding 2:** FLVS administrative roles and levels of involvement are varied and are dependent upon the administrative duties of the individuals in making sure that teachers can seek out and use the information resources and services they need to support their teaching (See pages 51-54 in Chapter 4 for supporting data).

**Administrator’s responsibility for students.**

**Finding 3:** Administrators are mostly concerned with the ‘big picture’ of assuring that services and resources are adequate for students. The majority of FLVS administrators are only occasionally or rarely involved in making sure that students are able to seek out and use the information resources and services they need to support their learning. One exception to this rule is in selecting resources for the information tool bar that appears with all courses. Administrators most closely involved with teachers are the curriculum services team, the lead teachers, training team, and technology support personnel (See pages 54-57 in Chapter 4 for supporting data).

**Discussion.**

The research and descriptive literature give no insights into the role of administrators in relation to provision of information resources and services for staff and students in the virtual school environment, so the results of this current study can be looked upon as baseline data for further investigation of this administrative role.
Florida Virtual School Instructional Designers/Course Developers

Research Question 2

How do Florida Virtual School (FLVS) instructional designers/course developers (ID/CD) seek out and use the information resources and services they need to assist them in inserting (or integrating) information resources and services into the curriculum?

Berrypicking.

Finding 4: While the Information Use Environment (IUE) of the instructional designers/course developers (ID/CD) varied greatly, nonetheless the berrypicking information-seeking behavior model as proposed by Bates explained the manner in which FLVS ID/CD seek out and use information resources and services. The one exception to this is when ID/CD describe their behavior in relation to subject searching (See pages 60-63 in Chapter 4 for supporting data).

Seeking out information resources and services.

Finding 5: The majority of Florida Virtual School (FLVS) instructional designers/course developers (ID/CD) rely upon their own self-taught (i.e., learn as you go) search techniques, frequently seek out resources from the Internet and FLVS purchased resources, frequently rely upon authoritative websites as a source of content for the purpose of designing or developing a course, while placing a high level of importance on seeking-out resources and services that are accessible to students and those who may lease or purchase an FLVS course who reside outside of the state of Florida (See pages 64-68 in Chapter 4 for supporting data).

Using information resources and services.

Finding 6: Florida Virtual School (FLVS) instructional designers/course developers (ID/CD) imbed essential external resources and services into course lessons, using Internet websites as reinforcement and enhancement, while also viewing “ease of access” and the use of resources in a digital format as being important (See pages 68-70 in Chapter 4 for supporting data).

Discussion.

As with administrators, the research and descriptive literature give no insights into the role of instructional designers/course developers (ID/CD) in relation to the information seeking either in the “brick-and-mortar” or the virtual school environment, so
the results of this current study can be looked upon as baseline data for further investigation of this key role in relation to centralized virtual school education.

The ID/CDs as a group preferred the berrypicking mode of information seeking. The one exception that occurred in identification of search behavior by the berrypicking theory was in subject searching. This anomaly did not occur in the pretest, so was a surprise in the data. Bates’ herself does not note subject searching as any different from other types of searching that might be explained by berrypicking. One possible explanation for the inconsistency in the data of the current study is that subject searching is looked at as a larger overall process and that within the subjects berrypicking still occurs. There is, however, no data to support this interpretation.

The finding that ID/CD have little formal training in searching, yet they bear the chief responsibility for identification and selection of resources and information services for staff and their course is of particular significance because of the key role the ID/CD play in seeking out and selecting resources. For the same reasons the finding that ID/CDs rely very heavily on digital resources is particularly worthy of note. The recent hiring of a CD with a librarian background in the FLVS suggests that this skill is considered important in the role of information resource selection.

**Florida Virtual School Teachers**

**Research Question 3**

How do Florida Virtual School (FLVS) teachers seek out and use supplemental and/or additional information resources from those supplied by the instructional designers/course developers (ID/CD), needed to assist them in providing instruction?

**Berrypicking.**

**Finding 7:** The berrypicking information-seeking behavior model as proposed by Bates explains the manner in which the majority of Florida Virtual School (FLVS) teachers seek out and use supplemental and/or additional information resources and services from those supplied by the FLVS instructional designers/course developers. Two exceptions to this occurred: teachers of math and research and critical thinking subjects chose linear searching as their preferred mode and all teachers when describing their subject searches chose a linear mode (See pages 70-73 in Chapter 4 for supporting data).
Seeking out supplemental information resources.

Finding 8: When seeking out supplemental and/or additional information resources Florida Virtual School (FLVS) teachers rely heavily upon teacher- or department-developed knowledge bases, often seek-out supplemental resources from the Internet or FLVS purchased resources, and seek-out supplemental content from authoritative Internet websites (See pages 74-78 in Chapter 4 for supporting data).

Use of supplemental information resources.

Finding 9: Florida Virtual School (FLVS) teachers use supplemental resources to assist students who are having issues grasping concepts being taught, while also using supplemental resources to individualize their courses through the announcement page, white board chats and review sessions (See pages 78-79 in Chapter 4 for supporting data).

Discussion.

All teachers, except those in the more linear area of math and research and critical thinking, followed the pattern of other respondents in choosing berrypicking as their preferred mode of searching except for subject searching. It is important to consider the departures from the berrypicking mode that occurred in the current study. The Small et al. study found that differences in information searching were identified between various groups of educators (i.e., Science, English, History, Technology), but in that study the difference was not identified as berrypicking versus non-berrypicking, as it is in the current study, nor was it specified exactly what the differences were that occurred between the disciplines. The new finding of this study was that the teachers of what might be considered more linear subjects, i.e., those that have a proscribed method of proceeding toward results, were the ones who sought information in that method.

As with their ‘brick-and-mortar’ counterparts, teachers in the virtual school environment are seeking information resources for curriculum development. But the virtual teachers, unlike their traditional counterparts, do not rely on established routines for finding information nor do they rely heavily on traditional textbooks or colleagues as sources of instructional-design information. Nor do these teachers resemble those in the Small et al. study (1998a) of the use of electronic resources who were most often searching online for lesson plans. As noted, care has to be taken when comparing
findings of studies, however, because of differences in populations, methodologies and other varying factors. The one similarity between the Small et al. study with the current research is that the teachers in both studies did prefer the berrypicking method of searching. The difference in the results of this study is that the search behavior of teachers in the Small et al. study was confined to their electronic searching, while teachers in the current study were asked to comment on their information seeking without any such limitation. It is not, therefore, known if the teachers’ non-electronic searching in the Small et al. study would have followed the berrypicking model.

**Florida Virtual School Students**

**Research Question 4**

How do Florida Virtual School (FLVS) students seek out and use the information resources and services they need to support their learning when these are not provided as part of the course content?

**Berrypicking.**

**Finding 10:** The berrypicking information-seeking behavior model as proposed by Bates explains the manner in which the majority of Florida Virtual School (FLVS) English II students seek out and use supplemental and/or additional information resources and services when completing an open-ended research assignment. Two exceptions to this appeared in the student responses, i.e., in subject searching and in searching for types of materials (See pages 80-82 in Chapter 4 for supporting data).

**Seeking out information resources.**

**Finding 11:** When seeking out resources to complete an open-ended research assignment, the majority of Florida Virtual School (FLVS) students surveyed relied heavily upon FLVS-purchased resources and the Internet, while also relying on their current FLVS course teacher and parent(s) when completing their assignments (See pages 82-84 in Chapter 4 for supporting data).

**Using information resources.**

**Finding 12:** When using services to complete an open-ended research assignment, Florida Virtual School (FLVS) students surveyed rarely use the “Ask A Librarian” service provided by the State Library of Florida (See pages 57-58 and 83-84 in Chapter 4 for supporting data).
Discussion.

An important finding of this study is that all three groups who were asked to describe their information-seeking behavior, instructional designers/course developers (ID/CD), teachers, and students, chose the berrypicking method, except for subject searches, as explained above. So age or ‘growing up digital’ is not the variable that is most influential in promoting the preference for this type of search, although a larger percentage of students did choose berrypicking, so growing up using digital resources may have some influence, just not enough to modify the majority preference.

No easy explanation exists for why the students chose a more linear search strategy for locating particular types of resources. In a ‘brick-and-mortar’ environment, this might be explained by proximity shelving, but that has no relevance in a virtual environment, which is the environment most of the students use. A possible explanation for the choice of linear searching for subject searches is the same that it is for ID/CDs and teachers, the possibility that subject is considered an umbrella under which smaller berrypicking searches occur.

Former research regarding students and choice of resources (Levin, Arafeh, Lenhart, and Rainie, 2002) showed that even students in traditional school settings favor the Internet for library and reference materials over textbooks and materials contained in their local public and school libraries. This partly had to do with the ease of access. So it is no surprise that students studying in a virtual environment favor online resources. What is surprising is that students do not use the online information service “Ask A Librarian,” that is available to them from the information bar in every course, but appear to prefer to seek their own information resources. One possible cause of low use of the service may be due to the fact that Florida Virtual School (FLVS) students can access the “Ask A Librarian” service through their local public library website, although this use would be included in their self-report. When accessing the service through this method the Tampa Bay Library Consortium (TBLC) does not collect the student’s login point.
Influencing Factors

Influencing Factor Question 1

How is information literacy integrated into courses designed by the Florida Virtual School (FLVS) staff and how does this affect the students’ ability to seek out and use information resources and services?

Integrating information literacy.

Finding 13: Florida Virtual School (FLVS) administrators and instructional designers/course developers (ID/CD) view information literacy as being incorporated in all or nearly all of the FLVS courses where students are asked to locate, evaluate and manipulate information, with the majority of FLVS ID/CD viewing the integration of the teaching of information literacy as a very important item, along with FLVS teachers seeing the level of information literacy integration as being very important. However, the majority of FLVS administrators are only occasionally or never involved in promoting the integration of information literacy into the curriculum. (See pages 84-87 in Chapter 4 for supporting data.)

Florida student information literacy descriptors.

Finding 14: Florida Virtual School (FLVS) administrators and instructional designers/course developers (ID/CD) had very little knowledge of the “Information Literacy Descriptors” developed by Florida district media supervisors and Florida Department of Education staff members or of the correlation of Sunshine State Standards with existing information literacy concepts. No systematic method for incorporating information literacy into courses appears to exist. The majority of FLVS administrators were rarely involved in promoting the integration of the information literacy descriptors. (See pages 87-89 in Chapter 4 for supporting data.)

Discussion.

No research studies have been located that address the integration of information literacy or subsets of information literacy (i.e., Information and Communication Technologies (ICT) literacy) into the K-12 online curriculum. The literature reveals many disparate definitions of information literacy since the term was introduced in 1974 into the library and information studies community. It has been considered particularly relevant in the school library media population. The American Library Association
statement issued in 1989 that “a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (“American Library Association Presidential Committee,” 1989) is generally the definition accepted in the library arena. Participants in this study were given this definition, so it is not clear whether they were familiar with it prior to the study. Although the participants were very adamant that information literacy is incorporated into all Florida Virtual School (FLVS) courses, supporting the idea of integration that the research literature reveals as most effective, it is not through any kind of systematic process. For example, no models, such as the Big6 or Kuhlthau’s seeking meaning, were mentioned.

More telling is that no staff member, either administrator or instructional designers/course developers (ID/CD), seemed to be aware of the years-long effort in Florida to correlate national information literacy standards with the Sunshine State Standards. Nor was there any recognition that Eisenberg and Wurster (2002) aligned the Florida Sunshine State Standards with the Big6 in the subject area of language arts. While courses designed by the FLVS are developed from the Sunshine State Standards and aligned with standards developed by subject area professional organizations at the national level (Berge & Clark, 2005), no evidence of integrating information literacy concepts as aligned with standards was mentioned. This research study found that it is only the general idea of information literacy that appears to be incorporated into FLVS courses and that the specific tool of subject area standards tied to information literacy descriptors is neither known about or used in course design. This of course means that information literacy is likely taught, if at all, at a much lower and less consistent level than the tools of the state curriculum promote. While the FLVS has shown interest in the development of information literacy in the online curriculum, without an “information literacy expert,” i.e., a librarian, they apparently do not know how to accomplish it in a systematic manner. Moreover, with a centralized curriculum, not only could information literacy be easily integrated, it could be taught consistently and integrated with subject matter in a state-approved manner to a huge student body.
Influencing Factor Question 2

How do selected demographics such as educational background, experience, gender, age, instructional subject areas and students’ current educational environment affect the Florida Virtual School’s staff and students when seeking out and using information resources and services?

**FLVS selected demographics.**

**Finding 15:** There was no evidence of a relationship between the search scenarios proposed and Florida Virtual School (FLVS) instructional designers/course developers’, teachers’ or students’ demographic characteristics, e.g., educational background, type of schooling, experience, gender, age and instructional subject areas. However, there were not enough participants related to any responses to make a Chi Square analysis possible except for the teachers. (See pages 89-90 in Chapter 4 for supporting data).

**Discussion.**

While previous studies reported differences in information-seeking behavior related to level of education/experience (Wilkins and Leckie, 1997), gender and age (Marcella and Baxter, 1999) and instructional subject areas (Small et al., 1998a), in the population studied, only definitive statements can be made about Florida Virtual School (FLVS) teachers. There is no statistical relationship between the teachers’ demographics (i.e., level of education/experience, gender, age and instructional subject area) and whether they chose the berrypicking or linear search methods. Since the instructional designers/course developers (ID/CD) and the students’ mirrored the FLVS teacher choice of berrypicking, it is possible that there is no relationship in the demographics there either, especially in light of 'eyeballing' the widespread distribution among categories (i.e., rather than concentration), but the population of ID/CDs and students were too small to run statistical significance tests (i.e., Chi Square).

Berrypicking is a means of information-seeking behavior that can be and is used by any age, gender, experience level and/or subject area. This finding reinforces the assertion that a large proportion of the population of this study does not use the traditional linear searching processes.
The research and descriptive literature gives no insights into the role that demographics play in relation to the berrypicking search method in the virtual school environment, so the results of this current study can be looked upon as baseline data for further investigation of this influencing factor.

**Contextual Issues**

**Contextual Issue Question 1**

How have policies at the state educational and legislative levels affected the ability of the staff and students of the Florida Virtual School (FLVS) to seek out and use information resources and services?

**Selection of information resources and services.**

**Finding 16:** State educational/legislative policies rarely affect the ability of the majority of Florida Virtual School (FLVS) staff and students when seeking out information resources and services. (See pages 90-93 in Chapter 4 for supporting data.)

**Use of information resources and services.**

**Finding 17:** State educational/legislative policies rarely affect the ability of the majority of Florida Virtual School (FLVS) staff and students when using information resources and services. (See pages 93-95 in Chapter 4 for supporting data.)

**Discussion.**

The research and descriptive literature give no insights into how state educational/legislative policies affect the ability of staff and students when seeking out information resources and services in the virtual school environment. Early 21st century policy documents (Watson, 2005; NASBE, 2001) noted that state policymakers often take a conservative approach and predicted that K-12 virtual schooling would outpace the ability of policymakers to handle issues like:

- What is the quality of the students’ learning experience?
- What are the pass-fail rates for K-12 students in online courses?
- What are the best ways to fund and provide online courses (Watson, 2005, p. 10)?

