AN ABSTRACT OF THE DISSERTATION

FOR THE DEGREE DOCTOR OF PHILOSOPHY IN THE

SCHOOL OF LIBRARY AND INFORMATION MANAGEMENT

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presented on Nov. 3, 2012

Title: Everyday Life Information Seeking (ELIS) Practices of Suburban Teens in A Highly Technological School Library: A Case Study

Abstract approved: _____
(Chair)

This extended case study seeks to discover the everyday life information seeking (ELIS) practices of upper income suburban teens working in a highly technological Midwestern high school library. Such a study is significant and needed; pedagogical change is slow to advance even as information and technology communication (ICT) devices and tools, particularly mobile devices, are rapidly changing and pervasive in the lives of adolescents. Crafted within an interpretive paradigm and cast through the lens of constructivist metatheory, this dissertation examines suburban teens as they conduct

ELIS practices while working in a school library setting. Library and information science (LIS) and school library research strands are critically examined, and provide the researcher baseline knowledge for building substantive theory based on the works of Savolainen (1995, 2008) and Agosto and Hughes-Hassell (2006a, 2006b). Data collection methods include nonparticipant observation, two school librarian interviews, four student focus group sessions, five online student surveys, and both print and virtual document analysis. Data analysis was conducted using an inductive, iterative method leading to creation of a coding scheme, category development, and theme explication. Findings indicate that suburban teens prefer to use personal mobile devices in lieu of school library computers for managing personal information needs; demand instructional models to enable their successful completion of assignments; actively manage their educational growth and assessment; and tend to first rely on mobile digital devices as primary information resources, and then approach friends and adults for help with ELIS queries. School-mandated filtering and monitoring are viewed as constraints, by both students and school librarians, and impact teen decisions to use mobile devices, such as mobile phones, in lieu of school-provided computers. School librarian roles, along with AASL (2007, 2009) guiding documents, are analyzed in light of findings. Findings point to a newly discovered playful self that modifies Agosto and Hughes-Hassell's Theoretical Model of Urban Teen Development. Implications and recommendations are provided, with a focus on school librarian dispositions and delivery of best practices for working with 21st century students in a digital library context.

EVERYDAY LIFE INFORMATION SEEKING (ELIS) PRACTICES OF SUBURBAN TEENS IN A HIGHLY TECHNOLOGICAL HIGH SCHOOL LIBRARY: A CASE STUDY

by

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Emporia, Kansas

November 2012

A Dissertation

Presented to

EMPORIA STATE UNIVERSITY

In Partial Fulfillment

of the requirements for the Degree

Doctor of Philosophy

The School of Library and Information Management

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ACKNOWLEDGMENTS

I acknowledge the many people who have been instrumental in helping me complete this dissertation. My committee chair, Dr. Mirah Dow, has been a patient and caring teacher, aiding me at every step in the process, and providing criticism when necessary as she guided my academic growth. I am also filled with gratitude for the assistance I received from committee members Dr. Marcus Childress and Dr. Denise Agosto.

My SLIM professors have encouraged and inspired me to think in new ways about the many areas of interest I studied during the past five years. The university also provided me with opportunities for graduate level teaching, and these experiences impacted the way I conducted my own learning about human information behavior. I especially want to thank my cohort members, all of whom have given me various types of assistance along my academic journey. Through their own academic efforts and good cheer, they continually challenged me to do my best.

The participants for this project must also be thanked, for without them I would not have uncovered findings for this dissertation. They welcomed me into their daily school routines and provided me with opportunities to complete work for my study. The teaching staff at my school, including administrators, frequently asked me about my work and pushed me to keep trying.

I could not have completed this dissertation without the unflagging support of my husband, Edward, who is my touchstone in life. He and our children, Casey, William, and Matthew, continually encouraged me to continue working towards my goals. My parents Terence and Nadine, who are my true life "cheerleaders," also kept me on track through frequent phone calls and expressions of optimism. Lastly, I also acknowledge my aged,

faithful dog Rusty, who patiently sat beside me with unwavering devotion as I typed every word of this dissertation.

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CHAPTER 1

INTRODUCTION

Statement of the Problem

Times are changing, as evidenced by rapid transformations in the social and educational worlds inhabited by students today. Millions of Americans use the Internet on a daily basis. Libraries, including school libraries, are part of a complex and dynamic educational, recreational, and information infrastructure (Rubin, 2010). The digital world shifts and evolves alongside technological innovations that are pervasive in adolescent lives (Johnson, Levine, Smith, & Stone, 2010), and provide students with tools for meeting their Everyday Life Information Seeking (ELIS) practices, as identified by Savolainen (2008) and Agosto and Hughes-Hassell (2006a, 2006b). Technology impacts the ways students work, learn, socialize, collaborate, and play. In order to meet the needs of today's learners, educators must develop new pedagogy designed to prepare students and their teachers for interacting with a technologically modern, global society.

21st Century Students

In their study of the information seeking and usage behaviors of more than 25,000 college-age students, Head and Eisenberg (2009) shared description of the context in which 21st century students function: "This dramatic proliferation of available information coincides with young adults being asked to receive, access, evaluate and deliver more information than most have ever had to process in their lives" (p. 2). Pew Internet American Life Project survey results showed 95% of teenagers aged 12-17 use the Internet, and more than half of all teenagers in the United States with cell phones send text messages to their friends daily (Lenhart, Madden, Smith, Purcell, Zickuhr, & Rainie, 2011). Family income levels also show a relationship to Internet usage; of teens living

with families earning more than $75,000 per year, 99% have Internet access. As of 2011, 83% of suburban teens owned mobile phones, compared with 69% for urban teens (Lenhart, 2012), and 63% of all teens surveyed reported sending text messages daily.

Zickuhr (2011), found that adolescents are more likely to own and use several technological devices, and take advantage of full functionality of devices that include cell phones, desktop computers, laptop computers, netbooks, MP3 players, game consoles, e-book readers, and tablet computers (such as the iPad). Ito et al. (2010) labeled the pervasiveness of technologies in adolescent lives as a type of "media ecology;" an environment where students today are "participants in a shared culture where new social media, digital media distribution, and digital media production are commonplace among their peers and in their everyday school contexts" (p. 30). These findings impact how school librarians work with learners who own, use, and interact with a variety of information and communication technology (ICT) devices including mobile devices daily.

While the ELIS behaviors and actions of adolescents have been studied and discussed, the amount of such research is still in its infancy (Agosto & Hughes-Hassell, 2005). From Manson's (1999) questioning why students do not ask for help in school libraries to Agosto and Hughes-Hassell's (2005, 2006a, 2006b) urban teen study, there is a need to uncover more information about this age group and their daily interactions with information. Especially compelling are potential discoveries of what adolescents might teach us regarding their own information practices as reported in their own voices. In addressing future needs for research in school libraries, Todd (2003) called for a "sharper understanding of the needs of adolescents from the adolescent's perspective" (p. 42).

21st Century Schools

Twenty-first century schools function in a climate of change impacted by pedagogical practices, cuts in federal and state funding, and requirements to adhere to federal legislation for assessing learning. Development of the common core state standards (National Center for Education Statistics, 2012) and accompanying assessments impacts education stakeholders from administrators to teachers to students. Several state studies (Francis, Lance, & Lietzau, 2010; Lance, Rodney, & Hamilton-Pennell, 2000; Lance, Wellborn, & Hamilton-Pennell, 1993), have confirmed the beneficial impacts of school libraries and school librarians on student academic achievement. Dow and Lakin (2012) demonstrated schools with the presence of a certified library media specialist showed improvements in assessments *across* the curriculum.

21st Century School Library Documents

School libraries are on the forefront of this sweeping societal change. The American Association for School Librarians (AASL) *Standards for the 21st Century Learner* (AASL, 2007) document offers guidelines for school librarians supporting students as they develop skills to competently collaborate with peers in an increasingly global world .The *Standards* describe nine common beliefs: a) reading is a window to the world; b) inquiry provides a framework for learning; c) ethical behavior in the use of information must be taught; d) technology skills are crucial for future employment needs; e) equitable access is a key component for education; f) the definition of information literacy has become more complex as resources and technologies have changed; g) the continuing expansion of information demands that all individuals acquire the thinking skills that will enable them to learn on their own; h) learning has a social context; and i) school libraries are essential to the development of learning skills.

Digital competence is a concept that school librarians must embrace as they interact with youth. To fulfill the *Standards* (AASL, 2007), new research must focus on what is currently occurring in school libraries when students discover and interact with information in a digital age context. *Empowering Learners: Guidelines for School Library Media Programs* (AASL, 2009), which contains a set of guidelines created to accompany AASL's 2007 *Standards,* charges librarians with creating facilitative learning experiences designed to help students develop skills necessary for successfully acquiring and building knowledge in core subjects, learning and innovation skills, media, and technology skills, as well as life and career skills, set within a 21st century context.

The AASL (2007, 2009a) *Standards* and *Empowering Learners* documents are based upon a constructivist framework, and clearly outline how school librarians work with students in ways designed to help them find and interact with information resources, while also noting the changed context of previously physically-bound environments. "In a participatory culture where every individual has a voice to contribute, the [school library media specialist] SLMS, classroom teachers, and students now share the roles of teacher and learner…Technology is woven throughout this framework, influencing every aspect of teaching and learning" (AASL, 2009, p. 10). In a global world inhabited by students, increased use of social technology tools has helped to remove physical boundaries that may have previously limited learning opportunities. Set within the ability to use mobile devices and to communicate beyond classroom or library walls is a need for school librarians to instruct young adults how to effectively use tools, and to teach them methods for interacting with media in intelligent, productive, and safe ways.

Theoretical Underpinnings

AASL document collaborators selected a constructivist stance as the backbone for

their recommendations (AASL, 2009, p. 19). Constructivist theory, shaped from the fields of education and psychology, has informed library and information science (LIS) studies examining how students seek out and interact with information resources. Two main influences in these schools of thought include theorists Lev Vygotsky (1962, 1978) and John Dewey (1902, 1910, 1915, 1938, 1944). From within the library and information science (LIS) field, several theorists have created information use theories and models, including Reijo Savolainen (1995, 2008) and his evolving ELIS theory, and Agosto and Hughes-Hassell (2005, 2006a, 2006b) and their teen ELIS theoretical and empirical models.

Significance

Findings for this study have implications for students, school librarians, and LIS researchers.

Significance for students. Examining students in their everyday life context provides more information about what their information behavior actions involve. This dissertation study examines upper income students, working in a highly technological library setting at a large, Midwestern high school, and describes how students seek out and interact with information resources in ELIS situations. Savolainen's (1995) ELIS model offered a lens for examining students who straddle both physical and virtual worlds, without constraints of conducting research within a limited "event" such as a one-time research project. This dissertation builds upon Agosto and Hughes-Hassell's (2005, 2006a, 2006b) urban teen study, provides comparison between two different groups of informants, and uncovers data that aids practitioners who work with adolescent students. This study, unlike others completed in the past, focuses on ELIS practices of students in school libraries.

Significance for school librarians. Todd (2003) charged school librarians to "focus on understandings, and the desired cognitive, behavioral, and affective outcome, the new understandings, and sense that each adolescent wants to create through accessing information, and to understand how this outcome is bet met for each person, and to have available the appropriate information to achieve the desired effect" (p. 42). Alongside the discoveries of students' ELIS interactions are insights into how school librarians inhabit several differing roles designed to help provide facilitative learning experiences for students. An exciting aspect of the AASL (2009) *Empowering Learners* document is the thorough delineation of the multilayered and evolving roles of the school librarian, which are described in greater detail since they were originally conveyed in the 1988 and 1998 *Information Power: Building Partnerships for Learning* documents (AASL & AECT). Functioning as a *leader*, the school librarian leads the school in developing literacy and technology teaching and learning designed to infuse 21st century skills into all aspects of the school program. As an *instructional partner*, school librarians create and revisit policies, practices, and curricula that guide students as they learn. "In a 24-7 learning environment, communication with classroom teachers now takes place virtually, as well as face-to-face" (AASL, 2009, p. 17). This same theme reappears in the description of the school librarian as an *information specialist* who "introduces and models emerging technologies, as well as strategies for finding, assessing, and using information" (AASL, 2009, p. 17). In this role, the school librarian works to connect schools and school libraries with an expanding global learning community, is able to communicate with teachers and students at any time, and can provide patrons constant access to library services. The *teacher* role of the school librarian is at the core of student learning in schools; included within this role are information literacy instruction and advocacy for all

types of reading, including print, visual, and virtual materials. As a *program administrator*, the school librarian provides equitable access to all members of learning communities, and also manages physical and virtual spaces of the program. Dow (2010) shared what these roles look like in a professional setting as school librarians "teach guided inquiry methods using computer technology, and use advanced knowledge of human growth and development and of learning styles. The well-informed school librarian is cognizant of curriculum and instruction, and acts as a leader…" (p.79), and also possesses strong technology skills.

Other documents and research informs the roles of school librarians. The Speak Up National Research Project (Smith & Evans, 2010) detailed how school librarians model vital roles in school library digital environments. "The Speak Up data reveal that school librarians have the skills needed to help students realize their vision for untethered, socially based, digitally rich learning experiences" (p. 27). Study authors pose a question for school librarians: "What opportunities do you feel these aspects of 21st century learning provide to your practice as a school librarians or to the conception of your school library?" (p. 27). Their question speaks directly to AASL guidelines for school librarians exhibiting multi-layered roles in school libraries under auspices of the AASL (2009) *Empowering Learners* document. Informing Speak Up study findings are additional descriptions of school librarian roles uncovered by this dissertation study of student ELIS practices.

Practical implications for this study include applying findings to real-life settings with practitioners. This multi-layered study is necessary for supporting and building upon existing theory, explaining potential anomalies that inform information behavior models currently in vogue, and informing practice at a time when school library programs are

being cut from education budgets strained by an unstable economy. Todd (2003) stated, "It is clear that school librarians have an important role to play in the information exchange process. Research shows that when the context of adolescents' information needs is understood, together with some of the factors that shape their search processes and the desired outcomes they are hoping to achieve, information needs can be met in real and satisfying ways" (p. 42). Todd (2003) cautioned, also, that "A profession without reflective practitioners willing to learn about the advances of research in the field is disconnected from best practice and best thinking, and, by default, often resorts to advocacy and position as a bid for survival" (p. 43).

In 2010, AASL decided to formally adopt the title "school librarian" in lieu of other titles frequently used in the literature (such as school library media specialist, library media specialist, media specialist, and teacher librarian). The new title has been promoted in an effort to reduce confusion about librarian roles, and to create a common title to be used in school library settings (AASL, 2010).

Significance for LIS researchers. Epistemic interests (defined by Dervin, 1983, and detailed by Savolainen, 1993) for this study include increasing the knowledge and theory base for LIS regarding adolescent information practices. While past LIS research efforts split into differing schools of thought for studies involving school libraries and studies of information behavior, the two research streams coexist today. Carol C. Kuhlthau's (1988) students were studied within the context of a collaborative research assignment, a method which has been a common way to study young people as they interact with information resources (Eisenberg & Berkowitz, 1990; Gross, 1993, 1995, 2005; Irving, 1985; Pappas & Tepe, 1997; Schacter, Chung & Dorr, 1998; Shenton & Dixon, 2003; Stripling & Pitts, 1988). Other researchers focus on information behaviors

and how information resources might be designed to more accurately meet searching needs for assigned projects (Bilal, 2001; Kafai & Bates, 1997; and Neuman, 1997). Studies that focus on information behavior and practices of students in school library settings, expressly occurring outside of assigned projects, are few. Categorizing student information needs into three areas, Harmon and Bradburn (1988) found that the complexity of adolescent task development (drawn from Havighurst, 1972) causes difficulty for adolescents striving to meet information needs within the areas of research, recreation, and information. Walter (1994) found that children have physiological information needs such as safety and security as described in Maslow's (1954) Hierarchy of Needs, and stated that their basic human needs are not being met in public library settings.

This study follows the teachings of Morgan and Wildemuth (2009), who described middle range theory as operating along a continuum that ranges from very specific, special theories (applicable to a finite range of phenomena) to general theories (similar to those produced by Newton, Darwin, Marx, and others). They tie the concept of grounded theory (developed by Glaser and Strauss, 1967 and later modified by Corbin and Strauss, 2008) to the development of middle-range theories, meaning that as the data emerge, so do theoretical concepts. Morgan and Wildemuth (2009) also described theory creation as ranging from the development of typologies (as seen in Agosto's and Hughes-Hassell's 2006 urban teen study), to levels of modeling varying from showing relationships to actual validation of theoretical concepts. This study builds theory through examination of relationships between the theoretical model developed by Agosto and Hughes-Hassell (2006a) and findings in a different population.

The ICT context. Agosto and Hughes-Hassell's (2005, 2006a, 2006b) study of

urban teens and ELIS behaviors forms the basis for crafting this study. Agosto (2005, 2006a, 2006b, 2007, 2009), along with other researchers, examined young adults seeking information in public library settings. Her investigations provided insights into how young people use public libraries, and how they interact with information. Her most recent study (Agosto & Abbas, 2011) examined adolescents in a highly technological high school in order to learn more about how they use ICTs, including their thoughts and opinions regarding social networks.

ICTs defined. Definitions for ICTs vary according to disciplines using the label; for the purposes of this dissertation they are defined as "any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form" (as cited in Khatkar, 2011, p. 2). Harris (2011) took a holistic approach, defining ICTs as "social information spaces" that allow for reciprocal sharing and dissemination of information, and added "...we now think in terms of [ICTs] as a framework, or, even more broadly, social technology, which more concisely captures the notion of sharing as a defining characteristic" (p.16). Agosto and Abbas (2011) added another element to conceptualizations of ICTs with their delineation of social media (seen as unidirectional) and social networks (viewed as bidirectional). Because of growth and changes in technologies, a definition of ICTs must also now include active, multidirectional forms of communication technologies such as mobile devices, text messaging, personal computers, and e-mail services. Other media sources include traditional broadcast communication media such as radio, facsimile, and television, which are designed to deliver messages to audiences in one direction from a source to a destination, akin to the pathway described in Shannon and Weaver's 1949 communication model. Agosto (2005, 2006a, 2006b) and her LIS peers examined young adults who live and learn in worlds that are vastly

different than the paper-based context inhabited by the high school students studied by Kuhlthau (1988) nearly 25 years ago. Their works are compelling and call for attention; in order to provide best practices when working with young people it is crucial that researchers first gain understanding of not only their information practices and mobile device interactions, but also of the different contexts in which they exist.

For today's students, peers are a primary focus for social growth through acts of socializing and identity construction. Adults, however, still hold an important role in the lives of teenagers, who depend upon them to provide the very technological tools that allow developmental growth to occur without direct adult supervision. School librarians are charged with providing equitable access to such technologies so that all students are provided the same opportunities to become skilled users of information resources in all formats (AASL, 2009a). Ito et al. (2010) found that library policy and teacher mandates affect opportunities for young people to freely explore new forms of media in school libraries.

The Research Questions

The central question for this study is: What are the ELIS practices exhibited by upper income students working in a highly technological school library setting? Research subquestions help to answer the central research question, and include:

1. How do students in a highly technological school library environment use physical and virtual technologies and other information resources provided by the school library?
2. What are the students' most frequently expressed everyday life information needs topics?

3. What people sources do the students consult when seeking information for non-school purposes when seeking everyday life information in the school library?
4. How do student ELIS practices in this upper income setting compare to urban teen ELIS practices?
5. How do findings for this study affect implications for school librarians administering best practices for working with students?

ALISE Research Classification

The Association for Library and Information Science Education (ALISE) provides LIS researchers with a classification scheme that organizes studies and potential research in the field (ALISE, 2007). This study fits into the following classification codes: a) within the category of development/principles of LIS, this study encompasses information and society/culture; b) within the category of services to user populations, this study encompasses information needs/behaviors of specific groups; and c) within the category of school libraries, this study encompasses the role of the library media specialist and instructional design (ALISE, 2007).

The ALISE classification codes move from overarching paradigms into the specificities of how research affects practitioners, and examines how services are provided to specific groups, and also how instructional design and role models are developed, set within a larger agenda of studying an information society or culture (young adults).

Conclusion

This chapter introduces the problem studied by the researcher, and describes the

contexts in which it exists. This qualitative case study provides a unique group and context. The school library setting for this study is one that was chosen because it was constructed with digital and virtual learning needs in mind, and provides a unique type of laboratory where student learners functioning in a digital age context are examined and analyzed. Key to understanding adolescent learners in the evolving digital world that surrounds them is studying how they go about their ELIS practices and interactions within school library settings. Chapter 2 provides a literature review detailing findings that impact and inform this dissertation. Methodology for this study is covered in Chapter 3, and findings and analysis are reported and discussed in Chapter 4. Conclusions and recommendations are provided in Chapter 5.

CHAPTER 2

LITERATURE REVIEW

Literature Review Guided by Interpretive Paradigm

This study is located within Burrell and Morgan's (1979) context of the interpretivist paradigm. The interpretive paradigm, a lens through which the researcher sees the world, is "informed by a concern to understand the world as it is, to understand the fundamental nature of the social world at the level of subjective experience" (Burrell & Morgan, 1979, p. 28). This philosophical approach classifies the social world as a series of evolving social processes created by individuals and encompasses a belief system that is nominalist, anti-positivist, voluntarist, and ideographic. Within the interpretive domain is constructivism, with ties to theories borrowed from the fields of education and psychology. Constructivist metatheory, in which individuals actively construct an understanding of their world, is a growing body of knowledge in LIS research, and is based on Berger and Luckmann's (1967) social construction of reality theory. This chapter serves the purpose of identifying theorists and their publications that inform research questions, data collection, and analysis in this study. The literature selected draws together connections from constructivism, the fields of education and psychology, LIS research streams, and definitions of today's learners. Prior research studies are included and are explained relevant to the theory-building process involved in this study.