Unlike previously documented reports that identify these issues as potentially problematic for the FLVS and others like it, the most recent policy studies show that policymakers in the state of Florida have taken steps to address the concerns raised in the literature through legislative mandates.
Because the state of Florida wants students to gain the knowledge and skills necessary to succeed in the 21st century, they have legislatively mandated the Florida Virtual School (FLVS) to:

- expand access to courses for students in order to meet their educational goals (i.e., homebound, inner-city and rural high school students).
- provide accelerated access in order for students to obtain a high school diploma at least one semester early.
- develop appropriate means for assessing the effectiveness and efficiency of services provided that encourage seamless articulation, maximum access, and student achievement (HB 1533, 2001).

The above evidence demonstrates that policymakers in the state of Florida are staying ahead of the curve by addressing the policy concerns raised in the literature. This study contributes to the research literature with the finding that FLVS administrators and instructional designers/course developers (ID/CD) noted that state educational/legislative policies rarely affect the ability of staff and students when seeking out or using information resources and services. The results of this current study can be looked upon as baseline data for further investigation of this contextual issue.

**Contextual Issue Question 2**

How have budgetary policy issues affected the Florida Virtual School’s ability to seek out and use information resources and services?

Because both administrators and Instructional Developers/Course Designers (ID/CD) are centrally located, their views on some issues were similar. Here they are discussed together for this reason.

**Seeking out: Administrative view of state funding policy issues.**

**Finding 18:** The majority of Florida Virtual School (FLVS) administrators felt that budgetary policy issues rarely or never affected the seeking out of resources and services at the FLVS. (See pages 95-97 in Chapter 4 for supporting data.)

**Seeking out: ID/CD view of state funding policy issues.**

**Finding 19:** The majority of Florida Virtual School (FLVS) instructional designers/course developers (ID/CD) felt that budgetary policy issues rarely or never
affected the seeking out of resources and services at the FLVS. (See pages 98-99 in Chapter 4 for supporting data.)

**Use: Administrative view of state funding policy issues.**

**Finding 20:** The majority of Florida Virtual School (FLVS) administrators felt that budgetary policy issues rarely or never affected the use of resources and services at the FLVS. (See pages 100-101 in Chapter 4 for supporting data.)

**Use: ID/CD view of state funding policy issues.**

**Finding 21:** The majority of Florida Virtual School (FLVS) instructional designers/course developers (ID/CD) felt that budgetary policy issues rarely or never affected their ability to use resources and services at the FLVS. (See pages 101-102 in Chapter 4 for supporting data.)

**Discussion.**

As with state educational/legislative policies, the research and descriptive literature gives no insights into how state budgetary policy issues affect the ability of administrators and instructional designers/course developers (ID/CD) when seeking out information resources and services in the virtual school environment. Through policy documents detailing budgetary issues facing virtual schools, Cavalluzzo and Higgins (2001) noted that costs associated with running a virtual school and who should pay can affect “experimentation, acceptance, and level of use.” While prior studies (The Peak Group, 2002) noted that fees charged to students comprised over 50% of the total budget of virtual schools studied, these fees were projected to decrease with state initiatives serving as the primary source of funding. The Florida Virtual School (FLVS), unlike the majority of other virtual schools, has never charged fees to students who live within the state of Florida.

Whereas other state sponsored virtual schools have faced budgetary issues upon their establishment (Clark, 2001; Carpenter, 2004), the State of Florida has supported the FLVS through funding totaling $23 million in state line item appropriations over a six-year period. While these state line item appropriations were tenuous, the Florida legislature made budgetary policy a non issue in the state of Florida by implementing legislation to fund the FLVS as the 68th school district within the Florida Education Finance Program (FEFP). Likewise, through a unique performance-based funding model
passed by the Florida legislature, the FLVS only receives full-time equivalent (FTE) funding for students who complete and pass courses in which they are enrolled.

The benefits of the current performance-based funding model and past budgetary initiatives provides evidence that budgetary issues that affect other state-sponsored virtual schools are being addressed by policymakers in the state of Florida. This study is unique in the finding that FLVS administrators and ID/CD noted that state budgetary policy issues rarely or never affect their ability to seek out and use resources and services at the FLVS. The results of this current study can be looked upon as baseline data for further investigation of this contextual issue.

**Contextual Issue Question 3**

How have accreditation issues affected the Florida Virtual School’s ability to seek out and use information resources and services?

*CITA accreditation standard: 3.2.1 educational materials.*

“The school adopts and implements a policy concerning the selection of educational materials, which is based on sound educational research and practice” (CITA, 2005, p. 3).

**Finding 22:** A resource evaluation rubric has been developed, adopted and put into practice with the majority of administrators and instructional designers/course developers (ID/CD) noting that the school was at an exemplary or effective level in regard to adopting and implementing a policy concerning the selection of educational materials, while the Commission on International and Trans-Regional Accreditation (CITA) team felt that the Florida Virtual School (FLVS) was making effective progress towards this standard. (See pages 103-104 in Chapter 4 for supporting data.)

*CITA accreditation standard: 3.2.2 educational materials.*

“The instructional materials are selected to support the specific objectives of the individual course, as well as the overall mission and goals of the school” (CITA, 2005, p. 3)

**Finding 23:** Instructional materials are selected to support directly the objectives and standards of the courses at the Florida Virtual School (FLVS), with the majority of administrators and instructional designers/course developers (ID/CD) noting that the school was at an exemplary or effective level in regard to selecting instructional materials
to support the specific objectives of the individual course and overall mission and goals of the school, while the Commission on International and Trans-Regional Accreditation (CITA) team felt that the FLVS was making effective progress towards this standard. (See pages 105-106 in Chapter 4 for supporting data.)

**CITA accreditation standard: 3.2.3 educational materials.**

“The materials provided to the student are current and match with the course objectives. The reading level of the materials is appropriate to the reading level competence of the students” (CITA, 2005, p. 3).

**Finding 24:** Materials provided to students are current and match the course objectives, with the majority of administrators and instructional designers/course developers (ID/CD) noting that the school was at an exemplary or effective level in regard to providing current materials that match the course objectives and are appropriate to the reading level competence of the student enrolled in the course. The Commission on International and Trans-Regional Accreditation (CITA) team felt that the Florida Virtual School was making effective progress towards this standard. (See pages 106-109 in Chapter 4 for supporting data.)

**CITA accreditation standard: 3.2.4 educational materials.**

“Appropriate study guides and supplementary materials are provided and based on course objectives” (CITA, 2005, p. 3).

**Finding 25:** Study guides are not required in the design process of Florida Virtual School (FLVS) courses and are more prevalent in certain subject areas than others, while supplementary materials are often included in a CD-ROM or web-based format, along with an assignment chart for each course to assist both the student and parents/guardians. The majority of administrators and instructional designers/course developers (ID/CD) noted that the school was at an exemplary or effective level in regard to providing appropriate study guides and supplementary materials that are based on course objectives. The Commission on International and Trans-Regional Accreditation (CITA) team felt that the FLVS was making effective progress towards this standard. (See pages 109-111 in Chapter 4 for supporting data.)
**CITA accreditation standard: 3.2.5 educational materials.**

The school “employs effective and systematic procedures for ensuring student and staff equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support student learning, the curriculum, and the instructional program” (CITA, 2005, p. 3).

**Finding 26:** The Florida Virtual School (FLVS) provides the same professional materials to each teacher along with equitable access through serving students in low performing schools and rural school districts, while addressing the “Digital Divide” by providing a platform for each student to receive the same materials and instruction. The majority of administrators and instructional designers/course developers (ID/CD) noted that the school was at an exemplary or effective level in regard to employing effective and systematic procedures for ensuring that students and staff have equitable access to current materials in print and electronic formats that support student learning, the curriculum, and the instructional program. Evidence regarding standard 3.2.5 was omitted from the FLVS Commission on International and Trans-Regional Accreditation (CITA) report and could not be collected to assess the progress towards meeting this standard. (See pages 111-114 in Chapter 4 for supporting data.)

**Additional quality indicator.**

How well is the school doing in employing effective and systematic procedures related to the use of information resources and services.

**Finding 27:** The majority of Florida Virtual School (FLVS) administrators and instructional designers/course developers (ID/CD) feel that the school currently employs effective and systematic procedures related to the use of information resources and services. (See pages 114-115 in Chapter 4 for supporting data.)

**Discussion.**

As with previous contextual issues discussed, the research and descriptive literature give no insights into the affect that accreditation issues play in a virtual schools’ ability to seek out and use information resources and services. While previous studies (Clark, 2001; Cavanaugh, 2004) have examined and identified the accreditation status and accrediting institution, this study is unique in the specific examination of educational materials standards as they relate to the virtual school environment. The fact that a policy
concerning the selection of educational materials has been developed, adopted and put into practice in the virtual school environment is an important finding of this study. This study is also the only one of its kind in terms of the educational materials portion of the Commission on International and Trans-Regional Accreditation (CITA) findings in that no other studies have examined the documented sources of evidence provided by virtual schools towards meeting the educational materials portion of the CITA standards.

The identification of a lack of mention of an educational materials policy or school library media specialist staffing formulas within the existing CITA standards is also an important finding of this study. Whereas the Southern Association of College and Schools (SACS) standards for ‘brick-and-mortar’ schools contain existing formulas for library collections in secondary schools, these same types of collection formulas do not exist in the virtual school environment. Likewise, staffing ratio formulas for school library media specialist personnel are also absent in the current CITA standards. The Florida Virtual School has neither.

The results of this current study can be looked upon as baseline data for further investigation of this key aspect of educational materials accreditation standards for the virtual school environment.

**Conclusions and Implications**

Viewed as a “leader among K-12 virtual schools in terms of innovation, depth of courses, rigor, and enrollment” (“Florida leads growth,” 2007, p. 1), the Florida Virtual School (FLVS) was identified by the researcher as a critical case for studying the information-seeking behavior of staff and students in the virtual K-12 environment. The FLVS was selected and studied due to the broader relevance (Patton, 2002) that such a critical case could have on other state-sponsored virtual schools. By extending the experience and knowledge gained through conducting this case study, the conclusions and implications documented may assist the FLVS, transfer to other state-sponsored virtual schools where they can be adapted and applied to similar contexts and provide relevance to practitioners and policy makers involved in the virtual K-12 environment. Outlined below are the conclusions and implications as they relate to the theoretical, information seeking and use, influencing factors and contextual issues. Because this is
exploratory/qualitative research, conclusions and implications are tentative and suggest trends to look for in other locations and with other populations.

**Theoretical Conclusions**

**Conclusion 1:** The berrypicking theory can be used to explain a large portion of information seeking in the virtual school environment.

The strong evidence from this study that a high percentage of instructional designers/course developers (ID/CD), teachers and students in a virtual school environment employ the berrypicking theory suggests that researchers studying information seeking in this environment can best understand information behavior by employing Bates’ berrypicking theory. Researchers cannot simply apply traditional linear models (e.g., The Big6, Kuhlthau’s Information Search Process) that have traditionally been used in the ‘brick-and-mortar’ environment to what appears to be a nonlinear environment.

It will also be important for researchers to look at how more linear models relate to or can be integrated with the berrypicking theory.

Due to evidence documenting berrypicking use and because this study is the first to address information seeking in the virtual school environment, the information-seeking behavior of staff and students in the virtual K-12 setting warrants closer attention.

**Conclusion 2:** The berrypicking theory is robust and holds up even when there are differences or shifts in resource availability in the Information Use Environment (IUE) (Taylor, 1991).

Through the results of interviews conducted with Florida Virtual School (FLVS) instructional designers/course developer’s (ID/CD), it is apparent that the IUE of these key staff members varies greatly. While variances exist among the ID/CD Information Use Environments, the berrypicking method still explains information behavior. An IUE difference identified by interviewees relates to how many resources, print or electronic, are readily available. The course designer who was also an administrator noted that he had more resources than the average course designer, yet he too, used the berrypicking method of seeking information. Moreover, no differentiation of method preference for any group of participants was correlated with online or handheld materials, both of which were included in the choices on the survey. Based on these conclusions, the berrypicking
theory is robust. This suggests that researchers need to apply the berrypicking theory to a variety of virtual school environments, while also applying it in ‘brick-and-mortar’ environments as well to determine the extent of this robustness.

**Methodological Conclusions**

**Conclusion 3:** The case study methodology developed for use in investigating berrypicking in the Florida Virtual School (FLVS) environment has both internal consistency and construct validity.

In order to conduct the study of the FLVS, a methodology was developed that centered on the berrypicking theory proposed by Bates (1989). Because participants in the study itself responded to the different expressions of berrypicking in a consistent manner and overall in the direction of berrypicking established in the pretest, the method appears to have internal consistency, i.e., reliability through asking the same question in more than one way and obtaining similar answers in both the pretest and the final online survey. One inconsistency occurred, i.e., when participants were asked about subject searching. While this did not occur in the pretest, it occurred across all subjects in the larger sample, so that whatever differs about subject searching differs for all participants.

Additionally, the use of multiple sources of evidence that provided various measures of the same incident (Yin, 2003) was addressed through the methodology developed. Through the use of these various sources of evidence, construct validity, i.e., established through triangulation of documents, phone interviews and online surveys, was addressed.

An important implication is that researchers can have confidence in the validity of this method and can replicate this methodological approach that has not previously been applied in studying berrypicking to study information-seeking behavior in the virtual or other types of environments.

**Information-Seeking Behavior Conclusions**

**Conclusion 4:** Most administrators view their responsibility as important, but not with direct involvement in assuring that teachers and students can seek out and use information resources and services, while administrators in some positions and relation to some tasks view their responsibility as more hands-on.
One implication of this conclusion is that identification of the specific administrative positions and departments with the greatest role in making sure that teachers and students can seek out and use the information resources and services they need to support their teaching and learning in the virtual K-12 environment may allow the Florida Virtual School (FLVS) and other similar state-sponsored virtual schools to focus on ways that these administrative positions and departments can work in closer conjunction with one another to further the information seeking and use aspects as they relate to teachers and students. The identification of these administrative positions, departments and the roles they play may provide researchers with a clearer picture or starting point to extend this initial study.

In general administrators seem more concerned with services than resources, which may be appropriate to their “big picture” positions. However, the identification of one aspect in which most administrators are closely involved with resources, identification of items for the resource bar that is visible in all 90 courses offered at the FLVS and the ability of administrators to expand the existing resources listed, implies that the resources bar is a relevant concept that may transfer to other state-sponsored virtual schools with significant administrative support.

**Conclusion 5:** Instructional designers/course developers (ID/CD) in a virtual environment rely upon their own self-taught search techniques when seeking out information resources and have almost an exclusive reliance on digital resources when integrating information resources and services into the curriculum.

Two implications relate to this conclusion for the Florida Virtual School (FLVS) and possibly for other virtual schools with a similar instructional design/course development structure. First there is the opportunity to assure that FLVS ID/CD and those in other similar virtual schools have the necessary training needed to conduct successful searches when seeking-out resources and services that may impact thousands of students, instead of relying upon their own self-taught search techniques. Providing training in search techniques in a systematic way to ID/CDs could have a greater impact in a virtual school than in any single ‘brick-and-mortar’ school or school district. This type of training could provide relevance to practice both at the FLVS and at the 22 other
state-led virtual high schools in the United States where other ID/CD are seeking-out and designing courses.

Second, although FLVS staff relies almost exclusively on digital resources, they have not been able to use heavily the resources in the Florida Electronic Library because of out of state students in courses and no permission to do so. The recent launch of the Florida Virtual Global School (http://www.flvsgs.net/), meant to serve students who reside outside of the state of Florida, may allow for the design of separate courses and thus permit the FLVS to design courses with digital resources specifically tailored to students who reside both inside and outside the state of Florida. The implication of such a separation of courses between “in state” and “out of state” is that instructional designers/curriculum developers in the FLVS or other similar virtual schools with state resource restrictions to include additional valuable digital resources and services in the ‘in state courses.’ These resources are currently dismissed because of legalities of selling such resources and services to other educational entities.

**Conclusion 6:** Virtual teachers rely upon teacher- or department-developed knowledge bases and Internet websites to supplement the existing centrally created course content.

Based on the evidence that Florida Virtual School (FLVS) courses are centrally designed and FLVS teachers are required to teach from the same course content and use the same imbedded information resources and services, unlike a ‘brick-and-mortar’ school where a school library media specialist may have to encourage teachers to buy into using a certain paid resource or service, information resource and service integration in the FLVS environment affect the entire FLVS learning community of 308 full-time teachers and 54,100 plus students. A major implication of this high level of systematic, consistent information resource and service integration may assist researchers in identifying and applying relevant and successful aspects of resources and services to teachers in similar virtual K-12 environments as well as teachers in the ‘brick-and-mortar’ environment.

Another implication relates to the initial identification and apparent important role that teacher- or department-developed knowledge bases play in the supplemental information seeking and use process of teachers studied. Further investigation of these
knowledge bases may help to inform best practices for teachers in other state sponsored virtual schools where they can be adapted and applied to similar contexts and provide relevance to practitioners and policy makers involved in the virtual K-12 environment.

**Conclusion 7:** When completing an open-ended research assignment, virtual school students rely upon information resources provided by the virtual school and those they can locate on the Internet through berrypicking methods even when they also attend a ‘brick-and-mortar’ school with a library and a librarian.

Students in the virtual environment studied that also attend a ‘brick-and-mortar’ school with a library place very little importance on seeking out resources from the school library media center or the school library media specialist. An implication of this finding is that the role that a library or a library media specialist might play in a virtual school environment may differ radically from the traditional way in which it has been executed. While the recent hiring of a person to oversee resource procurement in the Florida Virtual School (FLVS) suggests that the skills of a librarian are needed, it is not evident how direct information services are or might be available to staff and students. It is also unclear whether the berrypicking method of information seeking adopted by staff and students in the FLVS may affect how they do or could interact with a librarian in a more traditional environment. The numerous unknowns related to this conclusion lead to a large area of needed research in identifying the role of information professionals in virtual environments. Additionally, based on the data collected detailing the FLVS student use, or lack of use related to the “Ask A Librarian” service, it may assist the FLVS, the State Library of Florida and other key stakeholders to work together and address ways in which this service might better support the information-seeking behavior of FLVS students.

*Influencing Factors Conclusions*

**Information literacy.**

**Conclusion 8:** The potential of widespread consistent, impact of integrating information literacy in instruction at a virtual school may be greater than at a ‘brick-and-mortar’ school.

There are two implications to this conclusion for the Florida Virtual School (FLVS) and possibly for other virtual schools with a centralized curriculum development
structure. First, there is the opportunity to assure information literacy is taught systematically to literally thousands of students. Inserting information literacy in a systematic way could have a greater impact than in most single ‘brick-and-mortar’ schools or school districts. The integration of an information literacy model and the documentation of the Information Literacy Descriptors within FLVS courses could affect the FLVS learning community of 308 full-time teachers and 54,100 plus students. As FLVS courses are updated and redesigned on a three-year cycle, if the FLVS curriculum resource specialist or course design team could begin incorporating the Information Literacy Descriptors that are currently correlated with Sunshine State Standards into each course, then this process could be completed within a three-year period. This could also provide relevance to practice at the 22 other state-led virtual high schools in the United States.

Second, key stakeholders within the FLVS, state of Florida and other virtual K-12 schools, where information literacy is not integrated during course design and development, could begin taking steps to address the lack of a systematically integrated information literacy model and method of assessing such a model. This is an instance in which the relationship between berrypicking and the more traditional linear models needs to be established. If researchers and key stakeholders within the FLVS began testing existing information literacy models (i.e., The Big6, Kuhlthau’s Information Search Process, etc.) to assess the effectiveness of current models in this new type of non-linear environment, then they could determine how current models to teach information literacy need to be modified or new ones need to be developed specifically for this environment.

If the FLVS would work in conjunction with researchers to examine existing information literacy assessment tests (i.e., iSkills™, TRAILS, etc.), or develop a new one, then they would be able to assist in identifying and assessing the strengths and weaknesses in the information-seeking skills of FLVS students. Likewise, through establishing some type of information literacy assessment pre and posttest, the FLVS and other virtual schools who do not currently use a standardized assessment of information literacy skills would be able to assess student growth and analyze the strengths and weaknesses of the current level of information literacy integration within the FLVS curriculum.
**Demographics.**

**Conclusion 9:** Berriespicking is the preferred method of information seeking by teachers in the virtual school environment regardless of age, gender, or educational background. No firm conclusion, because of small numbers, can be reached about administrators, instructional designers/course developers, or students.

A major implication, then, is that researchers interested in further exploration of the demographic aspects of the information behavior of teachers and students in this new and evolving virtual environment may have some confidence that the majority of teachers prefer the berriespicking method regardless of the demographics identified. Larger groups of other staff and students need to be studied in order to determine whether demographics of these groups have any relationship to their choice of information-seeking behavior method.

**Contextual Issues Conclusions**

**State educational and legislative policies.**

**Conclusion 10:** State educational and legislative policies affect some aspects of the information-seeking behavior of virtual school staff and students.

In general participants do not perceive a direct impact of state educational and legislative policies on their ability to seek and use information resources. One issue related to educational and legislative policies, with implications for the “use” aspect of the information-seeking behavior of Florida Virtual School (FLVS) staff and students, and perhaps for others, centered on the lack of integrated state-purchased Florida Electronic Library resources in FLVS courses. The state of Florida has established the Florida Electronic Library as a gateway through which residents of Florida can access and use these online resources (i.e., databases, magazines, books, newspapers, encyclopedias, etc.) and services for free. FLVS administrators and instructional designers/course developers (ID/CD) noted that resources and services such as those from the Florida Electronic Library were not used in FLVS courses due to students attending the FLVS from outside the State of Florida and due to leasing/licensing and selling agreements with other states. While the Florida Virtual Global Services School (FLVS/GS) was recently created as an extension of the FLVS to provide e-learning courses to students and educational institutions outside of Florida, it is unclear whether
the FLVS will develop Florida only specific versions of courses that could then make use of the free state-funded Florida Electronic Library resources and services. The Florida Legislature, State Department of Education and FLVS leaders may need to look at future Florida Electronic Library vendor licensing agreements to see if some type of reciprocity agreement can be reached that would eliminate the contractual barriers that currently limit access to students attending the FLVS from outside the State of Florida. These same implications may exist for any of the other state-sponsored virtual schools with similar legislative or policy restrictions.

The policy that requires filtering of Internet resources to obtain Federal e-rate funds that affects ‘brick-and-mortar’ schools is not an issue in a virtual school because students use their own Internet service providers.

**State funding policy.**

**Conclusion 11:** State budgetary policies can adversely or favorably affect the information-seeking behavior of virtual school staff and students.

Just as state-sponsored virtual schools seem to face state educational and legislative policy issues, they also appear to face issues related to funding upon the formation and early development of such a school. Throughout the course of the past ten years the Florida Virtual School (FLVS) budget was initially grant funded, then a line item in the State of Florida Department of Education budget and finally funded through a new performance-based funding mechanism. Evidence from this study shows that the new performance-based funding mechanism gives considerable control over the influx of money into the FLVS based on the number of “course completions,” which in turn provides for a greater pool of resources and services from which to select. Likewise, the FLVS receives financial support from all but four of the state funding categoricals (i.e., transportation, exceptional student education, supplemental academic instruction and facilities funding), while also receiving state library media allocation money for instructional materials as all other public ‘brick-and-mortar’ schools do.

Additionally, state budgetary policies have allowed for the initial establishment of the global services arm of the FLVS that has now expanded into the Florida Virtual Global School ([http://www.flvsgs.net/](http://www.flvsgs.net/)). This portion of the school permits the FLVS to charge students who reside outside of the State of Florida as well as sell franchises and
courses to schools, school districts and other virtual school entities around the country. The charging of out-of-state students and sale of franchises and courses have assisted the FLVS in providing an increased level of resources and services. While the State Department of Education in Florida would like to see the FLVS increase enrollment at a faster rate, thus increasing the FLVS budget and the possible information resources and services offered, fast-paced growth is not a priority for the FLVS at this time. FLVS study participants felt that fast-paced enrollment growth would come at a cost and likely affect the overall quality of the school.

Previous FLVS funding formulas may inform other state-sponsored virtual schools and assist them in identifying budgetary policies that may ultimately support the information-seeking behavior of staff and students. Similarly, the current FLVS performance-based funding formula may inform new and existing state-sponsored virtual schools that are looking to solve existing funding issues that may currently exist within their respective states.

Accreditation standards.

Conclusion 12: Accreditation standards play a vital role in shaping the information landscape of a virtual school.

The contents of standards and what they do and do not require play a vital role in shaping the information landscape of a virtual school. The issue of accrediting a virtual school like the Florida Virtual School (FLVS) is difficult since many elements are not the same as in the ‘brick-and-mortar’ environment. Current Commission on International and Trans-Regional Accreditation (CITA) educational materials standards require virtual schools to implement a policy concerning the selection of educational materials, select materials that support specific course objectives and the mission and goals of the school, use materials with a reading level that is appropriate to students being served, provide supplementary materials, and implement procedures to ensure equitable access to the educational materials. Evidence from this study shows that the FLVS is making effective progress towards meeting the educational materials portion of the Commission on International and Trans-Regional Accreditation (CITA) standards. CITA standards are associated with the Southern Association of Colleges and Schools (SACS) and are designed specifically for distance education schools.
Several components that are missing from the CITA accreditation standards have implications for the information-seeking behavior of staff and students in the virtual school environment and therefore may need to be considered for future inclusions. First, there may be a need to establish a challenged materials policy and procedure for addressing materials that are challenged by parents or other members of the school community due to ethical, moral or other concerns (SACS, 2005). While it is currently unclear how this is handled within the FLVS, or if any such challenges have occurred, due to the centralized nature of the course curriculum at the FLVS such challenges could affect students throughout an entire FLVS discipline. The possibility of such a material challenge occurring in the virtual school setting seems probable and the need for an indicator that would require necessary policy and procedures to handle such an event in the virtual school setting warrants further examination by CITA, key FLVS staff and experts in the school library media community. The current lack of protection, if there is a censorship attempt at the FLVS, may also have implications for other state-sponsored virtual schools that find themselves in a similar situation where accreditation standards may lack such a policy and or procedure. These same concerns may exist for any virtual school with a materials selection or challenge policy.

Second, while current CITA standards require accredited virtual schools to employ administrative officers, counselors, curriculum writers/editors and instructional support personnel, no mention is made of employing a school library media specialist. Although current SACS accreditation standards call for two school library media specialists to be employed for a ‘brick-and-mortar’ high school containing between 1,000-1,249 students, current CITA standards lack both this requirement and any type of staffing formula that would assist a virtual school in making sure that staffing patterns were sufficient to attain “the vision, mission and goals of the school” (SACS, 2005, p. 7) and support the information-seeking behavior of the staff and students. The current study has identified a new position that was recently added at the FLVS and is currently referred to as the curriculum resource specialist. The job description described an individual with a background in information technology, with experience in educational resource procurement. The person in the position currently holds a valid state of Florida teaching certificate with a school library media specialist certification. While the
establishment of this new position was not required to meet current CITA standards, the FLVS saw and met a need that existed in the virtual school environment by creating this new position. Based on these conclusions, it is too early to tell whether the individual currently serving as the curriculum resource specialist will perform specifically School Library Media Specialist (SLMS) type duties. The establishment of this new position may prove relevant to other state-sponsored virtual schools who are looking for ways to address issues related to supporting the information-seeking behavior of staff and students through educational resource procurement within the virtual school environment, while also providing an initial job description that could be adapted or applied to other similar virtual school settings.

Finally, while accreditation standards in the ‘brick-and-mortar’ environment have been in place and refined and tested over many years, those like the CITA standards appear to be in a maturation phase. There may be a need for either additional or different indicators and questions posed to further address the provision of educational materials and staffing to support the information-seeking behavior of a virtual school that is accredited by the Southern Association of Colleges and Schools (SACS).

The results of the present study have detailed the information-seeking behavior of the staff and students in a virtual school setting. The examination of information literacy integration, selected demographics, as well as issues focused on educational/legislative policies, state budgetary policies and accreditation issues have provided the context needed to present the results of this study. As this study comes to a close, the findings and conclusions presented to this point serve as the basis to discuss recommendations for future areas of research.

**Recommendations For Future Research**

As an initial foray into the virtual high school setting, this exploratory case study has provided data concerning the complex and multifaceted issues surrounding the information-seeking behavior of the staff and students in a virtual high school setting. This study has uncovered a rich set of findings related to information-seeking behavior in a virtual high school setting, but much more research is needed with the staff and students in this environment in order to understand their information-seeking behavior. Although additional research in the specific setting of the Florida Virtual School (FLVS) is needed.
and desirable, the research needs suggested below, while sometimes referencing the FLVS, attempt to present a research agenda that is applicable to a wide range of virtual school settings.

As a first step, future work on virtual high schools is needed to validate the findings presented here. Because this study was the first to focus on the information-seeking behavior of the staff and students in a virtual high school setting, continued work with different populations, such as middle school students and the staff and students of other state-sponsored virtual schools, would contribute to the body of knowledge and provide further insight into the critical case studied. The fact that the berrypicking method showed up so strongly among all of the participants in this study raises numerous questions. Are students taught a linear process when in the digital environment most people given the choice are searching in a berrypicking mode? Is a re-design of instruction needed? What would happen if researchers looked at the information-seeking behavior of staff and students in the ‘brick-and-mortar’ environment through the berrypicking lens? Future work might also focus more narrowly on specific aspects of virtual K-12 students’ information-seeking behavior, while using a different information-seeking model or theory to look at various aspects of information-seeking behavior in a virtual K-12 environment. Other issues arose during this study that require further investigation, i.e., are certain disciplines less amenable to berrypicking, e.g., math and science where teachers exhibited a linear information behavior. Also is subject searching an overarching linear activity in which berrypicking behavior occurs, as the inconsistencies in findings suggest?

Subsequently, through the initial identification of key administrative positions within the virtual school studied, future studies are needed to create a more detailed description and better understanding of how each administrative department within a virtual school interacts with other essential administrative units to support the information-seeking behavior of staff and students within the virtual school environment.

Further research is also needed to examine the key role that instructional designers/course developers (ID/CD) play in a K-12 virtual school environment. Staff members in these types of positions contribute to and control the majority of content incorporated into courses through the approval of key administrators. They are essentially
the gatekeepers of integrated and supplementary information resources and services used in the virtual school setting investigated. While the ID/CD studied relied upon their own self-taught search techniques, do ID/CD at other similarly established state-sponsored virtual schools rely on their own self-taught search techniques? If provided with proper training in search techniques, is there a noticeable difference in the information resources and services identified for inclusion in online courses designed?

Further studies are needed that focus on the level of information resource and service integration in relation to virtual school teachers to determine if the high level identified in this critical case is consistent with other virtual K-12 school settings. Likewise, more attention is needed to address teacher- or department-developed knowledge bases identified through the course of this study. Future research focusing on these important sources of supplemental information may help to inform best practices for teachers in all state-sponsored virtual schools.