Human Information Behavior Defined

Information behavior has only been thoroughly studied as a field for approximately 40 years, and is defined as "the study of the interactions between people,

the various forms of data, information, knowledge, and wisdom that fall under the rubric of information, and the diverse contexts in which they interact" (Todd, 2003, p. 27). Case (2008) described information seeking behavior from a multidisciplinary perspective, drawing upon the disciplines of information studies, communication, psychology, and professional fields such medicine, business, and policy. Case provided a thorough listing of the various criticisms launched at research efforts in the LIS field, while also applauding the move towards greater depth, reliance upon theory, and multidisciplinary sharing occurring in current research projects. He detailed eight "lessons" for information behavior research. Of relevance to this study are two of his stated notions: a) context is central to the transfer of information; and b) information seeking is a dynamic process. This study aligns with the idea that experiences, both personal and secondhand, affect understandings of the world. Information seeking is also affected by change, which is a constant in the world today.

Included within various concepts of information behavior are actors involved in an array of variables; information seeking and processing behaviors, various contexts, known and unknown needs, and patterns of access, retrieval, and dissemination. Shenton (2007) offered a similar, contextualized explanation: "Information behavior is complex. It takes place in a multiplicity of environments as individuals employ varying strategies with a diversity of materials, resources, and organizations to meet a range of needs associated with the various roles, issues, demands, and personal interests arising in their lives" (Shenton, 2007, p. 1). In his description of the multi-layered nature of information, Buckland (1991) discussed the notion of information-as-process, and called upon the fields of cognitive psychology, rhetoric, and interpersonal communication studies to help

researchers discover not only how information is obtained and used, but also how the information use process brings about changes in beliefs.

Case (2008) differentiated between information, information needs, information seeking, and information behavior. He described actions that "encompasses information seeking as well as the totality of other unintentional or passive behaviors (such as glimpsing or encountering information), as well as purposive behaviors that do not involve seeking, such as actively avoiding information" (Case, 2008, p. 5). Case's descriptions align with concepts developed by Savolainen (1995, 2008) such as passive monitoring of information, where a person is not experiencing problems or dissonance, and active seeking of information, where problem solving must occur in order to restore order in the person's life. Savolainen (1995, 2008) also introduced the complementary ideas of seeking orienting information (which is type of passive monitoring) and seeking practical information (which is aimed at problem solving).

Beginning School Library Research

Discussion of the growth of school library research is important, because this study focuses on information behavior of adolescents in a school library setting. Early writings concerning school libraries dealt with a facilities-based agenda rather than a research-driven focus. Elementary school library standards were published by the American Library Association (ALA) in 1925 (AASL & AECT, 1998), but concerns focused on budget allocations, collection building, and space distribution. As an example of discourse occurring from the turn of the century to the 1960s, see Wofford (1940) and Willson (1967).

The shift towards conducting research investigating school libraries is outlined in the Library Trends research agenda themed issues published in 2003 and 2009. Neuman's

(2003) critical call for studying student learning is echoed by Mardis (2009), who suggested that change must occur "to begin to shift staid conceptions of school librarianship within the LIS academy to the idea of dynamic educational informatics in schools: this shift in perception can have tremendous impact on preparation curriculum, professional practice, and research trajectories in all areas of library and information science" (Mardis, 2009, p. 1). As initial scholarly school library research unfolded, information use models were also beginning to be developed and shared with the LIS research community.

Development and Evolution of Information Use Models

Early LIS research in general tended to focus on facilities, and ways to design library systems so users might access information resources in the best possible ways to fit the parameters of those systems. Dervin and Nilan's (1986) seminal paper demanded improvements in the direction and methodologies of then-in-vogue LIS research, recommending changes not only in what might be discovered, but also in the ways methodologies might help uncover new perspectives, echoing Kuhn (1965) as they called for a "paradigm shift" for LIS research. A thorough review of the historically-charted growth and change in LIS research is written by Bates (1999).

Information use models influencing research in LIS provide differing ways to determine how humans go about seeking and interacting with information. While the focus for this proposal is an examination of ELIS practices of adolescent students, it is important to recall the body of past works that have influenced those who create LIS theory. LIS theorists who have developed information use models include Taylor (1968), Belkin (1980, 2005), Bates (1999, 2005), Ellis (1989), Gross (1993, 1995, 2005), Wilson (2000, 2006), and Dervin (1983, 1999), whose work is briefly described. Her Sense-

Making (Dervin, 1983, 1999) research and her discoveries of how people interpret perceived "gaps" in their information needs, and how they navigate solving and bridging those gaps, created a strong theory base upon which LIS researchers continue to uncover new findings. Dervin (1983, 1999) acknowledged the affective aspect that occurs when humans realize that something is missing from their personal information schemas. Even more importantly, research conducted by her and LIS peers has shifted the focus from systems framework studies to user-centered points of view.

Savolainen. Building upon Dervin's (1983, 1999) discoveries is Savolainen (1993, 1995, 2005, and 2008) and the development of his ELIS model, which is discussed in greater detail further along in this chapter. His model and findings about how people seek out and use information channels and sources in non-work situations has caused others (Agosto & Hughes-Hassell, 2005, 2006a, 2006b) to apply his thinking as a lens for examining how urban adolescents interpret and use public library resources. Savolainen (1993) wrote about Dervin's (1983) Sense-Making theory in depth, hailing its user-centered approach and multidisciplinary influences. As his own interests in ELIS behaviors began to grow, Savolainen (1993) acknowledged Dervin's (1983) work as a true turning point in the movement of LIS research into a user-centered framework, and also suggested that more research was necessary to gain "insights into the development of other user-centered conceptions trying to combine the elements of structure and action" (p. 27).

Horizon reports findings. The *Horizon Report* series, published from 2002 through 2012, shares outcomes from the New Media Consortium's Horizon Project, begun in 2002 and designed to identify key emerging trends and technologies occurring in education worldwide. Especially significant is the statement: "Students are different,

but educational practice and the material that supports it is changing only slowly" (Johnson, Levine, Smith, & Smythe, 2009, p. 7). The 2009 *Horizon Report* authors recommended that schools adapt to the different learning styles of students, and "… identify new learning models that are engaging to younger generations" (Johnson, et al., 2009, p. 7).

The 2010 *Horizon Report* (Smith, Levine, & Haywood) suggested that "The 'spaces' where students learn are becoming more community-driven, interdisciplinary, and supported by technologies that encourage virtual communication and collaboration" (p. 6). Acknowledging the need for envisioning learning as taking place beyond classroom walls is not a problem; the challenge is that "these experiences are often undervalued or unacknowledged" (Smith et al., 2010, p. 8). Study authors warned about potential disconnects between students who seek learning experiences in virtual worlds, and teachers and administrators who do not value those desires.

New names for student learners. Society has developed varying terminology to delineate who today's learners are, alternately describing them as: Digital Natives (coined by Prensky, 2001 and also used by Palfrey & Gasser, 2008), the Nintendo Generation (Green, Reid & Bigum, 2003), the Millennial Generation (Holliday & Li, 2004), Millennial Learners (Bush, 2008), the Net Generation (Oblinger & Oblinger, 2005 and Tapscott, 2008), and even the Facebook Generation (Shapira, 2008). The Pew Research Center (Zickuhr, 2011) delineated Millennials as those born between 1977 and 1993, making them students who are currently aged 18 to 34 in 2011.

Today's students are described by AASL in terms of technologies that inhabit their worlds, while noting that even though digital learners may appear to be tech-savvy on global levels, there is still a significant divide between those who have constant

access, and others who do not (AASL, 2009). Another divide is present when students believe they are proficient using technologies, even as results from studies show that they may be overrating their own skills (Schacter, Chung, & Dorr, 1998). For a review of research investigating students' self-rated technology use and actual performance, see Farris-Berg (2005).

Speak Up findings. The Speak Up National Research Project (2003-2012) is an initiative of Project Tomorrow (an education-oriented, nonprofit organization), publishing cutting-edge research informing what we know about 21st century student learners. Findings included the uncovering of a new type of digital disconnect, one that is deeper than previously described divisions of access and proficiency. "Students continue to tell us that the failure to use emerging technology tools in schools in, in fact, holding back their education, and in many ways, disengaging them from learning" (Smith & Evans, 2010, p. 1).

Students in the 2010 *Speak Up* study (Smith & Evans, 2010) shared a vision of what 21st century learning should look like: social based learning (students want to use technology tools for collaboration and communication), untethered learning (students want learning experiences to occur beyond physical classroom walls, and also further than the knowledge that might be provided by one teacher), and digitally rich learning opportunities (students want relevance combined with the use of technology tools). Study authors listed technology tools as devices such as smart phones, cell phones, laptops, tablet PCs, netbooks, desktop computers, and iPods or other MP3 devices.

What researchers are discovering about today's adolescent learners and their interactions with digital technologies is fascinating. Beliefs about adolescent technology

skill expertise levels exist alongside other perceptions of adolescent learners that are not so positive.

Adolescents as problems. In their interviews with urban adolescents, Agosto and Hughes-Hassell (2005) asked important questions that impact practice and staff development for librarians who work with this age group: "The participants identified electronic media such as telephones, television, computers, and radios as their preferred media. How can libraries use these media to deliver services to urban teenagers? Is there a way to use text-messaging to reach teenagers? What can librarians do to counteract the negative attitude urban teenagers have toward librarians? How can librarians integrate themselves into the interpersonal networks of urban teenagers?" (Agosto & Hughes-Hassell, 2005, p. 162).

Chelton's findings. Chelton (1997, 1999, 2001) drew upon Goffman's (1963) studies into stigma to describe adolescent library users as a "marginalized" population who are victims of stereotyping and socially constructed beliefs. Her functional discourse analysis (1997), wherein she studied a single interaction between a middle school library clerk and a middle school student, revealed that unpleasant interrogations regarding overdue materials created situations where adolescent patrons did not feel welcome. Chelton (1999) cautioned "Library practitioners would do well to note that users remember more how they are treated in a service encounter than what they get from it" (p. 109). Chelton added, "Comments from the interview data show that adolescents already feel demeaned in many of their service encounters with adults, and many adults assume that adolescents are already or are going to be problematic" (p. 109).