More research is also needed that focuses on the information-seeking behavior of students in the virtual K-12 environment. The current study identified that students surveyed in the virtual environment, who also attend a ‘brick-and-mortar’ school with a library, place very little importance on seeking out resources from the school library media center, or the school library media specialist. Further research is needed that focuses on school library media specialists and their level of support in regard to assisting FLVS students’ information-seeking behavior. While the current study provided baseline data detailing FLVS student use of the “Ask A Librarian” service, additional studies are needed to investigate other similar virtual reference desk services that are focused on supporting the information-seeking behavior of K-12 students.

Subsequently, further research is needed to gain a greater understanding regarding the level of information literacy integration in the virtual K-12 environment. Inserting information literacy in a systematic way could have a greater impact than in any single ‘brick-and-mortar’ school or school district. Future work is needed that focuses on assessing students through an information literacy assessment like the iSkills™ test developed by the Educational Testing Service (ETS), or the Tool for Real-time Assessment of Information Literacy Skills (TRAILS). The integration and assessment of
information literacy in the virtual K-12 environment is an area in which much research is needed.

As was indicated, the majority of instructional designers/course developers (ID/CD), teachers and students studied prefer the berrypicking method regardless of the demographics identified. In order to obtain a greater picture, further research is needed that includes other demographic elements beyond those included in this study. It is possible that other demographic variables, not included in this study, could affect the berrypicking preference of ID/CD, teachers and students in the virtual school environment.

State legislative and funding policies can have a profound effect on the stability and growth of a state-sponsored virtual school. More research is needed detailing the current FLVS performance-based funding formula. This research may inform new and existing state-sponsored virtual schools that are looking to solve existing funding issues that may currently exist within their respective states.

While this study was the first to examine the educational materials section of the Commission on International and Trans-Regional Accreditation (CITA) guidelines, more research is needed. Other accrediting organizations exist and provide accreditation standards for other state sponsored K-12 virtual schools in the United States. Future research is needed that compares and contrasts the current levels of educational materials accreditation standards that exist in this new and evolving form of K-12 education. Research is also needed that addresses areas that are omitted from Florida and possibly other state accreditation standards. The possibility of a material challenge occurring in the virtual school setting seems probable and the inclusion of a requirement for a materials selection policy in virtual schools warrants further examination. Likewise, future research is needed that explores the issues associated with the lack of requirement in virtual school accreditation standards for a central position with librarian skills, such as the recently hired curriculum specialist at the FLVS.

While the problem that prompted this research is far from completely resolved, the data collected has provided a snapshot of a critical case detailing the information-seeking behavior of staff and students in the K-12 virtual school setting. Specific suggestions have been proposed to assist researchers and key stakeholders in applying
what is currently known about information-seeking behavior in the K-12 virtual school setting. Further research that addresses the areas and issues identified will substantiate and expand upon the conclusions presented here.
APPENDIX A

Human Subjects Committee Approval Memorandum

Florida State University

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2763
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 3/29/2005

To:
Christopher Hart
190 Fox Run Circle
Crawfordville, Florida 32327

Dept.: INFORMATION STUDIES

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
    Exploring the provisional of information resources and services for the Florida Virtual School: A case study

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Exempt per 45 CFR § 46.101(b) 2 and has been approved by an accelerated review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If the project has not been completed by 3/24/2006 you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. Also, the principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446.

Cc: Eliza Dresang
HSC No. 2005.235
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 FAX (850) 644-4392

APPROVAL MEMORANDUM (for change in research protocol)

Date: 3/29/2005

To:
Christopher Hart
190 Fox Run Circle
Crawfordville, Florida 32327

Dept: INFORMATION STUDIES

From: Thomas L. Jacobson, Chair

Re: Use of Human subjects in Research
Project entitled: Exploring the provisional of information resources and services for the Florida Virtual School: A case study

The memorandum that you submitted to this office in regard to the requested change in your research protocol for the above-referenced project have been reviewed and approved. Thank you for informing the Committee of this change.

A reminder that if the project has not been completed by 3/14/2007 you must request renewed approval for continuation of the project.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446.

cc: Eliza Dresang
APPLICATION NO   2006 0251-R
APPENDIX B

Human Subjects Consent Forms

INFORMED CONSENT FORM – FLVS ADMINISTRATOR

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled “Exploring The Information-Seeking Behavior of The Staff and Students of The Florida Virtual School: A Case Study.”

Christopher T. Hart, who is a Doctoral Candidate in the College of Information at Florida State University, is conducting this research. I understand the purpose of his research project is to better understand the ways in which the Florida Virtual School (FLVS) is selecting information resources to support the school. In addition, the research project is also exploring how FLVS administrators view their responsibility to assure that students and teachers can obtain the information resources and services they need to support their learning and teaching. I understand that if I participate in the project, I will be asked questions about my feelings and reactions to these areas.

I understand I will be asked to participate in an individual interview with the researcher. The time commitment involved in this interview would be 45 minutes. I will also be asked to complete an electronic survey. The time commitment involved in filling out the survey would be about 20 minutes. The total time for the study will be one hour and five minutes.

I understand that my participation is totally voluntary and that I may stop participation at anytime. All of the answers to the questions will be kept confidential to the extent allowed by law and identified by a subject code number. My name will not appear on any of the results. No individual responses will be reported. Only group findings will be reported.

I understand that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which I may otherwise be entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Christopher T. Hart, OTI: User Services, University Center Building C, Suite 6130, Florida State University, Tallahassee, Florida 32306, (850) 645-4688, chart@admin.fsu.edu, or Dr. Eliza T. Dresang, Florida State University, College of Information, 242-A LSB, (850) 644-5877, dresang@mailer.fsu.edu for answers to questions about this research or my rights. Group results will be sent to me upon my request.

If I have questions about my rights as a subject/participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, at (850) 644-8633.

I understand that I will be (tape recorded or videotaped) by the researcher. The researcher will keep all tapes used in a locked filing cabinet. I understand that only the researcher will have access to these tapes and that they will be destroyed by August 1, 2010.

I have read and understand this consent form.

FLVS Administrator Signature

Date
INFORMED CONSENT FORM – FLVS INSTRUCTIONAL DESIGNER AND COURSE DEVELOPER

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled "Exploring The Information-Seeking Behavior of The Staff and Students of The Florida Virtual School: A Case Study."

Christopher T. Hart, who is a Doctoral Candidate in the College of Information at Florida State University, is conducting this research. I understand the purpose of his research project is to better understand the ways in which the Florida Virtual School (FLVS) is selecting information resources to support the school. In addition, the research project is also exploring how FLVS instructional designers and course developers get access to and seek out the information resources they need to assist them in inserting (or integrating) information resources into the curriculum. I understand that if I participate in the project, I will be asked questions about my feelings and reactions to these areas.

I understand I will be asked to participate in an individual interview with the researcher. The time commitment involved in this interview would be 45 minutes. I will also be asked to complete an electronic survey. The time commitment involved in filling out the survey would be about 20 minutes. The total time for the study will be one hour and five minutes.

I understand that my participation is totally voluntary and that I may stop participation at anytime. All of the answers to the questions will be kept confidential to the extent allowed by law and identified by a subject code number. My name will not appear on any of the results. No individual responses will be reported. Only group findings will be reported.

I understand that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which I may otherwise be entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Christopher T. Hart, OTI: User Services, University Center Building C, Suite 6130, Florida State University, Tallahassee, Florida 32306, (850) 645-4688, chart@admin.fsu.edu, or Dr. Eliza T. Dresang, Florida State University, College of Information, 242-A LSB, (850) 644-5877, dresang@mailer.fsu.edu for answers to questions about this research or my rights. Group results will be sent to me upon my request.

I understand that I will be (tape recorded or videotaped) by the researcher. The researcher will keep all tapes used in a locked filing cabinet. I understand that only the researcher will have access to these tapes and that they will be destroyed by August 1, 2010.

I have read and understand this consent form.

FLVS Instructional Designer/Course Developer Signature  Date
INFORMED CONSENT FORM – FLVS TEACHER

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled “Exploring The Information-Seeking Behavior of The Staff and Students of The Florida Virtual School: A Case Study.”

Christopher T. Hart, who is a Doctoral Candidate in the College of Information at Florida State University, is conducting this research. I understand the purpose of his research project is to better understand the ways in which the Florida Virtual School (FLVS) is selecting information resources to support the school. In addition, the research project is also exploring How FLVS teachers get access to and seek out the information resources they need to assist them in providing instruction. I understand that if I participate in the project, I will be asked questions about my feelings and reactions to these areas.

I understand I will be asked to fill out an electronic survey. The time commitment involved in filling out the survey would be about 20 minutes. I may also be asked to participate in an online focus group interview. The time commitment involved in the online focus group interview would be 45 minutes. The maximum total time for the study will be one hour and five minutes.

I understand that my participation is totally voluntary and that I may stop participation at anytime. All of the answers to the questions will be kept confidential to the extent allowed by law and identified by a subject code number. My name will not appear on any of the results. No individual responses will be reported. Only group findings will be reported.

I understand that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which I may otherwise be entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Christopher T. Hart, OTI: User Services, University Center Building C, Suite 6130, Florida State University, Tallahassee, Florida 32306, (850) 645-4688, chart@admin.fsu.edu, or Dr. Eliza T. Dresang, Florida State University, College of Information, 242-A LSB, (850) 644-5877, dresang@mailer.fsu.edu for answers to questions about this research or my rights. Group results will be sent to me upon my request.

If I have questions about my rights as a subject/participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, at (850) 644-8633.

I understand that if I am selected to participate in the online focus group interview my conversation will be recorded to an electronic log file by the researcher for analysis. The researcher will keep all electronic log files generated on disks in a locked filing cabinet. I understand that only the researcher will have access to these disks and that they will be destroyed by August 1, 2010.

I have read and understand this consent form.

---

FLVS Teacher Signature

Date
INFORMED CONSENT FORM – FLVS PARENT

Dear Florida Virtual School parent,

Congratulations on the successful participation by your child in an online course with the Florida Virtual School. You and your child are to be commended for your hard work and dedication to this point.

I am a doctoral candidate in the College of Information at Florida State University. I am conducting a dissertation research study to document how Florida Virtual School students seek out and use information resources and services. Since this method of learning is relatively new it is important to find out information about students’ experiences in online learning so that future improvements can be made.

If you give permission and your child agrees to participate in a survey to help researchers understand more about online learning, please read the following information carefully before clicking the link below. If you do not want to give permission for your child to participate in research by completing an online survey, simply delete this email and no other attempt will be made to include your child’s opinions in this research project.

Your child’s participation will involve answering a four question online survey that will take approximately 5 minutes to complete. Your participation, as well as that of your child, in this study is voluntary. If you or your child chooses not to participate or to withdraw from the study at any time, there will be no penalty and it will not affect your child’s grade. The results of the research study will be published in a dissertation about the information seeking aspects of an online high school like the one your child is currently attending or has attended, but your child’s name will not be used.

Once the survey is completed, the results will remain private. No identifying information will be collected. Christopher T. Hart, a Florida State University doctoral candidate under the direction of Dr. Eliza T. Dresang, will collect the results for all of the survey information.

Although there may be no direct benefit to your child, the possible benefit of your child’s participation may assist in making future improvements to this method of learning in an online environment.

If you have any questions concerning this research study or your child’s participation in the study, please contact Christopher T. Hart, OTI: User Services, University Center Building C, Suite 6130, Florida State University, Tallahassee, Florida 32306, (850) 645-4688, chart@admin.fsu.edu or Dr. Eliza T. Dresang, Florida State University, College of Information, 242-A LSB, (850) 644-5877, dresang@mailer.fsu.edu.

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects
Committee, Institutional Review Board, through the vice President for the Office of Research at (850) 644-8633.

By allowing your child to follow the link below you are signifying that:
   1. Both student and parent have read all of the information above
   2. The parent has given permission for the student to participate in the research
   3. The student agrees to voluntarily take the survey

Thank you for your help with this research project,

Mr. Christopher T. Hart
Doctoral Candidate
College of Information
Florida State University

Link to survey: http://www.
YOUTH ASSENT FORM – FLVS STUDENT

Dear Florida Virtual School student,

Congratulations on your successful participation in an online course with the Florida Virtual School. You are to be commended for your hard work and dedication to this point.

I am a doctoral candidate in the College of Information at Florida State University. I am conducting a dissertation research study to document how Florida Virtual School students seek out and use information resources and services. Since this method of learning is relatively new it is important to find out information about students' experiences in online learning so that future improvements can be made.

Your participation will involve answering a four question online survey that will take approximately 5 minutes to complete. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty and it will not affect your grade. The results of the research study will be published in a dissertation about the information seeking aspects of an online high school like the one you are currently attending or have attended, but your name will not be used.

Once the survey is completed, the results will remain private. No identifying information will be collected. Christopher T. Hart, a Florida State University doctoral candidate under the direction of Dr. Eliza T. Dresang, will collect the results for all of the survey information.

Although there may be no direct benefit to your participation in the study, your participation may assist in making future improvements to this method of learning in an online environment.

If you have any questions concerning this research study, please have your parent or guardian contact Christopher T. Hart, OTI: User Services, University Center Building C, Suite 6130, Florida State University, Tallahassee, Florida 32306, (850) 645-4688, chart@admin.fsu.edu or Dr. Eliza T. Dresang, Florida State University, College of Information, 242-A LSB, (850) 644-5877, dresang@mail.fsu.edu.

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the vice President for the Office of Research at (850) 644-8633.

By following the link below you are signifying that you agree to voluntarily take the survey.

Thank you for your help with this research project,
Mr. Christopher T. Hart
Doctoral Candidate
College of Information
Florida State University

Link to begin survey:
Hello! My name is Chris Hart, and I am a doctoral candidate at Florida State University. I appreciate your willingness to participate in this interview today. As I indicated in your consent form, I am conducting research to explore how Florida Virtual School (FLVS) administrators view their responsibility to assure that students and teachers can obtain the information resources and services they need to support their learning and teaching.

I am very interested in your perspective as an educational leader in the virtual school movement in Florida and the nation. You were selected because of your role as an administrator at the FLVS and because of the important state and national perspectives you have regarding the virtual school concept. Today we will be discussing your perspectives regarding issues specific to obtaining information resources and services as it relates to students and teachers in the virtual school environment.

No names will be used when reporting the results of this interview and your responses will be confidential. I am interested in all comments whether they are positive or negative. The interview should last approximately 45 minutes.

With your permission, I would like to tape-record the interview for later transcription. I will summarize the main ideas you discuss at the conclusion of the interview. In appreciation of your participation in this interview, I will provide a copy of my research to the Florida Virtual School upon the completion of the study. I hope that you find our session today beneficial as we discuss this important topic.

**Interview Questions**

1. How many years have you worked at the FLVS? [IQ]

2. How long have you been in your current position at the FLVS? [IQ]

3. What personnel are involved in the selection of information resources and services used by the FLVS? [IQ]

**Definition:** Information resources are defined as materials of all types and in all formats such as traditional print and electronic resources, including CD-ROM databases, websites, and electronic journals. Information services are defined as technological or multi-media resources used for the primary purpose of supporting and enhancing the educational opportunities offered by the school.