Adolescents constitute a special population. Findings about adolescents and problem behaviors in public libraries are still being published (Casey & Stephens, 2008;

Gallaway, 2005; Harden & Huggins, 2004; Hommel, 2007; Ishizuka, 2004; Jones, 2005). As Shenton (2007) noted, "Few, no doubt would dispute the importance of either librarians learning more about the information needs of youngsters or the wisdom of seizing opportunities to provide effective user education" (p. 4). He suggested that part of the problem with using expert sources, such as librarians, might be that with increasing availability of online access, young people may visit physical libraries less often and thus interact with librarians infrequently. Harris (2011) indicated that "Despite professional guides and standards and our good intentions, libraries do not have a great track record when it comes to welcoming teenagers" (p. 3), and this problem grows when a lack of visits by adolescents provides librarians with less face-to-face contact where development of mutual needs and interests might occur. Defining this problem is helpful, but it still does not explain why adolescent students in the urban teen study (Agosto & Hughes-Hassell, 2005, 2006a, 2006b) did not initially seek out libraries or librarians as desirable people sources for helping with ELIS needs.

Kuhlthau's Influences on the Field

It is possible that Kuhlthau (1988) was one of the earliest researchers to sensitively examine an adolescent population, and to report actions and emotions students experience instead of focusing on undesirable behaviors. Cell phones and other mobile digital devices were not available when Kuhlthau (1988, 1993, 1995) conducted her beginning studies and developed her information search process (ISP) model; today, however, the ISP model is still in use within digital contexts. When the high school students she studied completed an assignment, they did so in a different information context than do today's high school students who work with a wide array of existing and

emergent technologies. Kuhlthau's ISP model (1998, 1993, 1995) focused on student users progressing through a set of stages within the confines of an assignment.

ISP model studies. Kuhlthau's (1998, 1993, 1995) ISP model has been empirically tested, and replicated by others, including Kuhlthau working with various researchers. Loerke (1994), working with younger students (junior high school age), reported that students with stronger background information for their chosen topics tend to have more confidence about their searching and researching activities. McNally and Kuhlthau (1994) used the ISP as an instructional guide for high school students working with the school librarian and a science teacher. Garland (1995) examined research task development in nearly 400 high school students, and verified Kuhlthau's (1988) descriptions of affective feelings reported by students during stages of a research project. Swain (1996) studied college freshmen in an attempt to verify Kuhlthau's (1988, 1993, 1995) ISP model with a different population. Burdick (1996) used the ISP model to delve more deeply into gender differences of high school students working on a research project. Kuhlthau, Heimstrom and Todd (2008) revisited the ISP model, finding that the model still held value after nearly twenty years of development.

Kuhlthau's impact. Kuhlthau's (1988, 1993, 1995, 2004, 2005a, 2005b, 2008) findings have generated enthusiastic responses in the LIS research community. That her original informants completed project assignments within a paper-based context suggested that in order to study information behavior today there are shifts in not only context, but also in participant expectations and abilities regarding available technologies and technological expertise. In 1988, her students used items such as books, card catalogs, indexes, and periodicals as potential sources of information. The only available media source for students at the school was television.

Shenton's perspective. Shenton (2007) cautioned that reliance on information behavior models set within a specific information-seeking context may not yield information necessary to understand users, which suggests that assignment-based research projects (while useful for a variety of reasons) will not tell the whole story of what is happening with young people using school libraries. He discussed the fact that young searchers tend to apply their own methods and shortcuts for finding information, adding, "it would seem simplistic for a researcher to try to create a single model that represented, even in generalized terms, all IB [information behavior] that is evident in the group under study" (p. 5). In support of his statements, Shenton (2007) also noted: "Information skills models that take a linear, rather than dynamic perspective often imply that sources are investigated once the need has been determined, but in real life, instances frequently emerge where a knowledge of sources triggers an information need" (p. 4). It is the daily real life ELIS experiences that this dissertation explores, rather than focusing on project-based information seeking events; findings for this study coexist with and contribute to the knowledge base of information seeking behavior.

Adolescent ELIS Studies

Adolescence may be separated into two distinct developmental stages: *early adolescence*, which corresponds to middle or junior-high-school age youth, and *late adolescence*, which refers approximately to ages 14 through 18 (Santrock, 2007, p. 17).

Examples of ELIS studies with young people. Researchers studying adolescents in information scenarios outside the realm of imposed queries or assigned research projects included Poston-Anderson and Edwards (1993), who examined late adolescent females and patterns of library use (finding that libraries were viewed negatively by the participants); Todd (1999), who identified five types of cognitive information use

occurring when female adolescent participants sought material regarding heroin use; and Agosto (2007), who investigated why adolescents aged 14-17 use public libraries, and also researched gender differences in adolescent public library use (Agosto, Paone & Ipock, 2007). Agosto and Hughes-Hassell's (2005, 2006a, 2006b) urban teen study is discussed more thoroughly later in this chapter. Agosto and Abbas' recent studies (2009, 2010, 2011) revealed ICT behaviors of middle- to upper-income students working in a highly technological high school, and provided details concerning teens' social networking preferences and practices. Their studies provided understanding for "how" students (who are in many ways similar to the population chosen for this dissertation) interacted with ICTs. They suggested researchers need a more thorough understanding of the "thoughts, behaviors, preferences, and concerns that underlie the use of ICTs in general" (2010, p. 9), and also recommended continuing to seek adolescent perspectives.

Lu. Lu (2009) conducted a study that examined how pre-adolescent fifth and sixth grade students in Taiwan used information to cope with daily-life problems. Lu noted that "Little is known about how (or if) young people use or seek information for their personal development and growth" (p. 77). Lu identified five information seeking behaviors in children (aged 12 and under): problem solving, escape, transition, mood modification, and avoidance.

Julien. Also studying daily information behaviors is Julien (1999), who used survey data (including open-ended questions) to investigate high school students, aged 15-19, as they recalled finding career information. Interestingly, her findings indicated some similarities with the Agosto & Hassell-Hughes (2005, 2006a, 2006b) urban teen study, in that the participants she queried did not seek out librarians on campus as potential sources of help and information. She labeled this as an institutional barrier, and

mentioned a lack of confidence or trust in help providers and concluded: "The results also show that many adolescents did not understand what decisions they needed to make about their futures" (Julien, 1999, p. 47).

Koo. Savolainen's ELIS theory (1995, 2008) informed Koo (2012), who interviewed recent South Korean immigrant adolescents, aged 10 to 20; her findings indicated that students in this population have two main information needs, academic achievement for entry into desirable colleges and universities, and the forming of friendships as a means for developing a social life. Adolescents studied sought out parents as information sources, and passively coped with problems through the use of limited information sources and channels.

Meyers, Fisher, and Marcoux. Meyers, Fisher and Marcoux (2009) researched "tweens," "a sandwiched population with behaviors, circumstances, and needs distinct from children and young adults" (p. 301) in their qualitative study involving non-school information seeking contexts. Their study was part of a larger study which examined how people turn to other people for solving information needs, ranging from "finding new jobs and lower mortgages to health care, housing, child care, social activities, and other aspects of daily life" (Meyers, Fisher & Marcoux, 2009, p. 307). Using data collection from focus groups and interviews with 34 "tweens," aged 9-13, the researchers shared findings that paint a picture of everyday life information seeking aligning with Chatman's (2000) theories of life in the round and small world information experiences. Researchers also noted that "…adults play important roles in developing information-seeking skills through modeling and scaffolding behavior" (Meyers et al., 2009, p. 337). While study participants were able to voice everyday life information needs, they were also inhibited by potential barriers, such as embarrassment, social perceptions, or unequal power

relationships (p. 338). The Meyers, Fisher and Marcoux study illuminated a population (which they also labeled as "Millennials") that Lu (2009) said was not typically studied (young people who are not yet adolescents). Key themes emerging from their research were that "tweens" understand that they have information needs, and they recognize constraints emanating from differing sources of information.

Meyers, Nathan, and Saxton. Also exploring an information barriers theme are Meyers, Nathan, and Saxton (2007), who spent more than a year observing high school librarian interactions with adolescent students within the framework of Kuhlthau's (2004) model of intervention, which builds upon Vygotsky's (1978) zone of proximal development (ZPD) findings, wherein students are able to progress into higher, more challenging levels of learning when aided by knowledgeable peers or adults who provide scaffolds that encourage cognitive growth. Their findings (Meyers, Nathan & Saxton, 2007) are useful for this study because they shared interview data that describes how teacher-librarians perceive their own roles per the *Information Power* (1988, 1998) documents. "The teacher-librarian is well-positioned to facilitate connections between the library environment and students' lives, but is also equally positioned to create a negative situation through restrictions on tool use, enforcing rules preventing interpersonal sharing, or discounting students' prior knowledge" (Meyers et al., 2007, p. 10).

Savolainen's ELIS Framework – A Critical Theory Perspective

Chosen as a theoretical lens for this paper are Savolainen's (1995, 2005, 2008) ELIS practice framework, and models. He defined ELIS as a way to legitimate *nonwork information seeking*. "Broadly defined, the concept of ELIS refers to the acquisition of various informational (both cognitive and expressive) elements which people employ to orient themselves in daily life or to solve problems not directly connected with the

performance of occupational tasks" (Savolainen, 2008, p. 3). Spink and Cole (2001) offered additional insight, by stating "In occupational or school information seeking, the user is seeking information in a controlled environment with a definite end product … ELIS, on the other hand, is fluid, depending on the motivation, education, and other characteristics" of searchers (p. 301). Savolainen's model resembles Kuhlthau's (1988, 1993, 1995) works somewhat in that he considers "personal facts such as values, attitudes, and psychological orientation towards life" (Case, 2008, p. 132), as well as contextual situations, such as ways time might be allocated towards activities. A major difference Savolainen's ELIS model (1995) provided is that it might be used over a period of time rather than for one specific event, such as an assigned research project, and thus offers a way to examine a broader scope of information use behaviors.

Bourdieu's *habitus.* To formulate the ELIS model, Savolainen (1995) drew upon Pierrre Bourdieu's (1984) theory of *habitus,* wherein individuals internalize a socially and culturally determined system of thinking, perception, and evaluation. *Habitus* is described by Case (2008) as "ways of seeing and thinking that guide choices in life" (p. 311). Savolainen (1995) described certain elements of Bourdieu's (1984) theoretical concept, including *habitus* as a "structuring structure," one that organizes and classifies; as a "structured structure;" one that uses the idea of value to divide different classifications into groups; and as an element of social class. "As a socially and culturally mediated system of classification, habitus renders a general direction to choices made in everyday life by indicating which choices are natural or desirable in relation to one's social class or cultural group" (Savolainen, 1995, p. 262). *Habitus,* as conceived by Savolainen's explanations, transforms into a *way of life,* and how one organizes that life, with the inclusion of objective and subjective parts into organizational actions. It is

important, however, to also retain Bourdieu's (1984) conception of *habitus* as a dynamic, transformative process which leads to individual change in relation to perceptions of where one stands in relation to a type of social playing field (Johannesson & Popkewitz, 2001). For this dissertation study, Bourdieu's (1984) notions of *habitus* are particularly relevant. The upper income students in this study live in a wealthy suburb. The lens provided by *habitus* provides an assumption that participants in this study are not only influenced by one another while working in the school library, but that they are also impacted by the social context of their existence as a whole.

Habitus as a social construction. For the purposes of this discussion, it is essential that Savolainen's (1995, 2008) borrowed conceptualization of *habitus* as a social construction be used. "Importantly, the incorporation of the social is central to the formation of habitus; this occurs through processes of conditioning and social learning, forming the basis of that presence in the social world which is the assumption of successful social action" (as cited in Savolainen, 2008, p. 17). Each individual then actually inhabits a type of lifestyle that is in turn influenced by the existing social structure. "This means that inevitably inscribed within the dispositions of the habitus is the whole structure of the system of conditions, as it presents itself in the experience of a life-condition occupying a particular position within that structure" (Bourdieu, 1984, p. 172).

Placed within a school library setting, students exist within their own lifestyles even as they are also influenced and shaped by the lifestyles or life-conditions of those around them. Continuing this theme within a school setting are Deil-Amen and Rosenbaum (2003), who studied how community college students adjusted to life and academic demands, with an emphasis on class structures. Upper income students possess

"social know how," or abilities which tap into social skills and knowledge, on levels that are not equal to lower-income students, who may need help "navigating a hidden curriculum of social prerequisites necessary for navigating and succeeding in a college environment (Deil-Amen & Rosenbaum, 2003, p. 121). Santrock (2007) listed common inequities occurring among children growing up in households with incomes below the poverty level including exposure to family turmoil and violence; fewer social supports; more time spent viewing television combined with less time spent using computers and books; attendance at inferior schools and childcare facilities; living in crowded, noisy homes; and existing in dangerous surroundings. Payne (2005) noted that different classes of society have varying hidden social rules, many which are "visible" only to those who inhabit a certain socioeconomic class. These rules function as guideposts that allow members to successfully live within social groups, and are foundational to shaping lifestyles and social conditions for group members.

ELIS context and terminology. Savolainen (1995) used *habitus* to structure the basis for his ELIS model. *Way of life* deals with the "order of things," meaning that individuals tend execute or enjoy activities (the "things"), and that they also exhibit preferences (the "order") for some activities over others. The "order of things" also encompasses objective and subjective elements (e.g. the hours a person works at a task), contrasted with the enjoyment the person derives from completing the task. Savolainen operationalized these ideas with the following factors: *structure of time budget* (the proportions of time spent between leisure and work time); *models of consumption of goods and services*, and *nature of hobbies*. These three factors characterize one's way of life, and elements of adaption (external elements may intrude upon personal preferences) are also present. Inherent in all of these concepts is the idea of *mastery of life*, meaning

that people tend to take care of or preserve the meaningful order of things. *Mastery of life*, according to Savolainen, is a type of preparedness for life, and occurs either passively (things work well and proceed without interventions) or actively (problem-solving must occur to retain order).

Significance of Savolainen. Savolainen (1995, 2008), building upon Bourdieu's (1984) works, helped investigators to better understand the information interaction behaviors of digital age students. His words aptly describe social situations in which digital age adolescents find themselves. They may experience concerns causing them to seek and use information resources, set within a socially constructed world that influences and, in turn, are influenced by those inhabiting that world. A set of hidden "life rules" may help students in different settings adjust to and successfully navigate school requirements. These rules will change for different socioeconomic groups, and impact how they shape their own learning scenarios. Amidst this setting, school librarians execute actions that strongly influence learning experiences students encounter. When specific school librarian roles, as described in the AASL (2009) *Empowering Learners* document, are exhibited in constructive learning environments, knowing how students go about meeting their ELIS needs helps to determine best practices for creating facilitative learning experiences.

Typology of mastery of life. Savolainen (1995) created a typology of mastery of life in order to help describe different ways that individuals approach problem solving. These include four ideal types: a) *Optimistic-cognitive mastery of life* - Individuals believe that with analysis and effective use of tools they will be able to solve most problems; b) *Pessimistic-cognitive mastery of life* - Individuals, despite accepting that they may not be able to solve all problems, still may go about problem solving in a

systematic way; c) *Defensive-affective mastery of life* - Individuals exhibit affective behaviors; degrees of optimism or pessimism vary according to the person's own self-concept, and some individuals may avoid problem solving scenarios where they perceive potential failure; and d) *Pessimistic-affective mastery of life* - Individuals rely upon "learned helplessness" and use strategies to avoid any type of organized approach to problem solving; rather, "emotional reactions and short-sightedness dominate problem-solving behavior" (Savolainen, 1995, p. 266).

Savolainen (1995) created a model describing his understanding of ELIS in the context of *way of life*, testing it when he studied two potentially divergent groups of information users: blue collar workers and teachers. He chose participants from different social classes in order to test his theorizing (influenced by Bourdieu, 1984) regarding varied information behaviors occurring as a result of changeable social and cultural capital. His key question involved how ELIS behaviors and practices might be directed by *way of life* and *mastery of life.* "It is assumed that way of life and mastery of life are structured by a set of social, cultural and cultural capital owned by informants" (Savolainen, 1995, p. 269). His findings indicated that while both groups tended to fall into predictable patterns regarding information seeking and use, there were also anomalies that led him to conclude that "Attempts to typologize ELIS also revealed that way of life and mastery of life will not alone determine information-seeking behavior" (p. 288). He noted that the use of focused case studies might allow for deeper analyses of how people go about seeking and using information channels and sources for both critical information seeking scenarios and serendipitous "events" that occur when information is found in an unstructured manner. It is this recommendation that informs the choice to use a qualitative case study design for this dissertation.

A Description of 21st Century Learners

Students studied by researchers such as Kuhlthau (1988) more than two decades ago lived and worked in a much different world than the one inhabited by today's adolescents; a large percentage of students today have had continual access to electronic forms of communication and information for their entire lives. Computer access, social networking, cellular phone technologies, file sharing and other 21st century phenomena contribute to create a very different context than the one shared by theorists in past years. Discussed earlier are the various monikers researchers use to help us understand this generation. Naming them might help adults learn more about them, but perhaps more importantly, we must study these students to deeply understand the worlds they inhabit and how their these increasingly different environments impact the ways they learn and seek information.

Digital natives. Prensky (2001) identified *digital natives* as the first generation that has grown up with ubiquitous technologies in their lives. "They have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age" (Prensky, 2001, p. 1). While Prensky wrote humorously about the differences between digital natives and digital immigrants (the portion of the population who did not grow up with technology as a ubiquitous part of their lives), he also cautioned, "…the single biggest problem facing education today is that our Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language" (Prensky, 2001, p. 2). Palfrey and Gasser (2008) also described digital natives: "These kids are different. They study, work, write, and interact with each other in ways that are very different from the ways that you did growing up" (p. 2).

Net generation. Tapscott (2008) closely examined this group of learners over a period of 20 plus years. He defined the *net generation* as persons who are between 11 and 30 years old, and explained that they are the first generation to come of age in the digital age. He highlighted some of the technological changes occurring in the past 10 years, changes that have created a different type of world for adolescents than the one their parents inhabited, and includes Internet speed, mobile devices, and social networking as evidence of change. "They are bringing their demographic muscle, media smarts, purchasing power, new models of collaborating and parenting, entrepreneurship, and political power into the world" (Tapscott, 2008, p. 3).

Generation Z. *Generation Z* refers to young people born after 1990, who are described as being unique "because their birth coincides with the introduction of the graphical Web that resembles the Internet of today. These adolescents are amateur Internet searchers lacking skills in evaluating Web content and using resources other than popular Internet search engines such as Google" (Geck, 2006, p. 1). Adolescents born after 1990 have grown up in environments surrounded by the Internet, mobile devices, broadband connections, wireless transmission, and videogaming. Geck echoes what Palfrey and Gasser (2008) and Tapscott (2008) also described in terms of how today's adolescents use available technologies.

Criticism of labeling students. Criticism against labeling students as *digital natives* exists. Selwyn (2009) questioned whether or not the concept of the "constantly connected" young person is perhaps an exaggeration. While labels might be helpful to differentiate broad classes of learners (such as comparing Baby Boomers with today's young students), Todd (2009) cautioned educators and library professionals against using specific terminology, and shared his view that such comments may be culturally

offensive. Agosto and Abbas (2010), in their examination of high school seniors' use of mobile devices, found that the *digital native* description may be faulty or at least, incomplete. In contrast to the idea that adolescents will constantly use technologies, some students in this study "were generally wary of having to relearn how to use online tools…" (Agosto & Abbas, 2010, p. 8). Agosto and Abbas uncovered enough contradictions in their study to note that "there is no simple picture of today's teens and mobile device usage, and that no sound bite or slogan can provide a full picture of their attitudes toward mediated communication" (2010, p. 8). Meyers et al. (2009) questioned whether labeling students as "digital natives" was wise. "Arguments may be made, at least until hard science shows otherwise, that youth remain the same: despite the pathways afforded by evolving technologies, the physical, affective, and social contexts that shape one's worlds are constant" (Meyers et al., 2009, p. 303). Early adolescents (aged approximately 10-13) may be better served in a holistic manner that appeals to social, affective, and physical information needs. Bennett, Maton and Kervin (2008) discussed the "digital natives" label and determined that harm could occur when children were grouped together as technology experts without allowing for individual learning and proficiency levels, noting: "overlooking inequalities can lead to overconfidence in young person's skills" (Bennett, Maton & Kervin, 2008, p. 781).

Facer and Furlong (2001) investigated labeling students as "Cyberkids" and discovered that such labels might have negative consequences for the young people being described. Helsper (2008) examined various types of labels that deem young people as "proficient" and shared an "ostrich tactics" metaphor wherein so-called experts may prefer to not tackle technology issues and problems because they may actually lack the perceived skills needed to problem solve. She cautioned: "It is imperative that this image

of the latest generation as 'Digital Natives' does not distract educators and parents from understanding the complex issues that lie beneath young people's everyday interaction with ICTs" (Helsper, 2008, p. 14).

An important next step, beyond identification of learners who live in the digital age, is to understand the overall context in which they exist. Ito et al. (2010) approached this topic contextually as well, preferring to describe youth "social media" interactions as firmly set within already existing social and cultural structures, and distanced herself from viewing young ICT users as being somehow different than others. "We are wary of claims that there is a digital generation that overthrows culture and knowledge as we know it and that its members' practices are radically different from older generations' new media engagements" (Ito et al., 2010, p. 1).

Research: Need to Know

There is a need for researchers to learn how the global, digital playing field upon which today's young people learn and work causes potential shifts in the ways they go about searching for and interacting with mobile devices. Issues of access also arise both in terms of physical access to emergent technologies and access to potential information sources.