4. What role do you play in assuring that teachers are able to obtain needed information resources and services to support their teaching and learning? [ISB IC]

5. What role do you play in assuring that students are able to obtain needed information resources and services to support their learning? [ISB 1A]
6. Please describe your responsibility as it relates to planning for teacher use of information resources and services in courses at the FLVS? [ISB 1D]

7. Please describe your responsibility as it relates to planning for student use of information resources and services in courses at the FLVS? [ISB 1B]

8. Can you please explain how information literacy is incorporated into the FLVS curriculum? [IF 1A, IF 1B]

**Definition:** “To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information” (American Library Association, 1989).

9. Can you please describe how any state legislative policy issues, not including funding based policies, affect the selection of information resources and services for teachers and students at the FLVS? [CI 1A, CI 1C]

10. Can you please describe how any state legislative policy issues, not including funding based policies, affect the use of information resources and services for teachers and students at the FLVS? [CI 1B, CI 1D]

11. Can you please describe how any funding policy issues affect the Florida Virtual School’s ability to select information resources and services? [CI 2A]

12. Can you please describe how any funding policy issues affect the Florida Virtual School’s ability to use information resources and services? [CI 2B]

13. Can you please describe how any accreditation issues affect the Florida Virtual School’s ability to select information resources and services? [CI 3A]

14. Can you please describe how any accreditation issues affect the Florida Virtual School’s ability to use information resources and services? [CI 3B]

15. I understand that the FLVS uses the statewide “Ask-A-Librarian” service. Can you please describe how important this service is to the teachers, staff and students of the FLVS? [NC]

16. Is there anything else that you would like to comment on regarding information resources and services as it relates to teachers and students in the virtual school environment? [NC]

I would like to thank you very much for your time and support in participating in this interview and hope that you have found the session beneficial. Thank you.
APPENDIX D

FLVS Instructional Designer and Course Developer Interview Protocol

Hello! My name is Chris Hart, and I am a doctoral candidate at Florida State University. I appreciate your willingness to participate in this interview today. As I indicated in your consent form, I am conducting research to explore how Florida Virtual School (FLVS) course design members get access to and seek out the information resources they need to assist them in inserting (or integrating) information resources into the curriculum.

I am very interested in your perspective as an educational leader in the virtual school movement in Florida and the nation. You were selected because of your role as a member of the course design team at the FLVS and because of the important state and national perspectives you have regarding the virtual school concept. Today we will be discussing your perspectives regarding issues specific to obtaining information resources and services as it relates to students and teachers in the virtual school environment.

No names will be used when reporting the results of this interview and your responses will be confidential. I am interested in all comments whether they are positive or negative. The interview should last approximately 45 minutes.

With your permission, I would like to tape-record the interview for later transcription. I will summarize the main ideas you discuss at the conclusion of the interview. In appreciation of your participation in this interview, I will provide a copy of my research to the Florida Virtual School upon the completion of the study. I hope that you find our session today beneficial as we discuss this important topic.

Interview Questions

1. How many years have you worked at the FLVS? [IQ]

2. How long have you been in your current position at the FLVS? [IQ]

3. What personnel are involved in the selection of information resources and services used by the FLVS? [IQ]

Definition: Information resources are defined as materials of all types and in all formats such as traditional print and electronic resources, including CD-ROM databases, websites, and electronic journals. Information services are defined as technological or multi-media resources used for the primary purpose of supporting and enhancing the educational opportunities offered by the school.

4. Can you please explain the process of how you seek out information resources and services used in the design or development of courses at the FLVS? [ISB 2A]

5. Can you please explain how you use the information resources and services identified when designing or developing courses at the FLVS? [ISB 2B]
6. Which of the following scenarios best describes how you seek resources for course development? [ISB 2A, ISB 2B]

**Scenario A:**

When searching for information resources (e.g., textbooks, websites, articles, etc.) to incorporate in a course that is under development I usually search for one type of material or one subject at a time, evaluate what I find, and then move on to another type.

**Scenario B:**

When searching for information resources (e.g., textbooks, websites, articles, etc.) to incorporate in a course that is under development I usually search through a variety of materials, identifying useful information and references throughout the search process, but not necessarily limiting my search to one type of material or one subject at a time.

7. Do you have any knowledge of how teachers at the FLVS, who are not instructional designers or course developers, seek out and use supplemental and or additional information resources from those supplied by the instructional designers and course developers? [ISB 3A, ISB 3B]

8. If you do have knowledge of teachers seeking out and using supplemental resources, without using any names, could you provide an example of this behavior? [ISB 3A, ISB 3B]

9. Can you please explain how information literacy is incorporated into the FLVS curriculum? [IF 1A, IF 1B]

**Definition:** “To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information” (American Library Association, 1989).

10. Can you please describe how any funding policy issues may affect your ability to select information resources and services? [CI 2A]

11. Can you please describe how any funding policy issues may affect your ability to use information resources and services? [CI 2B]

12. Can you please describe how any accreditation issues may affect your ability to select information resources and services? [CI 3A]

13. Can you please describe how any accreditation issues may affect your ability to use information resources and services? [CI 3B]
14. I understand that the FLVS uses the statewide “Ask-A-Librarian” service. Can you please describe how important this service is to the teachers, staff and students of the FLVS? [NC]

15. Is there anything else that you would like to comment on regarding information resources and services as it relates to teachers and students in the virtual school environment? [NC]

I would like to thank you very much for your time and support in participating in this interview and hope that you have found the session beneficial. Thank you.
APPENDIX E

FLVS Administrator Survey

Background Information
Directions: Please select the letter of the choice that most closely matches you:

1. Age: [IF 2D]
   a. 20-30
   b. 31-40
   c. 41-50
   d. 51-60+

2. Gender: [IF 2C]
   a. Male
   b. Female

3. Highest degree completed: [IF 2A]
   a. BA or BS
   b. MA or MS
   c. Specialist or advanced masters
   d. Doctorate

4. Administrative experience including years prior to working at the Florida Virtual School: [IF 2B]
   a. 0 year
   b. 1-5 years
   c. 6-10 years
   d. 11-15 years
   e. 16-20+ years

5. Years at the Florida Virtual School: [IF 2B]
   a. Less than one year
   b. 1 year
   c. 2 years
   d. 3+ years

6. Have you ever served in an administrative capacity at a brick and mortar school before joining the staff of the Florida Virtual School? [NC]
   a. Yes
   b. No
7. If you answered yes to the previous question, did the brick and mortar school employ a certified school library media specialist? [NC]
   a. Yes
   b. No

**Content**

Directions: In your role as an administrator, please estimate how often you are involved in each of the activities listed below. Select the appropriate number using the following scale:

1 = Never involved (Someone else is responsible for this)
2 = Rarely involved (Meet with those responsible less than once a month)
3 = Sometimes/Occasionally involved (Meet with those responsible about once a month)
4 = Frequently involved (Meet with those responsible more than once a month)
5 = Always involved (Directly responsible for this)
NA = Not applicable

Never Always
1 2 3 4 5 NA

8. As an administrator at the Florida Virtual School how involved are you in making sure that students are able to seek out needed information resources to support their learning? [ISB 1A]

**Definition:** Information resources are defined as materials of all types and in all formats such as traditional print and electronic resources, including CD-ROM databases, websites, and electronic journals.

1 2 3 4 5 NA

9. As an administrator at the Florida Virtual School how involved are you in making sure that students are able to seek out needed information services to support their learning? [ISB 1A]

**Definition:** Information services for students are defined as any service that supports access to current and reliable information resources.

1 2 3 4 5 NA

10. As an administrator at the Florida Virtual School how involved are you in making sure that students are able to use information resources to support their learning? [ISB 1B]

1 2 3 4 5 NA

11. As an administrator at the Florida Virtual School how involved are you in making sure that students are able to use information services to support their learning? [ISB 1B]

1 2 3 4 5 NA

12. As an administrator at the Florida Virtual School how involved are you in making sure that teachers are able to seek out information resources to support their teaching? [ISB 1C]

1 2 3 4 5 NA
13. As an administrator at the Florida Virtual School how involved are you in making sure that teachers are able to seek out information services to support their teaching? [ISB IC]

14. As an administrator at the Florida Virtual School how involved are you in making sure that teachers are able to use information resources to support their teaching? [ISB ID]

15. As an administrator at the Florida Virtual School how involved are you in making sure that teachers are able to use information services to support their teaching? [ISB ID]

16. As an administrator at the Florida Virtual School how involved are you in promoting the integration of information literacy into the curriculum? [IF 1A, IF 1B]

**Definition:** “To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information” (American Library Association, 1989).

17. As an administrator at the Florida Virtual School how involved are you in promoting the use of the “Ask A Librarian” service provided through the State Library of Florida? [NC]

**Contextual Issues**

Directions: In your role as administrator, please estimate how often the contextual issues described affect the Florida Virtual School. Select the appropriate number using the following scale:

1 = Never
2 = Rarely (Less than once a month)
3 = Sometimes/Occasionally (About once a month)
4 = Frequently (More than once a month)
5 = Always
NA = Not applicable

18. How often do policies at the state level affect the ability of staff (i.e., instructional designers, course developers, and teachers) when seeking out information resources and services. [CI 1A]

19. How often do policies at the state level affect the ability of staff (i.e., instructional designers, course developers, and teachers) when using information resources and services. [CI 1B]

20. How often do policies at the state level affect the ability of students when seeking out information resources and services. [CI 1C]
21. How often do policies at the state level affect the ability of students when using information resources and services. [CI 1D]

22. How often do budgetary policy issues at the state level affect the ability of the Florida Virtual School when seeking out information resources and services. [CI 2A]

23. How often do budgetary policy issues at the state level affect the ability of the Florida Virtual School when using information resources and services. [CI 2B]

Directions: The latest accreditation standards from The Commission on International and Trans-Regional Accreditation (CITA) now include quality indicators for educational materials. In your role as administrator, please rate each item below based on how well the Florida Virtual School is doing in meeting the quality indicators listed below. Select the appropriate number using the following scale:

1 = Absent
2 = Emerging
3 = Effective
4 = Exemplary
NA = Not applicable

24. Based on the most recent CITA standards that require the school to adopt and implement a policy concerning the selection of educational materials, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.1 Educational Materials** – “The school adopts and implements a policy concerning the selection of educational materials, which is based on sound educational research and practice” (CITA, 2005, p. 3).

25. Based on the most recent CITA standards that require the school to select instructional materials to support the specific objectives of the individual course, as well as the overall mission and goals of the school, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.2 Educational Materials** – “The instructional materials are selected to support the specific objectives of the individual course, as well as the overall mission and goals of the school” (CITA, 2005, p. 3).
26. Based on the most recent CITA standards that require the school to provide current materials to students that match course objectives, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.3 Educational Materials** – “The materials provided to the student are current and match with the course objectives. The reading level of the materials is appropriate to the reading level competence of the students” (CITA, 2005, p. 4).

27. Based on the most recent CITA standards that require the school to provide students with supplementary materials based on course objectives, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.4 Educational Materials** – “Appropriate study guides and supplementary materials are provided and based on course objectives” (CITA, 2005, p. 4).

28. Based on the most recent CITA standards that require the school to employ effective and systematic procedures for ensuring staff have equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support the curriculum, and the instructional program, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.5 Educational Materials** – “Employs effective and systematic procedures for ensuring...staff equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support...the curriculum, and the instructional program” (CITA, 2005, p. 4).

29. Based on the most recent CITA standards that require the school to employ effective and systematic procedures for ensuring students have equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support student learning, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.5 Educational Materials** – “Employs effective and systematic procedures for ensuring students...equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support student learning” (CITA, 2005, p. 4).
30. While the most recent CITA standards do not require the school to employ effective and systematic procedures related to the use of information resources and services, how would you rate the Florida Virtual School on this quality indicator? [CI 3B]
APPENDIX F

FLVS Instructional Designer and Course Developer Survey

Background Information
Directions: Please circle the letter of the choice that most closely matches you:

1. Gender: [IF 2C]
   a. Male
   b. Female

2. Age: [IF 2D]
   a. 20-30
   b. 31-40
   c. 41-50
   d. 51-60+

3. Highest degree completed: [IF 2A]
   a. BA or BS
   b. MA or MS
   c. Specialist or advanced masters
   d. Doctorate

4. Years of experience as a teacher: [IF 2B]
   a. 0 year
   b. 1-5 years
   c. 6-10 years
   d. 11-15 years
   e. 16-20+ years

5. Years of experience as a course designer: [IF 2B]
   a. 0 year
   b. 1-5 years
   c. 6-10 years
   d. 11-15 years
   e. 16-20+ years

6. Years of experience at the Florida Virtual School: [IF 2B]
   a. 0 year
   b. 1 year
   c. 2 Years
   d. 3+ years
7. Number of courses that you have assisted in designing while employed by the Florida Virtual School: [IF 2B]
   a. 1-2 courses
   b. 3-4 courses
   c. 5-6 courses
   d. 7+ courses

8. Prior to teaching at the Florida Virtual School did you teach at a traditional “brick and mortar” school? [NC]
   a. Yes
   b. No

8. If you answered yes to the question listed above, did the school employ a library media specialist? [NC]
   a. Yes
   b. No

   1 = Never
   2 = Rarely (Less than once a month)
   3 = Sometimes/Occasionally (About once a month)
   4 = Frequently (More than once a month)
   5 = Always
   NA = Not applicable

10. If you answered yes to question 9 above, based on the above scale, how often did you collaborate with the library media specialist? [NC]

**Definition:** Collaboration occurs when “the Library Media Specialist plans, develops materials, teaches, and evaluates student work and the overall project collaboratively with the classroom teacher” (The Information-Powered School, 2002).

**Content**
Directions: Please circle the letter of the choice that most closely matches you:

11. When seeking out information resources (e.g., textbooks, websites, articles, etc.) for the purpose of integrating them into the curriculum, I usually: [ISB 2A]
    a. Focus my search on one type of material at a time.
    b. Search through a variety of materials, moving back and forth among types.
12. When seeking out information resources (e.g., textbooks, websites, articles, etc.) for the purpose of integrating them into the curriculum, I usually: [ISB 2A]
   a. Focus my search on one subject at a time.
   b. Search on a variety of subjects at a time, moving back and forth among topics.

13. When seeking out information resources (e.g., textbooks, websites, articles, etc.) for the purpose of integrating them into the curriculum, I usually: [ISB 2A]
   a. Evaluate what I find before moving on to another type of material.
   b. Sometimes evaluate materials as I locate them and sometimes locate several and then evaluate them individually or comparatively.

14. Which of the following scenarios best describes how you seek resources for course development: [ISB 2A]

**Scenario A:**

When searching for information resources (e.g., textbooks, websites, articles, etc.) to incorporate in a course that is under development I usually search for one type of material or one subject at a time, evaluate what I find, and then move on to another type.

**Scenario B:**

When searching for information resources (e.g., textbooks, websites, articles, etc.) to incorporate in a course that is under development I usually search through a variety of materials, identifying useful information and references throughout the search process, but not necessarily limiting my search to one type of material or one subject at a time.
Directions: For the next question please type the appropriate number from the scale listed below next to each item to estimate how often these activities took place during the design or development phase of a course.

15. When designing or developing a course, from where do you obtain your *information resources* (e.g., textbooks, websites, articles, etc.)?  
   