Contemporary students are described by AASL in terms of technologies that inhabit their worlds. Digital learners may appear to be tech-savvy on global levels, but significant divisions exist between those who enjoy full technology access, and others who do not (AASL, 2009, p. 11). Robinson (2008) suggested that physical and virtual libraries might come together in a type of "tertiary" space where perhaps the focus is not on librarians providing access to patrons, but rather on librarians instead facilitating a type of playing field where creative endeavors might flourish. "While much…discussion

has focused on the Net Generation as the locus of change for academic libraries, the issue that is foregrounded by this discussion is that library services altogether are being challenged to become more flexible and responsive in the way that they meet the needs of their users" (Robinson, 2008, p. 74).

Constructivist Metatheory as a Lens for this Study

How does this new generation of technology-embracing adolescents connect with what is known about student learners and how to best meet their information needs? Constructivist metatheory, coming from education and psychology, moves teachers away from a once-preferred transmission mode of teaching (where an action is modeled or displayed for a passive student audience) to a constructivist approach wherein the instruction is deliberately concerned with how individuals build or create understanding of the worlds they inhabit. A constructivist stance also becomes an ontological statement about the nature of being, meaning that our lives occur in a socially constructed manner based upon our interactions with one another. Inherent to constructivist beliefs is an understanding that humans create language, roles, and rules within social experiences, and they simultaneously replicate and cement past behaviors in accordance with the beliefs of the social group surrounding them. Bates (2005) called this an approach, "…in which individuals are seen as actively constructing an understanding of their worlds, heavily influenced by social world(s) in which they are operating" (p. 11).

Defining constructivism. Other, slightly varying definitions of constructivism exist in LIS research. Gergen (1985, 2000) described this concept as the way individual brains construct reality within the confines of the external world, and called upon theories developed by psychologists Piaget (1954) and Kelly (1963) as supports for his reasoning. George Kelly's constructive alternativism (1963) provided three "convictions" that

humans use as they construct personal understandings of the world in which they live. These beliefs in the universe include a nature of its reality (it is not something we imagined), that it works interactively ("like clockwork"), and that it is a dynamic, changing process that is not static (Kelly, 1963, p. 7). Central to these beliefs is the idea that "all of our present interpretations of the universe are subject to revision or replacement" (Kelly, 1963, p. 15), and that elements of predictability also play into the way humans construct and continually reconstruct their own perceptions and beliefs about what reality entails.

Kuhlthau (2004) reminded researchers that within the LIS field, constructivist theory is "borrowed" from other disciplines, and adds that this viewpoint offers a useful way to understand how information seekers go about meeting their information needs. She shared two basic themes occurring within constructivist theory. "One is that we construct our own unique personal worlds, and the other is that construction involves the total person incorporating thinking, feeling, and acting in a dynamic process of learning" (Kuhlthau, 2004, p. 14).

Talja, Tuominen, and Savolainen's viewpoints. Constructivism provides a way to view the concept that "constructs have social origins and are learned through interaction with other people" (Littlejohn & Foss, 2008, p. 124). Talja, Tuominen, and Savolainen (2005), in their literature survey examination of the metatheories of constructivism, collectivism, and constructionism, noted that historically, construction differs from the other two concepts in that it deals with discourse as a vehicle, in contrast to constructivism which concerns the individual mind's creation and understanding of what is real. "Social constructivism is a metatheoretical position that argues that, while the mind constructs reality in its relationship to the world, this mental process is

significantly informed by influences from social convention, history, and interaction with significant others" (Talja, Tuominen, & Savolainen, 2005, p. 81).

Vygotsky's sociocultural cognitive theory. During his years as an academic and instructor, Vygotsky (1962, 1978) developed a social constructivist theory that provides a particularly strong fit for the field of education. Constructivism, according to his writings, is, "…a view of learning suggesting that learners construct their own understanding of the topics they study rather than having that understanding transmitted to them by some other source" (Eggen & Kauchak, 2004). Vygotsky (1962, 1978), whose theories were originally developed in Russia from 1924 to 1934, exerted a profound influence on educational psychology and teaching theory. Educators studied and built upon his sociocultural cognitive theory even as they also developed pedagogy in education. Vygotsky, who promoted ideals of best practices for teaching (observation, mentoring, cultural agents, the ZPD, scaffolding steps for optimal learning, and the importance of language to learning), created a theory that today delivers a strong fit for determining ways educators might provide instruction.

Research: Urgency to Know

Today's learners inhabit different information contexts than those of students even just 10 years ago. It is important researchers learn more about their information use behaviors because student ELIS practices are undoubtedly be affected by future technological innovations. Building upon the theory base in this field develops fresh perspectives that help to add to existing knowledge and illuminate new findings.

Because of the rapidly changing world in which students live, it is necessary to also instill a sense of urgency into the research agenda for this dissertation. The current state of education today, according to Zhao (2009) is one that faces constraints and

barriers. “An increasing number of states and the federal government have begun to dictate what students should learn, when they should learn it, and how their learning is measured through state-mandated curriculum standards, high school exit exams, and the No Child Left Behind Act (NCLB)” (Zhao, 2009, p. vii). He reminded us that in order to progress in a global world, education must focus on the development of digital and global competencies, which he labeled “the new universal knowledge and skills” (Zhao, 2009, p. 160).

Zhao’s (2009) four areas of digital competence include knowledge of the nature of the virtual world (he stated that people have overlooked that the virtual world is different than the physical world); positive attitude towards the virtual world; the ability to use different tools to participate and lead in the virtual world; and the ability to create products for the virtual world. Zhao’s (2009) recommendations aligned closely with AASL *Standards* (2007), especially as expressed in the document’s nine common beliefs, and the accompanying *Empowering Learners* (2009) guidelines. School librarians are tasked with helping students to become competent global and digital citizens in order to participate and grow along with changes in economies, legislative decisions, and evolving technologies. In order to accomplish such goals it is necessary to define the frameworks that guide actions for learning and working with students.

Impacts of Constructivist Theory

Constructivist metatheory explains not only how students go about learning in socially constructed environments, but also how they seek information that informs those environments. Shenton (2007) offered an alternate way to consider how constructive learning experiences occur. “In order to access information in a source, the user must often apply knowledge that he or she does not yet possess” (Shenton, 2007, p. 2),

meaning that as learning experiences occur, students have to use the building blocks of prior knowledge to recreate new knowledge. Constructivist learning theory has provided much of the bulk of learning theory for decades. Liu and Matthews (2005) labeled it the "leading metaphor of human learning since the 1970s," and a "dominant church of thinking" (p. 1).

Dewey's view. Combining constructivist underpinnings with educational findings is John Dewey (1902, 1910, 1915, 1938, 1944), who attempted to create an official "philosophy of education" in an effort to move teaching and learning into new experimental realms under the heading of "progressive education." Dewey wrote many papers and books covering the education of children. Chief among his ideas are the beliefs that education should be child centered, that it must be both active and interactive, and that it must ultimately evolve within the social world of the child and community.

***Reflexive thinking*.** A central aspect of Dewey's (1910, 1915, 1944) writing is that through reflexive thinking, learners reconstruct their understandings of the world around them. The phases for this type of thinking, according to Dewey, included: suggestion (the entrance of doubt because of an incomplete situation), intellectualization (formulating the problem in one's mind), creation of a guiding idea or hypothesis, reasoning (testing facts against interpretation), and taking action. "The trained mind is the one that best grasps the degree of observation, forming of ideas, reasoning, and experimental testing required in any special case, and that profits the most, in future thinking, by mistakes made in the past" (Dewey, 1910, p. 78). If a world is rapidly changing and evolving, as is the digital playing field upon which the adolescent learners in this study exist, then elements of reflexivity should help them to move into deeper and more challenging phases of learning. One can readily imagine an ELIS "event," wherein

a student experiences some type of doubt about a personal issue or concern, determines a way to qualify the concern so that it may be searchable, comes up with a general idea of his or her beliefs, and then takes action by either problem solving or ongoing searching (moving through elements of this process again). The "trained mind" is one that is influenced by educational experiences with adults.

Seeking meaning. Dewey (1938) discussed the practice of seeking meaning in human thought: "To grasp a meaning, to understand, to identify a thing in a situation in which it is important, are thus equivalent terms; they express the nerves of our intellectual life. Without them there is a) lack of intellectual content, or b) intellectual confusion and perplexity, or else c) intellectual perversion – nonsense, insanity" (Dewey, 1938, p. 117). He described the seeking of meaning as a necessary part of the growth process, and suggested "What we need is something which will enable us to interpret, to appraise, the elements in the child's present putting forth and fallings away, his exhibitions of power and weakness, in the light of some larger growth process in which they have their place" (Dewey, 1902, p. 9). Based on his assumptions, students working through ELIS practices and interactions with information may require assistance from others in order to make sense or some type of meaning out of potential solutions. How might school librarians who work closely with these students use pedagogical knowledge to inform how they help or assist them?

Impulses and instincts. Dewey (1915) also described "impulses" that exist in all children and are evidenced during their school years. *Social instinct* occurs through conversations with peers, inner self-directed conversations, and in overall communications with others (Dewey, 1915, p. 37). The *language instinct* is present in all students and may be the simplest type of impulse that occurs. The *constructive instinct*

refers to the child's innate desire to build things, described by Dewey (1915) as the child's impulse "to do." An *investigative instinct,* said Dewey, grows out of the child's constructive instinct and the conversational or social instinct described above. While Dewey wrote about these impulses nearly 100 years ago, he clearly understood his research population. Students today still share elements of social, language, constructive, and investigative instincts or impulses, a fact that bodes well for school librarians working with adolescent learners seeking to fulfill information needs. In his writings on the thinking process, Dewey also considered habits (1944) to be a cementing of educational attainment and growth; habits may be described in terms or practices that people conduct, but in order to affect cognitive growth. Habits must be intellectually informed and questioned, rather than become rote ways of executing actions. Dewey (1902, 1910, 1915, 1938, 1944) firmly supported a constructivist approach, describing how learners build upon prior experiences to create new understandings. His words also make sense in the area of examining student learners in order to determine strengths and weaknesses and proscribing solutions for facilitative, successful learning experience to occur.

Bruner's view. An important concept Kuhlthau (1998, 1993, 1995, 2204, 2008) and other LIS researchers such as Dervin (1983, 1999) borrowed from psychologist Jerome Bruner (1973), is that of schema. "That integrated, organized representation of past behavior and experience which guides individuals into reconstructing previously encountered material which enables people to go beyond evidence, to fill in gaps, to extrapolate" (Bruner, 1973, p. 5). Here, Bruner's schema discussion provided a starting point not only for Kuhlthau's (1998, 1993, 1995) ISP model, but also for Dervin's (1983, 1999) Sense-Making theory and methodology. Students seek information that will

potentially affect their current construct in order to fill in knowledge gaps and to gain understanding.