   1=Frequently  2=Sometimes  3=Seldom  4=Never

   _____ a. The Florida Virtual School
   _____ b. The Florida Electronic Library
   _____ c. Public Library
   _____ d. Community College Library
   _____ e. University/College Library
   _____ f. The Internet
   _____ g. “Ask a Librarian”
   _____ h. Other (Please explain) ________________________________

16. When using *information resources* to design or develop a course, where do you obtain your content from:  

   1=Frequently  2=Sometimes  3=Seldom  4=Never

   _____ a. Textbooks
   _____ b. Printed books other than textbooks
   _____ c. Authoritative websites
   _____ d. Journals
   _____ e. eBooks
   _____ f. Online databases
   _____ g. Electronic encyclopedias
   _____ h. Other (Please explain) ________________________________

Directions: In your role as an instructional designer or course developer, please estimate the level of importance related to each of the activities listed below. Select the appropriate number using the following scale:

1 = Not Important  
2 = Somewhat important  
3 = Often important  
4 = Very important  
5 = Extremely Important  
NA = Not applicable

Not Extremely Important Important

1 2 3 4 5 NA 17. When using *information resources*, how important is ease of access when selecting a resource for inclusion in a course?  

   1=Not Important  2=Somewhat Important  3=Often Important  4=Very Important  5=Extremely Important  NA=Not applicable
**Definition:** Information resources are defined as materials of all types and in all formats such as traditional print and electronic resources, including CD-ROM databases, websites, and electronic journals.

1. 2. 3. 4. 5. NA 18. When using information services, how important is ease of access when using the service to select resources for inclusion in a course? [ISB 2B]

**Definition:** Information services are defined as any service that supports access to current and reliable information resources.

1. 2. 3. 4. 5. NA 19. When using information resources, how important is it for the resource(s) to be in an electronic format? [ISB 2B]

1. 2. 3. 4. 5. NA 20. When designing or developing a course, how important is the integration of information literacy? [IF 1A, IF 1B]

**Definition:** “To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information” (American Library Association, 1989).

1. 2. 3. 4. 5. NA 21. When designing or developing a course, how important is the “Ask A Librarian” service provided through the State Library of Florida? [NC]

**Contextual Issues**

Directions: In your role as administrator, please estimate how often the contextual issues described below affect the Florida Virtual School. Select the appropriate number using the following scale:

1 = Never  
2 = Rarely (Less than once a month)  
3 = Sometimes/Occasionally (About once a month)  
4 = Frequently (More than once a month)  
5 = Always  
NA = Not applicable

Never        Always  
1   2   3   4   5   NA 22. How often do policies at the state level affect your ability to seek out information resources and services. [CI 1A]

1   2   3   4   5   NA 23. How often do policies at the state level affect your ability to use information resources and services. [CI 1B]
1 2 3 4 5 NA 24. How often do policies at the state level affect the ability of students when seeking out information resources and services.
[CI 1C]

1 2 3 4 5 NA 25. How often do policies at the state level affect the ability of students when using information resources and services.
[CI 1D]

1 2 3 4 5 NA 26. How often do budgetary policy issues at the state level affect your ability to seek out information resources and services.
[CI 2A]

1 2 3 4 5 NA 27. How often do budgetary policy issues at the state level affect your ability to use information resources and services.
[CI 2B]

Directions: The latest accreditation standards from The Commission on International and Trans-Regional Accreditation (CITA) now include quality indicators for educational materials. In your role as an instructional designer or course developer, please rate each item below based on how well the Florida Virtual School is doing in meeting the quality indicators listed below. Select the appropriate number using the following scale:

1 = Absent
2 = Emerging
3 = Effective
4 = Exemplary
NA = Not applicable

Absent  Exemplary
1 2 3 4 NA 28. Based on the most recent CITA standards that require the school to adopt and implement a policy concerning the selection of educational materials, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

CITA Accreditation Standard: 3.2.1 Educational Materials – “The school adopts and implements a policy concerning the selection of educational materials, which is based on sound educational research and practice” (CITA, 2005, p. 3).

1 2 3 4 NA 29. Based on the most recent CITA standards that require the school to select instructional materials to support the specific objectives of the individual course, as well as the overall mission and goals of the school, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

CITA Accreditation Standard: 3.2.2 Educational Materials – “The instructional materials are selected to support the specific objectives of the individual course, as well as the overall mission and goals of the school” (CITA, 2005, p. 3).
Based on the most recent CITA standards that require the school to provide current materials to students that match course objectives, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.3 Educational Materials** – “The materials provided to the student are current and match with the course objectives. The reading level of the materials is appropriate to the reading level competence of the students” (CITA, 2005, p. 4).

Based on the most recent CITA standards that require the school to provide students with supplementary materials based on course objectives, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.4 Educational Materials** – “Appropriate study guides and supplementary materials are provided and based on course objectives” (CITA, 2005, p. 4).

Based on the most recent CITA standards that require the school to employ effective and systematic procedures for ensuring staff have equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support the curriculum, and the instructional program, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.5 Educational Materials** – “Employs effective and systematic procedures for ensuring...staff equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support…the curriculum, and the instructional program” (CITA, 2005, p. 4).

Based on the most recent CITA standards that require the school to employ effective and systematic procedures for ensuring students have equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support student learning, how would you rate the Florida Virtual School on this quality indicator? [CI 3A]

**CITA Accreditation Standard: 3.2.5 Educational Materials** – “Employs effective and systematic procedures for ensuring...equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support student learning” (CITA, 2005, p. 4).
34. While the most recent CITA standards do not require the school to employ effective and systematic procedures related to the use of information resources and services, how would you rate the Florida Virtual School on this quality indicator? [C1.3B]
APPENDIX G

FLVS Teacher Survey

Background Information
Directions: Please circle the letter of the choice that most closely matches you:

1. Age: [IF 2D]
   a. 20-30
   b. 31-40
   c. 41-50
   d. 51-60+

2. Gender: [IF 2C]
   a. Male
   b. Female

3. Highest degree completed: [IF 2A]
   a. BA or BS
   b. MA or MS
   c. Specialist or advanced masters
   d. Doctorate

4. Years of experience as a teacher: [IF 2B]
   a. 0 year
   b. 1-5 years
   c. 6-10 years
   d. 11-15 years
   e. 16-20+ years

5. Years of experience at the Florida Virtual School: [IF 2B]
   a. 0 year
   b. 1 year
   c. 2 years
   d. 3+ years

6. Please list the areas of certification that you currently have a valid teaching certificate for: [IF 2E]
   a. ______________________
   b. ______________________
   c. ______________________
   d. ______________________
7. Prior to teaching at the Florida Virtual School did you teach at a traditional “brick and mortar” school? [NC]
   a. Yes
   b. No

8. If you answered yes to the question listed above, did the school employ a library media specialist? [NC]
   a. Yes
   b. No

   1 = Never
   2 = Rarely (Less than once a month)
   3 = Sometimes/Occasionally (About once a month)
   4 = Frequently (More than once a month)
   5 = Always
   NA = Not applicable

   1  2  3  4  5  NA

9. If you answered yes to question 8, based on the above scale, how often did you collaborate with the library media specialist? [NC]

   **Definition:** Collaboration occurs when “the Library Media Specialist plans, develops materials, teaches, and evaluates student work and the overall project collaboratively with the classroom teacher” (The Information-Powered School, 2002).

**Content**

Directions: Please circle the letter of the choice that most closely matches you:

15. When seeking out supplemental and/or additional information resources (e.g., textbooks, websites, articles, etc.) from those supplied by the instructional designers and course developers, I usually: [ISB 3A]
   a. Focus my search on one type of material at a time.
   b. Search through a variety of materials, moving back and forth among types.
16. When seeking out supplemental and/or additional information resources (e.g., textbooks, websites, articles, etc.) from those supplied by the instructional designers and course developers, I usually: [ISB 3A]
   
   a. Focus my search on one subject at a time.
   b. Search on a variety of subjects at a time, moving back and forth among topics.

17. When seeking out supplemental and/or additional information resources (e.g., textbooks, websites, articles, etc.) from those supplied by the instructional designers and course developers, I usually: [ISB 3A]
   
   a. Evaluate what I find before moving on to another type of material.
   b. Sometimes evaluate materials as I locate them and sometimes locate several and then evaluate them individually or comparatively.

18. Which of the following scenarios best describes how you seek out supplemental and/or additional information resources from those supplied by the instructional designers and course developers: [ISB 3A]

**Scenario A:**

When searching for information resources (e.g., textbooks, websites, articles, etc.) to supplement those provided I usually search for one type of material or one subject at a time, evaluate what I find, and then move on to another type.

**Scenario B:**

When searching for information resources (e.g., textbooks, websites, articles, etc.) to supplement those provided I usually search through a variety of materials, identifying useful information and references throughout the search process, but not necessarily limiting my search to one type of material or one subject at a time.
Directions: For the next question please type the appropriate number from the scale listed below next to each item to estimate how often these activities took place when seeking out and using supplemental and/or additional information resources from those supplied.

19. When seeking out supplemental and/or additional information resources from those supplied by the instructional designers and course developers, from where do you obtain your information resources (e.g., textbooks, websites, articles, etc.)? [ISB 3A]

1=Frequently 2=Sometimes 3=Seldom 4=Never

a. The Florida Virtual School
b. The Florida Electronic Library
c. Public Library
d. Community College Library
e. University/College Library
f. The Internet
g. “Ask a Librarian”
h. Other (Please explain) ________________________________

20. When using information resources to supplement those supplied by the instructional designers and course developers, where do you obtain your content from? [ISB 3B]

1=Frequently 2=Sometimes 3=Seldom 4=Never

a. Textbooks
b. Printed books other than textbooks
c. Authoritative websites
d. Journals
e. eBooks
f. Online databases
g. Electronic encyclopedias
h. Other (Please explain) ________________________________
Directions: In your role as a teacher, please estimate the level of importance related to each of the activities listed below. Select the appropriate number using the following scale:

1 = Not Important
2 = Somewhat important
3 = Often important
4 = Very important
5 = Extremely Important
NA = Not applicable

16. When using information resources to enrich the current course content, how important is ease of access when selecting supplemental resources? [ISB 3B]

Definition: Information resources are defined as materials of all types and in all formats such as traditional print and electronic resources, including CD-ROM databases, websites, and electronic journals.

17. When using information services to enrich the current course content, how important is ease of access when using the service to select supplemental resources? [ISB 3B]

Definition: Information services are defined as any service that supports access to current and reliable information resources.

18. When using information resources to enrich the current course content, how important is it for the resource(s) to be in an electronic format? [ISB 3B]

19. When teaching a course, how important is the integration of information literacy? [IF 1A, IF 1B]

Definition: “To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information” (American Library Association, 1989).

20. When teaching a course, how important is the “Ask A Librarian” service provided through the State Library of Florida? [NC]
APPENDIX H
FLVS Student Survey

Directions: Please select the letter of the choice that most closely matches you:

1. Using the following choices, select the one that most closely describes you: [IF 2F]
   a. Home school student
   b. Student enrolled in a public high school
   c. Student enrolled in a private high school
   d. Take all courses through the Florida Virtual School

2. While completing this assignment I found that the resources made available through the Florida Virtual School provided: [NC]
   a. None of the information needed to complete my assignment
   b. Some of the information needed to complete my assignment
   c. Most of the information needed to complete my assignment
   d. All of the information needed to complete my assignment

Directions: For the next two questions please type the appropriate number from the scale listed below next to each item to estimate how often these activities took place during the course of completing this assignment.

3. Where did you obtain your books, journal articles, web sites, etc. to complete this assignment? [ISB 4A]
   1=Frequently   2=Sometimes   3=Seldom   4=Never
   ___ a. The Florida Virtual School
   ___ b. Your Local School Library
   ___ c. Public Library
   ___ d. Community College Library
   ___ e. University/College Library
   ___ f. The Internet
   ___ g. “Ask a Librarian”
   ___ h. Other (Please explain) ________________________________

4. While completing this assignment I relied on the following individual to answer questions about books, journal articles, web sites, or other information related to my assignments: [ISB 4B]
   1=Frequently   2=Sometimes   3=Seldom   4=Never
   ___ a. Current Florida Virtual School course teacher
   ___ b. Current high school library media specialist
   ___ c. Local public librarian
   ___ d. My parent(s)
   ___ e. “Ask a Librarian”
   ___ f. Other (Please explain) ________________________________
5. Which of the following scenarios best describes how you seek out information resources for the purposes of completing this research assignment: [ISB 4A]

**Scenario A:**

When searching for information resources (e.g., textbooks, websites, articles, etc.) to complete the assignment I usually search for one type of material or one subject at a time, evaluate what I find, and then move on to another type.

**Scenario B:**

When searching for information resources (e.g., textbooks, websites, articles, etc.) to complete the assignment I usually search through a variety of materials, identifying useful information and references throughout the search process, but not necessarily limiting my search to one type of material or one subject at a time.
### APPENDIX I

**Dissertation Research Question Matrix**

<table>
<thead>
<tr>
<th>Instruments</th>
<th>ID/CD Survey</th>
<th>Teacher Survey</th>
<th>Admin Survey</th>
<th>Student Survey</th>
<th>Admin Interview</th>
<th>ID/CD Interview</th>
<th>Total</th>
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<td>*</td>
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<td>1,2,3</td>
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<td>*</td>
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<td>5</td>
<td>*</td>
<td>3</td>
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<td>ISB 1B</td>
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<td>10,11</td>
<td>*</td>
<td>7</td>
<td>*</td>
<td>3</td>
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ISB = Information-Seeking Behavior
IF = Influencing Factors
CI = Contextual Issues
NC = No Code
* = Not needed for this instrument
Research Question Matrix Key

Information-Seeking Behavior (ISB) Questions:

1. How do FLVS administrators view their responsibility to assure that students and teachers can seek out and use the information resources and services they need to support their learning and teaching?

   **ISB 1 (Administrators)**
   How do FLVS administrators view their responsibility to assure that:
   
   **ISB 1A**: Students can seek out information resources and services  
   **ISB 1B**: Students can use information resources and services  
   **ISB 1C**: Teachers can seek out information resources and services  
   **ISB 1D**: Teachers can use information resources and services

2. How do FLVS instructional designers and course developers seek out and use the information resources and services they need to assist them in inserting (or integrating) information resources and services into the curriculum?

   **ISB 2 (Instructional Designers and Course Developers)**
   How do FLVS instructional designers and course developers:
   
   **ISB 2A**: Seek out information resources and services  
   **ISB 2B**: Use information resources and services

3. How do FLVS teachers seek out and use supplemental and/or additional information resources from those supplied by the instructional designers and course developers, needed to assist them in providing instruction?

   **ISB 3 (Teachers)**
   How do FLVS teachers:
   
   **ISB 3A**: Seek out supplemental and/or additional information resources  
   **ISB 3B**: Use supplemental and/or additional information resources

4. How do FLVS students seek out and use the information resources and services they need to support their learning when these are not provided as part of the course content?

   **ISB 4 (Students)**
   How do FLVS students:
   
   **ISB 4A**: Seek out information resources and services  
   **ISB 4B**: Use information resources and services
Influencing Factor (IF) Questions:

1. How is information literacy integrated into courses designed by the FLVS staff and how does this affect the student’s ability to seek out and use information resources and services?

IF 1 (Information Literacy)
How is information literacy integrated into courses designed by the FLVS staff and how does this affect the student’s ability to:

IF 1A: Seek out information resources and services
IF 1B: Use information resources and services

2. How do selected demographics such as educational background, experience, gender, age, instructional subject areas and students’ current educational environment affect the Florida Virtual School’s staff and students when seeking out and using information resources and services?

IF 2 (Selected Demographics)
How do selected demographics such as:

IF 2A: Educational background
IF 2B: Experience
IF 2C: Gender
IF 2D: Age range
IF 2E: Instructional subject areas

Contextual Issues (CI) Questions:

1. How have policies at the state educational and legislative levels affected the ability of the staff and students’ of the FLVS to seek out and use information resources and services?