Bruner's (1973) schema theory supported this dissertation because it provided description of how the transmission of culture through education was the preferred model in the past. He commented on the viability of using a process of negotiation to spark learning, and noted that "…this conclusion runs counter to traditions of pedagogy that derive from another time, another interpretation of culture, another conception of authority – one that looked at the process of education as *transmission* of knowledge and values *by* those who knew more to those who knew less and knew it less expertly" (Bruner, 1986, p. 123). He also recommended introduction of complex, problem-solving exercises he describes as necessary for cognitive growth. His statements carry weight today in scenarios where a transmission model of teaching is still firmly seated alongside emerging technologies.

Pedagogical Concerns and Constructivism

A major problem for today's learners is that educational programming may not be changing in ways that meet newly-emerging needs for instructing young people. As noted in the *Horizon Report 2010 K-12 Edition*, "Students are different, but educational practice and the materials that support it are changing only slowly…Schools need to adapt to current student needs and identify new learning models that are engaging to younger generations" (p. 5). Papert (1993), who discussed the need for a renaissance in the way education is thought about, stated "Conservatism in the world of education has become a self-perpetuating social phenomenon" (p. 37). Additionally, the *Horizon Report* (2010) acknowledged the multifaceted roles that technology plays within the lives of digital age students, noting that many educational activities and learning actually take

place outside of classroom confines. These experiences, however, are "often undervalued or unacknowledged…for students who are seeking some connection between their world, their own lives, and their experience in school" (Smith et al., 2010, p. 5). In order to understand how *Horizon Report* (and other) findings affect the way we work with students, it is useful to revisit the parameters of constructivist theory.

Constructivism and Digital Age Students

Constructivist metatheory, viewed through perspectives provided by educational psychology, provides a solid fit for examining how digital age students go about seeking and interacting with information. Additionally, when understandings gained from how knowledge within societies is socially constructed (Berger & Luckmann, 1967; Boulding, 1956), deep examination into the ways that today's young adults interact with information resources in a digital age context is attainable. According to Berger and Luckmann (1967), people create language, roles, and rules within social experiences, thus defining their existence while at the same time replicating and cementing past behaviors according to the expectations and rules of the group with which they live. Another viewpoint playing into these schools of thought is Boulding's (1956) concept of *image*, which is the mental picture of an object or concept, taken from subjective experiences, which humans construct in order to gain meaning. He suggested that people build knowledge from past experiences, and the images in human brains take on an organic quality, growing and changing even as individuals experience growth and change in life. This concept makes examination of digital age learners relevant. The technological and social contexts of their lives are changing today at an incredible pace, and defining and understanding their interactions with information help provide answers that build on a growing theory base.

Constructivist Ties to Savolainen

The constructivist stance described in this paper supports research conducted by Savolainen (1995, 2008). His interest in and citing of Dervin's Sense-Making (1983, 1999) theory and methodology aligns with constructivist beliefs even as he noted the importance of "the ways in which the phenomena of information seeking, use, and sharing are seen as socially and culturally sensitive phenomena" (Savolainen, 2008, p. 4). Individuals, he asserted, have a need to make themselves the focus of their life experiences, and it is this "reflexive modernization" that contains elements of constructivism. "In other words, the choices made by people are affected by the ways in which they seek and use information" (Savolainen, 2008, p. 1). Information seeking and use are shared social and cultural habits, then, moving into actions when required by personal needs.

The Urban Teen Study

Applying Savolainen's (1995) ELIS model with a lesser-studied population was Agosto and Hughes-Hassell (2005, 2006a, 2006b), who investigated urban adolescents as they went about seeking information. Agosto and Hughes-Hassell, keeping their study tightly confined to 27 adolescents aged 14-17 in an urban setting, sought to create a typology of urban adolescents' ELIS practices regarding people sources, types of media, and topic choices. Their data collection methods included written surveys, audio journals, written activity logs, and camera tours. Agosto and Hughes-Hassell noted that participants in the study lived in low-income, inner-city neighborhoods.

Research questions for urban teens. Research questions posed by Agosto and Hughes-Hassell (2005) included what types of information do urban young adults seek in their everyday lives; what types of information media do urban youth favor; and what

people sources do urban young adults see out when seeking everyday life information? Agosto and Hughes-Hassell's study was significant in the field because it not only addresses an underreported group of participants, but it also questioned the idea of what librarians need to know to provide best practices in serving clientele. The urban teen study also uncovered adolescent developmental tasks in the form of various "selves" that teen inhabit as they conduct ELIS practices.

Negative perceptions findings. Participants in the Agosto and Hughes-Hassell (2005, 2006a, 2006b) study did not typically seek out libraries or librarians as sources for information. Ranked ahead of librarians in the typology created by study authors were friends and family, school employees, mentors, and customer service staff. "Participants conveyed negative attitudes toward libraries and librarians and reported frustration with many of the same aspects of library service such as strict rules, unpleasant staff, lack of culturally relevant materials, dreary physical spaces, and limited access to technology" (Agosto & Hughes-Hassell, 2005, p. 161). Also of concern is the fact that 16 of the 27 participants worked at a public library after school and on weekends. Agosto and Hughes-Hassell's findings pointed to a need for improvement in the development of librarian roles; gaining understanding of adolescent developmental needs will better inform their provision of services to young people.

Urban teen theoretical and empirical models. In their study of urban adolescents, Agosto and Hughes-Hassell (2006a) stated that the theoretical model begins to explain the various developmental "selves" that identify the urban teens as they fulfilled ELIS needs. The categories they created to explain different modes of information seeking and use demonstrate "that the essence of urban teens' ELIS is the gathering and processing of information to facilitate the multifaceted teen-to-adult

maturation process" (Agosto & Hughes-Hassell, 2006a, p. 1401). An empirical model (Agosto & Hughes-Hassell, 2006b) described how different "selves" that adolescents inhabit influence the topics they seek to meet ELIS needs, and are indicative of adolescent developmental processes.

Agosto and Hughes-Hassell (2006a) called for more research that links ELIS practices of young information users to developmental theory. For the purposes of this study, framing research efforts within constructivist theory means that elements such as Vygotsky's (1978) scaffolding and ZPD structures coexist alongside everyday learning processes occurring in a social context; such examination might help us to understand how adolescents grow cognitively and developmentally. Urban teen study results (Agosto & Hughes-Hassell, 2006a, 2006b) are not generalizable to the overall U.S. population of adolescents. Elements that affect potential generalizability included willingness of the participants to be a part of the study, the small pool of participants involved, and the homogeneity of participants' race/ethnicity.

Adolescent Development Theories

Inherent into examining the ELIS behaviors of adolescents in any setting are developmental models that help researchers understand these behaviors within a developmental context. Major theories within this area include psychoanalytic, cognitive, behavioral, social cognitive, and ecological contextual points of view. It is important to acknowledge findings from those in the field of adolescent psychology, because they help us understand adolescent cognitive, physical, and social development.

Piaget. Piaget's (1954) cognitive developmental theory places adolescent learners in the formal operational stage (emerging at approximately 11 years of age through adulthood), and stated that adolescents begin to reason in abstract, idealistic, and logical

ways, especially when compared to the earlier-occurring sensorimotor, preoperational, and concrete operational stages (Santrock, 2007). Also appearing during the formal operation stage is metacognition, or thinking about the process of thinking. Adolescents in this stage also begin to use hypothetical-deductive reasoning to test conjectures about possible solutions to problems, completing these operations in a systematic manner. In contrast is Erikson's (1950, 1968) psychosocial stages, a type of psychoanalytic theory that categorizes individuals into differing stages of development. His works influenced Havighurst (1972) and his theory of adolescent developmental tasks, and are discussed later in this chapter.

Vygotsky. Vygotsky's (1962, 1978) sociocultural cognitive theory remains popular within educational settings today. He advanced the belief that through collaboration with more skilled peers and/or adults, children achieve higher levels of cognitive ability. "Specifically, instruction can lead development when any form of higher cognition is beginning to mature" (as cited in Gredler & Shields, 2008, p. 83). In other words, recognition of cognitive abilities should precede development of classroom instruction. Vygotsky (1978) described this as differences in assumptions about the temporal relationship between developmental processes and the actual act of learning.

Vygotsky (1962, 1978) is also known for introducing the concept of the social world as a part of the learning experience. He listed several problems occurring in pedagogy, including focusing on physical over social interaction characteristics of learners; seeing the environment as an external factor to the child; and viewing the environment as the setting for learning, rather than integrating the idea of it as a source of learning (Gredler & Shields, 2008). Vygotsky (1978) described the zone of proximal development (ZPD), a concept which rested upon a belief that psychological

development is affected by social processes occurring around and within the learner (Ardichvili, 2001).

A powerful idea emerged with Vygotsky's (1962, 1978) notions of socially-nurtured relationships between teachers and learners. His writings suggested "that reform efforts at any level of schooling should begin with an analysis of the social reality that the learner must face, with particular attention to the nature of the personal contact between the teacher and student" (Gredler & Shields, 2008, p. 171). AASL (2009) described facilitated learning between adults and students as "tailoring teaching methods to meet learners' needs. By reflecting on the learning process, students learn how to learn while constructing new knowledge" (AASL, 2009, p. 20).

Havighurst. Havighurst (1972), writing nearly 65 years ago, provided a clear and precise explanation of developmental tasks: "These inner and outer forces contrive to set for the individual a series of developmental tasks which must be mastered if he is to become a successful human being" (Havighurst, 1972, p. 5). Tasks, he determined, develop from processes of physical maturation and cultural pressures from society. Affecting development are also personal beliefs and aspirations of the individual, and his descriptions of developmental task achievement parallel some of Piaget's (1954) teachings. Havighurst (1972) noted that "sensitive periods" occur throughout life affecting how well humans are able to learn new content, coining the phrase "the teachable moment" (p. 7). He described how humans learn and adopt material through a series of steps, similar to Vygotsky's (1978) discussions about scaffolds and ZPD interventions in the learning process: "The path of learning is not one long slow uphill climb with something to learn every new day, but consists of steep places, where the

learning effort is severe, interspersed with plateaus where one can speed along almost without effort" (Havighurst, 1972, p. 2).

Havighurst's developmental tasks in detail. Havighurst (1972) labeled adolescence as the period of time between ages 12 and 18, and noted that emotions during this time frame sometimes play a more intense part in development than do intellectual processes. He described 11 developmental tasks that must be realized by adolescents before they can move into the adulthood stage of development. They included:

1. *Adjusting to a new physical sense of self.* Rapid physical changes associated with puberty affect adolescents' views of themselves and their growing bodies.
2. *Adjusting to new intellectual abilities.* Cognitive growth accompanies physical growth, and abstract thinking becomes possible as teenagers consider the physical world that surrounds them.
3. *Adjusting to increased mental demands at school.* Required school curricula become more challenging, aligning with varying developmental rates of students' abilities to practice and master more complex thought patterns and processes.
4. *Expanding verbal skills.* Increases in verbal cognition and use are necessary for completion of more challenging school and social tasks.
5. *Developing a sense of personal identity.* Adolescents, because of increased cognitive abilities that afford abstract thinking, can now consider themselves as distinctly separate beings from both family and peers.
6. *Establishing career goals.* Young people in this age group begin thinking about what they want to do with their lives, and how they will achieve career goals.