CI 1 (State Educational/Legislative Policies)
How have policies at the state educational and legislative levels affected the ability of the:

CI 1A: Staff of the FLVS to seek out information resources and services
CI 1B: Staff of the FLVS to use information resources and services
CI 1C: Students of the FLVS to seek out information resources and services
CI 1D: Students of the FLVS to use information resources and services
2. How have budgetary policy issues affected the Florida Virtual School’s ability to seek out and use information resources and services?

**CI 2 (Budgetary Policies)**
How have budgetary policy issues affected the FLVS’s ability to:

- **CI 2A:** Seek out information resources and services
- **CI 2B:** Use information resources and services

3. How have accreditation issues affected the Florida Virtual School’s ability to seek out and use information resources and services?

**CI 3 (Accreditation Issues)**
How have accreditation issues affected the Florida Virtual School’s ability to:

- **CI 3A:** Seek out information resources and services
- **CI 3B:** Use information resources and services
## Student Resources

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<tr>
<th>Resource</th>
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<tr>
<td>FLVS Tutoring Area (FLVS Math courses only)</td>
<td>FLVS Math Tutors</td>
</tr>
<tr>
<td>Art and History</td>
<td>Art Lex Art Dictionary</td>
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<td>Calorie Control Council</td>
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<td>calculators, links to major newspapers--</td>
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<td>MORE!</td>
<td></td>
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# FLVS Curriculum Resource Specialist Job Description

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<th>Position Title:</th>
<th>CURRICULUM RESOURCE SPECIALIST CURRICULUM SERVICES</th>
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<td>Pay Grade 118</td>
</tr>
<tr>
<td>Reports to:</td>
<td>Director of Curriculum Services</td>
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## Position Description:

The Curriculum Resource Specialist negotiates contracts with new and existing educational vendors, acquires legal permissions for use of on-line content and assures use of such instructional resources are in the best interest of FLVS. The position is responsible for providing quality customer service to FLVS, franchises and external clients to include but not limited to resolution of technical problems and handles escalated issues. This position assists with the coordination of duties for the Development Support Representatives, Support Assistant, and Interns assigned to this department. This position is also responsible for performing other related work as directed by the Director of Curriculum Services.

## Primary Accountabilities/Deliverables:

- Negotiates course materials and resource contracts with new and existing vendors for FLVS, franchises, and Global Services.
- Responsible for ensuring compliance with vendor contracts.
- Acquires legal permissions from vendors for utilizing external content in FLVS courses.
- Analyzes course enrollment numbers to determine ordering quantity.
- Coordinates with Budget and Finance Department to ensure vendor payment and invoicing.
- Assists with grant projects that involve development initiatives.
- Collaborates with Project Managers, Curriculum Specialists, Application Development Specialists, Global Services, and Information Systems with the planning, implementing and evaluating of course materials and resources.
- Collaborates with Project Managers, Curriculum Specialists, Application Development Specialists Global Services, and Information Systems to reduce course materials cost per enrollment.
- Secures licenses and audits client use of licensed material.
- Issues and manages electronic access to on-line course resources.
- Coordinates technical integration of resources with FLVS content and systems by working with vendors and information systems team. Responsible for coordinating FLVS testing of integrations.
- Coordinates the efforts of the Development Support Representative, Support Assistant, and Interns in terms of their duties and responsibilities in the achievement of school goals and priorities.
- Meets professional obligations through efficient work habits such as: meeting deadlines, honoring schedules, coordinating resources and meetings in an effective and timely manner, and demonstrating respect for others.
- Performs other duties and responsibilities as assigned by his/her supervisor.
**Education, Certifications, and Work Related Experience:**
- Bachelor’s degree with a minimum of two years experience in the information or Educational Technology field required or an equivalent combination of education and experience
- Holds or is eligible for a Florida teaching certificate.
- Experience with educational resource procurement preferred.

**Knowledge Base Requirements:**
- Possesses strong knowledge of computer operation and office software.
- Strong operational and trouble shooting skills for software resources.
- Strong negotiating skills and ability to determine financial implications for purchases.
- Possesses educational curriculum knowledge.

**Technical Competencies and Skills:**
- Exhibits strong customer and client relationship skills.
- Evaluates, audits, deduces, and/or assesses data and/or information using established criteria.
- Requires the ability to review, classify, prioritize, and analyze problematic situations.
- Exercises good judgment and discretion in determining solution plans for technology related problems.
- Possesses excellent organizational skills.
- Requires strong communication skills.
- Strong ability to work with cross-functional teams.

**Working Conditions:**
- Location: Orlando office or remote if within commutable distance to Orlando as determined by the supervisor.
- Physical Ability: Tasks involve the ability to exert moderately physically demanding work effort, typically involving some lifting, carrying, pushing and/or pulling of objects and materials of light weight (5-10 pounds). Tasks may involve extended periods of time at a keyboard or workstation.
- Sensory Requirements: Some tasks require visual perception and discrimination. Some tasks require oral communications ability.
- Environmental Factors: Tasks are regularly performed without adverse environmental conditions, such as dirt, dust, pollen, odors, wetness, humidity, rain, fumes, temperature and noise extremes, machinery, vibrations, electric currents, traffic hazards, animals/wildlife, toxic/poisonous agents, violence, disease, or pathogenic substances.
- Florida Virtual School is an Equal Opportunity Employer. ADA requires Florida Virtual School to provide reasonable accommodations to qualified individuals with disabilities. Prospective and current employees are invited to discuss accommodations.

APPENDIX M

FLVS CITA Documentation

3.2 Educational materials

3.2.1 The school shall adopt a policy statement concerning the selection of educational materials.

Educational material selection for FLVS courses is based on the need for students to demonstrate proficiency in Sunshine State Standards and practice Florida’s Goal 3 Standards.

Educational material is developed by subject matter experts or licensed or purchased from reputable vendors, sanctioned by educational experts.

Educational material which is developed for FLVS by subject matter experts is required to follow the Course Development Guidelines, a detailed procedure which is published in the FLVS Development Handbook.

Educational material developed, licensed or purchased from vendors is evaluated according to the FLVS Resource Evaluation rubric which is published in the FLVS Development Handbook. The rubric contains 10 main criteria:
- Instructional Content
- Engagement and/or Interactivity
- Age/Grade Appropriateness
- Flexibility
- Assessment
- Teacher and Learner Support Materials
- Adaptability and Accessibility
- Technical Aspects
- Client Needs
- Cost

The Resource Evaluation Rubric is completed by a committee made up of curriculum specialists, subject matter experts and instructional designers.

3.2.2 The instructional materials shall be selected to support the specific objectives of the individual course, as well as the overall mission and goals of the school.

The criteria for selection and inclusion of instructional materials in FLVS courses are based on Sunshine State Standards, Florida’s Goal 3 Standards, relevancy, multiple modalities, and budget allocations for materials. These criteria are included in the Course Development Guidelines and Resource Evaluation Rubric.
The criteria for instructional material selection reflects the school’s philosophy that instruction should be relevant and should accommodate students’ varied learning styles and types of intelligence to assist and encourage their identification of the paths and pace by which they learn best.

3.2.3 The materials provided to the student shall be adequate to meet the course objectives.

The Course Development Guidelines require a scope and sequence be developed in the initial stages of course development for each course in the curriculum. The scope and sequence must be developed and reviewed internally before instructional material is developed, licensed or purchased.

The scope and sequence section of the Course Review Instrument (published in the Development Handbook) is used to evaluate the instructional material for adequate coverage of the course objectives. Completed reviews must show evidence that the criteria of state standards, curriculum requirements, learning objectives, instructional philosophy and the state required hours per course are met.

A minimum of four internal reviews of the instructional material occurs using the FLVS Course Review Instrument during the development process.

In addition to the FLVS Course Review Instrument, each module is reviewed by curriculum specialists, subject matter experts, course collaborators, and/or instructional designers. The Curriculum Progress Report and Development Progress Report (published in the Development Handbook) are completed during the internal reviews of the modules.

During the final stage of development, external reviews are completed by content/standards specialists (secondary and post-secondary content experts), industry experts and/or instructional design specialists. The external reviewers use the FLVS Course Review Instrument.

After a course has been released, it is reviewed internally every three years to ensure that curriculum and instruction permit students to demonstrate proficiency in the Sunshine State Standards.

3.2.4 The reading level of the materials shall be appropriate to the reading level competence of the students.

The following readability guidelines are in place for each course:
- Readability scale to be used is the Flesch-Kincaid
- Applied to a variety of texts throughout a module
- Target readability is 2 grade levels above or below the traditional target grade level of the course. (Example: English I – target 9th grade. Readability target
would be a range between 7th and 11th grades.) However, the closer to target, the more acceptable.

Use of the Flesch-Kincaid readability tool, which is a tool associated with general text (such as newspapers and mainstream publications), is easily accomplished by putting a passage into a word processing document and processing it for spelling and grammar.

The readability score gives us general information about the reading difficulty or ease of a passage. The score is a quantitative assessment of surface characteristics such as the number of words and syllables, the number of sentences, and the general length of the passage. However, the tool does not take into account the qualitative factors that may influence the ease of reading such as vocabulary, density of concepts, organization and presentation of content, and so on.

With these things in mind we encourage the use of the readability tool to guide the overall level of writing within a course. Then based on that measure, the target student grade level, and concept presentation, external and internal evaluators, including but not limited to curriculum specialists, adjust the writing accordingly to meet the needs of the student reader.

3.2.5 The materials shall be up-to-date.

A major principle in the FLVS philosophy is that instruction should accommodate students' varied learning styles and types of intelligence to assist and encourage their identification of the paths and pace by which they learn best. By monitoring student feedback in a variety of ways and implementing changes based on this feedback, we are making changes to the course material that are consistent with the philosophy of the school.

Student feedback on the module evaluations and on the mid-term survey (anonymous), district contact and lab facilitators' observations impacts the decision for course revisions.

Courses are constantly updated to reflect new technology, changes in world events, new benchmarks and standards and changes in teaching resources.

New technology, which the instructional design team continually researches and implements, is a constant in our environment. Keeping courses updated and dynamic with the best possible technology, educational software and learning environment is consistent with FLVS philosophy.

Since the curriculum is dynamic, not static, revisions are made on a continual basis. Additionally, every course in its entirety is automatically run through a three year redevelopment schedule. The lead instructor for a course collaborates with his/her
course team members and the Curriculum Services team when revisions are made to the course.

3.2.6 **Appropriate study guides and supplementary materials shall be provided.**

Each course provides ancillary materials that serve as study guides or review resources. In some courses, subject matter experts have found outside resources (CD-ROM or a web-based resource) that are useful as study guides. Also, each course provides an assignment chart at the beginning of each module for students (and parents/guardians).

3.3 **Educational services**

3.3.1 **Adequate provisions shall be made for the prompt delivery and return of instructional materials, lessons, and examinations to and from the students.**

FLVS uses both asynchronous and synchronous delivery of content and instruction. All course content is posted in the virtual classroom with 24 hour access to students. Teachers schedule synchronous individual or group chats and whiteboard sessions as they see fit and students attend on a voluntary basis. FLVS also reimburses Florida school districts for the cost of an Advanced Placement® Exam so that all students are provided with the opportunity to sit for the Exam.

Resources such as software, books, videotapes and lab materials which are associated with some Florida Virtual School courses are mailed to students. Most courses do not have physical resources. If physical resources are required, a Packing Slip which indicates the materials as well as the price of the materials is included in the package. It is the responsibility of the student to return the materials upon completion of the course.

3.3.2 **Lessons and examinations shall be graded promptly, and the results communicated to the students (parents/guardians if the student is under the age of 16).**

A major component of proper communication is returning student work in a timely manner. It is the Florida Virtual School’s policy that all communication is returned within 24 hours. Responding within 24 hours does not have to include the grading of all work submitted the previous day, only the acknowledgment of receipt of assignments or questions. It is the responsibility of the instructor to inform students about the expected turnaround time on grading work that has been submitted. All work should be graded in a timely manner and with a period of time that does not prevent the student from progressing through the course.

Information needed to effectively manage our students and monitor their performance is found in VSA and Educator.
APPENDIX N

FLVS CITA Accreditation Report

3.1.3 If a partial program is offered, it supplements the student's primary academic program or is comparable and equivalent to that offered by a traditional program. FLVS is a recognized e-learning model. It serves middle and high school students with more than 90 courses. It funding is tied directly into student performance. The rating is effective.

3.1.4 The curriculum, instruction and assessment are subject to review and revision at regular intervals. Revisions are made on a continual basis using student feedback, district contacts, and lab facilitator's observations. Courses are constantly updated to reflect new technology, changes in world events, new benchmarks and standards. Also every course is automatically run through a three year redevelopment schedule. The rating is effective.

3.1.5 Measurable learning and instructional outcomes are established for each course and are achievable through distance education. A scope and sequence is developed in the initial stages. This is reviewed internally before the modules are developed. The final scope and sequence is published in the syllabus in the course demonstrations area of the school website. Additional mapping documentation showing the correlation between assessment questions per course and the Sunshine State Standards also exist. The rating is effective.

3.1.6 Provision is made to address student individual differences. Students receive a phone call from the instructors at the start of course to ascertain if the student is ready for the course. The student has up to 25 days to drop the course without penalty. Teachers follow the progress of individual students and may grant extensions for time to complete the course. The rating is effective.

3.1.7 A management system ensures the authenticity of student work and the validity of assessments and grades. All student assessment records are kept in the FLVS course management system. Primarily, student work is recorded within the course management system. Alternative forms of student work are documented in the student management system. Assessment grade and comments are recorded in Educator. The program records are based in Tampa with a backup in Chicago. The rating is exemplary.

3.1.8 Credit for course is awarded on the student's achieving the outcomes and objectives that have been established for that course. FLVS believes assessment should measure student knowledge, guide student development, and allow meaningful evaluation of the processes. One way is oral components which must be completed as the student progresses through the course. A final exam is required of all courses. There are several types of final exams available. The rating is effective.

3.2 Educational Materials

3.2.1 The school adopts and implements a policy concerning the selection of educational materials, which is based on sound educational research and practice. Educational material is developed by subject matter experts or licensed or purchased from reputable vendors, sanctioned by educational experts. Educational materials developed by FLVS are required to follow the Course Development Guidelines. Purchased materials are evaluated according to a 10 point Research Evaluation Rubric. The rating is effective.
3.2.2 The instructional materials selected to support the specific objectives of the individual course, as well as the overall mission and goals of the school. All material used is based upon the Sunshine State Standards, Florida Goal 3 Standards, relevancy, multiple modalities, and budget allocations for materials. Selected material reflects the school's philosophy of accommodating to students' varied learning styles and types of intelligence. The rating is effective.

3.2.3 The materials provided to the student are current and match the course objectives. The reading level of the materials is appropriate to the reading level competence of the students. Each course is reviewed internally every three years to ensure that the curriculum and instruction permit students to demonstrate proficiency in the Sunshine State Standards. The Flesch-Kincaid readability scale is applied to each course. Target readability is 2 grade levels above or below the traditional target grade level of the course. The rating is effective.

3.2.4 Appropriate study guides and supplementary materials are provided and based on course objectives. Each course provides ancillary materials that serve as study guides or review resources. In some cases, outside resources (CD-ROM or a web-based resource) may be used. An assignment chart is provided for each course. The rating is effective.

3.2.5 Employs effective and systematic procedures for ensuring student and staff equitable access to current media, books, reference sources, and periodicals in print and electronic formats that support student learning, the curriculum, and the instructional program.

3.3 Educational Services

3.3.1 Adequate provision is made for prompt delivery and return of instructional materials, lessons and examinations to and from the students. FLVS uses both asynchronous and synchronous delivery of content and instruction. All course content is posted in the virtual classroom with 24 hour access to students. Teachers schedule synchronous individual and group chats and whiteboard sessions. Resources such as software, books, videotapes and lab material are mailed to the students. It is the responsibility of the student to return the materials upon completion of the course. The rating is exemplary.

3.3.2 Lessons and examinations are graded promptly and the results communicated to the students. All communication is returned within 24 hours. This may not include the grading of work, only the acknowledgement of receipt of assignments or questions. All work should be graded in a timely manner and with a time of period that does not prevent the student from progressing through the course. Grades and progress is available through the Student Management System. Monthly progress reports are sent to the child or parents. Instructors also make monthly phone calls. The rating is effective.

3.3.3 Student, parent or guardian inquiries are promptly and satisfactorily answered. Communications include a welcome phone call, a monthly phone call and a communication phone call within 24 hours of any contact from the student. All FLVS teachers are available via phone from the hours of 8:00 AM until 8:00 PM.
APPENDIX O

FLVS Staff and Student Demographics

Table 59 - Respondents by Age

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<tr>
<th>Age Range</th>
<th>Administrators</th>
<th>Instructional Designers &amp; Course Developers</th>
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</thead>
<tbody>
<tr>
<td>20-30</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>27 (18.4%)</td>
</tr>
<tr>
<td>31-40</td>
<td>5 (41.7%)</td>
<td>5 (45.5%)</td>
<td>75 (51.0%)</td>
</tr>
<tr>
<td>41-50</td>
<td>3 (25.0%)</td>
<td>3 (27.3%)</td>
<td>26 (17.7%)</td>
</tr>
<tr>
<td>51-60</td>
<td>4 (33.3%)</td>
<td>3 (27.3%)</td>
<td>19 (12.9%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=12</td>
<td>N=11</td>
<td>N=147</td>
</tr>
</tbody>
</table>

Table 60 - Respondents by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Administrators</th>
<th>Instructional Designers &amp; Course Developers</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>4 (33.3%)</td>
<td>2 (18.2%)</td>
<td>20 (13.7%)</td>
</tr>
<tr>
<td>Female</td>
<td>8 (66.7%)</td>
<td>9 (81.8%)</td>
<td>126 (86.3%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=12</td>
<td>N=11</td>
<td>N=146</td>
</tr>
</tbody>
</table>

Note: One teacher skipped this question.

Table 61 - Respondents by Level of Education

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Administrators</th>
<th>Instructional Designers &amp; Course Developers</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA or BS</td>
<td>6 (50.0%)</td>
<td>5 (45.5%)</td>
<td>66 (45.5%)</td>
</tr>
<tr>
<td>MA or MS</td>
<td>5 (41.7%)</td>
<td>5 (45.5%)</td>
<td>67 (46.2%)</td>
</tr>
<tr>
<td>Specialist or Advanced Masters</td>
<td>1 (08.3%)</td>
<td>1 (09.1%)</td>
<td>7 (04.8%)</td>
</tr>
<tr>
<td>Doctorate</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>5 (03.5%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=12</td>
<td>N=11</td>
<td>N=145</td>
</tr>
</tbody>
</table>

Note: Two teachers skipped this question.
Table 62 - Respondents by Experience as a Certified Teacher

<table>
<thead>
<tr>
<th>Experience as a Certified Teacher</th>
<th>Instructional Designers &amp; Course Developers</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Year</td>
<td>2 (18.2%)</td>
<td>0 (00.0%)</td>
</tr>
<tr>
<td>1-5 Years</td>
<td>0 (00.0%)</td>
<td>20 (13.8%)</td>
</tr>
<tr>
<td>6-10 Years</td>
<td>2 (18.2%)</td>
<td>51 (35.2%)</td>
</tr>
<tr>
<td>11-15 Years</td>
<td>4 (36.4%)</td>
<td>47 (32.4%)</td>
</tr>
<tr>
<td>16-20+ Years</td>
<td>3 (27.3%)</td>
<td>27 (18.6%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=11</td>
<td>N=145</td>
</tr>
</tbody>
</table>

Note: Two teachers skipped this question.

Table 63 - Respondents by Years of Experience Prior to Working at the Florida Virtual School

<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Administrators</th>
<th>Instructional Designers &amp; Course Developers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Year</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
</tr>
<tr>
<td>1-5 Years</td>
<td>5 (41.7%)</td>
<td>7 (63.6%)</td>
</tr>
<tr>
<td>6-10 Years</td>
<td>4 (33.3%)</td>
<td>4 (36.4%)</td>
</tr>
<tr>
<td>11-15 Years</td>
<td>2 (16.7%)</td>
<td>0 (00.0%)</td>
</tr>
<tr>
<td>16-20+ Years</td>
<td>1 (08.3%)</td>
<td>0 (00.0%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=12</td>
<td>N=11</td>
</tr>
</tbody>
</table>

Table 64 - Respondents by Years of Employment at the Florida Virtual School

<table>
<thead>
<tr>
<th>Years of Employment at the FLVS</th>
<th>Administrators</th>
<th>Instructional Designers &amp; Course Developers</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 Year</td>
<td>1 (08.3%)</td>
<td>0 (00.0%)</td>
<td>50 (34.5%)</td>
</tr>
<tr>
<td>1 Year</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>23 (16.6%)</td>
</tr>
<tr>
<td>2 Years</td>
<td>1 (08.3%)</td>
<td>3 (27.3%)</td>
<td>16 (11.0%)</td>
</tr>
<tr>
<td>3-5 Years</td>
<td>5 (41.7%)</td>
<td>6 (54.5%)</td>
<td>42 (29.0%)</td>
</tr>
<tr>
<td>6+ Years</td>
<td>5 (41.7%)</td>
<td>2 (18.2%)</td>
<td>12 (09.0%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=12</td>
<td>N=11</td>
<td>N=145</td>
</tr>
</tbody>
</table>

Note: Two teachers skipped this question.
Table 65 - Respondents by Number of Courses Designed at the Florida Virtual School

<table>
<thead>
<tr>
<th>Number of Courses Designed as an ID/CD at the FLVS</th>
<th>Instructional Designers &amp; Course Developers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of One Course</td>
<td>0 (00.0%)</td>
</tr>
<tr>
<td>1-2 Courses</td>
<td>1 (09.1%)</td>
</tr>
<tr>
<td>3-4 Courses</td>
<td>3 (27.3%)</td>
</tr>
<tr>
<td>5-6 Courses</td>
<td>1 (09.1%)</td>
</tr>
<tr>
<td>7+ Courses</td>
<td>6 (54.5%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=11</td>
</tr>
</tbody>
</table>

Table 66 - Florida Virtual School Teachers by Subject Area Taught at the Florida Virtual School

<table>
<thead>
<tr>
<th>FLVS Subject Area</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>0 (00.0%)</td>
</tr>
<tr>
<td>Business Computer Technology</td>
<td>9 (06.3%)</td>
</tr>
<tr>
<td>Computer Technology</td>
<td>0 (00.0%)</td>
</tr>
<tr>
<td>English</td>
<td>24 (16.7%)</td>
</tr>
<tr>
<td>Family &amp; Consumer Science</td>
<td>14 (09.7%)</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>15 (10.4%)</td>
</tr>
<tr>
<td>Math</td>
<td>19 (13.2%)</td>
</tr>
<tr>
<td>Physical Education</td>
<td>15 (10.4%)</td>
</tr>
<tr>
<td>Research &amp; Critical Thinking</td>
<td>5 (03.5%)</td>
</tr>
<tr>
<td>Science</td>
<td>14 (09.7%)</td>
</tr>
<tr>
<td>Social Studies</td>
<td>29 (20.1%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=144</td>
</tr>
</tbody>
</table>

Note: Three teachers skipped this question.

Table 67 - Respondents by Prior Employment at a ‘Brick-and-Mortar’ School

<table>
<thead>
<tr>
<th>Employment at a ‘Brick-and-Mortar’ School</th>
<th>Administrators</th>
<th>Instructional Designers &amp; Course Developers</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4 (33.3%)</td>
<td>9 (81.8%)</td>
<td>141 (97.9%)</td>
</tr>
<tr>
<td>No</td>
<td>8 (66.7%)</td>
<td>2 (18.2%)</td>
<td>3 (02.1%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=12</td>
<td>N=11</td>
<td>N=144</td>
</tr>
</tbody>
</table>

Note: Three teachers skipped this question.
Table 68 - Employment of a School Library Media Specialist at a ‘Brick-and-Mortar’ School

<table>
<thead>
<tr>
<th>Employment of a School Library Media Specialist at a ‘Brick-and-Mortar’ School</th>
<th>Administrators</th>
<th>Instructional Designers &amp; Course Developers</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4 (100%)</td>
<td>9 (100%)</td>
<td>134 (95.0%)</td>
</tr>
<tr>
<td>No</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>6 (04.3%)</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>0 (00.0%)</td>
<td>0 (00.0%)</td>
<td>1 (00.7%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=4</td>
<td>N=9</td>
<td>N=141</td>
</tr>
</tbody>
</table>

Note: Three teachers skipped this question.

Table 69 - Respondents by Level of Collaboration With The ‘Brick-and-Mortar’ School Library Media Specialist

<table>
<thead>
<tr>
<th>Level of Collaboration With School Library Media Specialist</th>
<th>Instructional Designers &amp; Course Developers</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>4+ Times A Year</td>
<td>1 (11.1%)</td>
<td>29 (21.6%)</td>
</tr>
<tr>
<td>3 Times A Year</td>
<td>0 (00.0%)</td>
<td>28 (20.9%)</td>
</tr>
<tr>
<td>2 Times A Year</td>
<td>3 (33.3%)</td>
<td>28 (19.7%)</td>
</tr>
<tr>
<td>1 Time A Year</td>
<td>3 (33.3%)</td>
<td>27 (20.2%)</td>
</tr>
<tr>
<td>Never</td>
<td>2 (22.2%)</td>
<td>22 (16.4%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=9</td>
<td>N=134</td>
</tr>
</tbody>
</table>

Table 70 - Florida Virtual School Students by Type of High School Attended

<table>
<thead>
<tr>
<th>Type of High School Attended</th>
<th>FLVS Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home School</td>
<td>8 (44.4%)</td>
</tr>
<tr>
<td>Public High School</td>
<td>8 (44.4%)</td>
</tr>
<tr>
<td>Private High School</td>
<td>2 (11.1%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=18</td>
</tr>
</tbody>
</table>
Table 71 - Florida Virtual School Students by Virtual Courses Taken Through The Florida Virtual School

<table>
<thead>
<tr>
<th>Majority of Courses Taken Through The FLVS</th>
<th>FLVS Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>14 (77.8%)</td>
</tr>
<tr>
<td>No</td>
<td>4 (22.2%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=18</td>
</tr>
</tbody>
</table>

Table 72 - Florida Virtual School Students by State of Florida Residency

<table>
<thead>
<tr>
<th>State of Florida Residency Status</th>
<th>FLVS Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently live in the State of Florida</td>
<td>17 (100%)</td>
</tr>
<tr>
<td>Currently live outside the State of Florida</td>
<td>0 (00.0%)</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>N=17</td>
</tr>
</tbody>
</table>

Note: One student skipped this question
REFERENCES


Learning for life: Information literacy and the autonomous learner (pp. 39-48). Adelaide: 
University of South Australia.


Eisenberg, M., & Berkowitz, B. (1988). Library and information skills curriculum scope and 


Eisenberg, M., & Wurster, S. L. (2002). Florida state language arts standards aligned with big6 

Medford, NJ: Information Today, Inc.

Florida Department of Education. (2003). Information literacy: Florida's library 
media/curriculum connections. Retrieved January 24, 2008, from 
http://www.fldoe.org/bii/Library_Media/ilflmcc.asp

http://www.fldoe.org/aala/cdpage2.asp


Florida TaxWatch Center for Educational Performance and Accountability. (2007). Final report: 
A comprehensive assessment of Florida Virtual School. Retrieved February 23, 2008, 

seeking at school. Lanham, MD: Scarecrow Press, Inc.


Orlando: Academic Press.

Heidlage, R. M. (2003). Online schooling for United States catholic high school students: 
Promise and practice as perceived by selected high school principals. Unpublished 
Doctoral dissertation, University of Kansas, Lawrence.


Valenza, J. K. (2007). It’d be really dumb not to use it: Virtual libraries and high school students’ information seeking and use—a focus group investigation. In M. K. Chelton & C. Cool (Eds.), *Youth information-seeking behavior II* (pp. 207-255). Lanham, MD: The Scarecrow Press, Inc.


BIOGRAPHICAL SKETCH

Christopher Thomas Hart received his A.A. degree from Tallahassee Community College in Tallahassee, Florida and then transferred to Ball State University in Muncie, Indiana where he received his B.S. in Instrumental K-12 Music Education. In 1992 following the completion of his bachelor’s degree, he enrolled in the School of Library and Information Studies at Florida State University in Tallahassee, Florida and received his M.L.S. in K-12 school media librarianship.

In 1993 he began his school library media career at Poinciana High School in Kissimmee, Florida. While at the high school he was responsible for managing the school library media center, collaborating with teachers, developing the library collection, providing reference services, and integrating information literacy into the curriculum. He was also responsible for establishing and maintaining a mixed platform school-wide network consisting of 2000 users, 8 computer labs and over 100 administrative and staff computers. While at the high school he also served as the Distance Learning Regional Coordinator for the compressed video distance-based master’s degree program in the School of Information Studies at Florida State University from 1997-1998.

In 1999 he took an educational leave of absence to pursue his doctorate in the College of Information at Florida State University. While at Florida State University he assisted in teaching classes in Database Management Systems with Dr. Yu and also Information Needs of Young Adults with Dr. Dresang. While pursuing his doctoral studies he served as an Information Technology Support Specialist in the Office for Technology Integration at Florida State University.

EDUCATION

<table>
<thead>
<tr>
<th>Degree</th>
<th>Institution</th>
<th>Field</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D.</td>
<td>Florida State University</td>
<td>College of Information</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minor: Educational Leadership</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(dissertation defense: March 24, 2008)</td>
<td></td>
</tr>
<tr>
<td>M.L.S.</td>
<td>Florida State University</td>
<td>School of Library and Information Studies</td>
<td>1993</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emphasis: School Library Media</td>
<td></td>
</tr>
</tbody>
</table>
B.S. Ball State University. School of Music. Major: Instrumental Music Education. 1992

A.A. Tallahassee Community College. Concentration: Basic Studies. 1989

EXPERIENCE


1997-1998 Distance Learning Regional Coordinator. College of Information, Florida State University.

PUBLICATIONS


AWARDS AND DISTINCTIONS

1999 Madge Hutcherson scholarship recipient.

1999 Florida Association for Media in Education (FAME) student scholarship recipient.

1993 President of the Florida State University School of Library Training and Service (SOLTAS) student organization.
PROFESSIONAL SERVICE

Florida Association for Media in Education (FAME) Executive Board. ■ Served as a state elected director on the executive board for the Florida school media association. (1996-1999).


Florida Association for Media in Education (FAME) Production and Publications Committee. ■ Served as FAME_Net listserv moderator and co-webmaster, while assisting with materials published by the Florida school media association. (1997-1999).