7. *Breaking away from parents, both emotionally and psychologically.* Learning to be independent of parents is a necessary task for adolescents as they continue growth towards adulthood, yet is one also fraught with stressors.
8. *Learning to develop stable, productive relationships with friends and peers.* Successfully managing peer relationships is a process that starts in childhood and continues on into adulthood, and can be a predictor for how well adolescents negotiate future social and psychological growth.
9. *Managing sexuality.* Adolescents must incorporate learning and understanding of sexual values even as pubertal change affects their growth into sexual beings.
10. *Developing personal value systems.* Adolescent developmental growth includes internalization of values and morals which may not necessarily agree with parental teachings.
11. *Increasing control over impulses and developing behavioral maturity.* As adolescent brains continue to grow and development, the ability for controlling impulses improves; with impulse controls come self-developed skills for behaving in a mature manner, allowing the young person to exist in society.

Developmental tasks framed within social class. Havighurst's (1972) descriptions and explanations of the developmental tasks provide glimpses into the mindset of education six decades ago, and also are notable because so many of the recommendations are currently in place in public schools today. He was a progressive theorist, much in the same company as Dewey. Perhaps most compelling is that he provided evidence that the achievement of each developmental task also has elements of class, harkening to ideas expressed by Bourdieu (1984) and Savolainen (1995). His descriptions of class effects on development echo similar arguments that *lifestyle*

behaviors are influenced by the surrounding social class structure and inherent socially-mandated behaviors and expectations (Savolainen, 1995, 2008).

A Blend for this Study

Any study involving examinations into the lives of young people must also consider cognitive and developmental growth stages and patterns. This dissertation borrows concepts from Vygotsky's (1962, 1978) sociocultural theory, with elements of constructivist thinking and concepts of scaffolding and mentoring within the ZPD. Other developmental, educational, and psychological theorists help to illuminate processes occurring in students' cognitive and social growth that affect their daily ELIS practices. The Agosto and Hughes-Hassell (2006a) theoretical model of urban teen development, building upon the original construct of Havighurst's (1972) developmental tasks, provided a beginning way to categorize adolescent ELIS preferences in attempts to understand the maturation process of young people moving into adulthood.

Agosto and Hughes-Hassell's "selves." In the urban teen theoretical model, Agosto and Hughes-Hassell (2006a) identify seven potential "selves" that influence adolescent ELIS behaviors (Figure 1). They relied upon Havighurst's (1972) original 11 adolescent developmental tasks as a starting point, and used the 28 ELIS topics they uncovered to create the "selves" theoretical model. Havighurst's adolescent developmental task framework needed to be extended, they determined, leaving to the creation of 12 additional developmental tasks of adolescence:

1. Understanding and negotiating the social world.
2. Seeking emotional health and security.
3. Establishing relationships with adults other than parents/guardians.

4. Developing a sense of civic duty.
5. Establishing a sense of cultural identity.
6. Questioning how the world works.
7. Developing physical self-sufficiency.
8. Seeking physical safety and security.
9. Expressing artistic preferences.
10. Expressing aesthetic preferences.
11. Understanding the physical world.
12. Learning to recognize and accept his or her sexuality (Agosto & Hughes-Hassell, 2006ba, p. 1400).

The "selves" include: a) *the emotional self*: The adolescent's "inner world of feelings or emotions" (Agosto & Hughes-Hassell, 2006a, p. 1399); b) *the reflective self*: The adolescent's inner world set within an introspective context; c) *the physical self:* The adolescent's interactions with the external world; d) *the creative self:* The adolescent's aesthetic needs, fulfilled through creation of products and acts, and through evaluation or judgment of creative works; e) *the cognitive self*: The adolescent's "intellectual comprehension of the world, as opposed to his or her personal reactions to elements of that world, as included under the emotional self" (Agosto & Hughes-Hassell, 2006a, p. 1399); and f) *the sexual self*: The adolescent's awareness of personal sexuality, sexual health, and understanding of healthy sexual practices.

The urban teen study (Agosto & Hughes-Hassell, 2006a, 2006b) is based in part on works by Savolainen (1995, 2005, and 2008) and his growing ELIS body of work. Savolainen, in turn, was influenced by Bourdieu (1984). Agosto and Hughes-Hassell's

(2005, 2006a, 2006b) urban teen study also was linked to the developmental task theory of Havighurst (1972), which contains developmental thinking that parallels elements of Piaget's (1954) and Vygotsky's (1962, 1978) works. Discovering how these pieces all fit together is thought-provoking, as there is no text available that thoroughly describes adolescent students as everyday life information seekers working in school library settings. Borrowing theory helps to carefully illuminate the useful parts of what has already been discovered in an effort to build on existing theory and to discover new findings. Another influence upon this study are the AASL (2007, 2009a) documents.

AASL Standards/Common Beliefs. Because of the professional emphasis placed on library media standards published by ALA (2007), it is important to consider these guidelines when writing about working with student populations. This study is not meant to prove or disprove standards.

AASL (2007) Learning Standards state that learners use skills, resources, and tools to inquire, think critically, and gain knowledge; draw conclusions make informed decisions, apply knowledge to new situations, and create new knowledge; share knowledge and participate ethically and productively as members of our democratic society; and pursue personal and aesthetic growth. The Learning Standards provided detailed description of nine common beliefs that support the four strands exhibited by learners: a) *Reading is a window to the world*. Reading is a foundational skill for learning, personal growth and enjoyment. The degree to which students can read and understand text in all formats (e.g. picture, video, print) and all contexts is a key indicator of success in school and in life; b) *Inquiry provides a framework for learning*. To become independent learners, students must gain not only the skills but also the disposition to use those skills, along with an understanding of their own responsibilities and self-assessment

strategies; c) *Ethical behavior in the use of information must be taught*. In this increasingly global world of information, students must be taught to seek diverse perspectives, gather and use information ethically, and use social tools responsibly and safely; d) *Technology skills are crucial for future employment needs*. Today's students need to develop information skills that will enable them to use technology as an important tool for learning, both now and in the future; e) *Equitable access is a key component for education*. All children deserve equitable access to books and reading, to information, and to information technology in an environment that is safe and conducive to learning, f) *The definition of information literacy has become more complex as resources and technologies have changed*. Information literacy has progressed from simple definition of using reference resources to find information. Multiple literacies, including digital, visual, textual, and technological, have now joined information literacy as crucial skills for this century; g) *The continuing expansion of information demands that all individuals acquire the thinking skills that will enable them to learn on their own*. The amount of information available to our learners necessitates that each individual acquires the skills to select, evaluate, and use information appropriately and effectively; h) *Learning has a social context*. Learning is enhanced by opportunities to share and learn with others. Students need to develop skills in sharing knowledge and learning with others, both in face-to-face situations and through technology; and i) *School libraries are essential to the development of learning skills*. School libraries provide equitable physical and intellectual access to the resources and tools required for learning in a warm, stimulating, and safe environment. School librarians collaborate with others to provide instruction, learning strategies, and practice in using the essential learning skills needed in the 21st century. (AASL, 2007).

Agosto and Hughes-Hassell's (2006a) theoretical model makes sense for combining the developmental needs or "selves" with AASL (2007, 2009a) standards and guidelines for working with learners. New layers of understanding occur when applying their thinking and discoveries to an alternate scenario, with unique participants and a new, digital age school library setting.

Comparisons of perspectives. Comparing the urban teen theoretical model "selves" identified by Agosto and Hughes-Hassell (2006a) with other influences on this study provides a cross-section of different perspectives informing ELIS practices from both theoretical and practical points of view (Table 1). It is also helpful when reading across the comparisons to remember Vygotsky's (1978) recommendation that physical maturation and learning processes might occur in more of an overlapping manner than in a lock-step series of stages, and indeed may occur as functions that are "mutually dependent and interactive" (p. 81). Here, theory is presented with AASL (2007, 2009) documents in order to glean practice implications emerging from theoretical concepts.

Summary

Adolescents are not an often studied group. "Little youth-centered research exists that examines either the basic information seeking behavior of teenagers, or reference and information services for young adults" (Agosto & Hughes-Hassell, 2006a, p. 1394). As Thomas (2004) noted, "Determining the kinds of information students need and want as they go about their daily activities … will assist librarians in designing services and instruction that support student information seeking in a context broad enough to encompass the global aspects of the larger information universe" (p. 184).

This section provided a literature review covering research that impacts adolescent student ELIS practices set within a school library setting, with an

interdisciplinary focus that borrows theory from the fields of LIS, education and psychology. Constructivism is used as a metatheoretical lens for examining research and underlying theories that inform this study. Kuhlthau's (1998, 1993, 1995, 2004, 2005a, 2005b, 2008)influences on the field are detailed, and the major information use models are described. Savolainen's (1995, 2008) ELIS writings and findings are conveyed in detail, as are other ELIS studies that include adolescent and children populations. Particular prominence is placed upon Agosto and Hughes-Hassell's (2005, 2006a, 2006b) urban teen study. An examination of adolescent development theories is provided, with a focus on Havighurst's (1972) adolescent developmental task framework and accompanying ramifications involving social class.

CHAPTER 3

METHODOLOGY

Study Purpose

The purpose of this qualitative case study is to discover how upper income students working in a new, highly technological Midwestern high school library exhibit everyday life information seeking (ELIS) practices within a digital age context. This study is important because today's students are influenced and affected by the emergence of mobile devices even while educational pedagogy has not kept pace with their learning needs. School librarians, working amidst change in educational legislation and funding, need to know how this particular group goes about their everyday life information seeking (ELIS) practices, so that they may provide best practices in daily interactions. AASL (2007) learning standards require that students pursue personal and aesthetic growth, "the motivation to learn on one's own to satisfy internal needs and interests" (AASL, 2009, p. 14). As a leader, school librarians are tasked with guiding students to use information for defined and self-defined purposes (AASL, 2009). The research base for ELIS practices occurring among students working in school libraries is expanded through comparisons with earlier studies and from new findings emerging from this study.

This chapter describes the methodology for this dissertation. Choice of case study methodology and specific data collection methods are discussed in detail, and include nonparticipant observation, individual interviews, focus group interviews, online student surveys, and document analysis in both print and virtual formats.

Philosophical Assumptions for this Study

The methodological approach is the interpretive paradigm (Burrell & Morgan, 1979); it provides a solid foundation for understanding how the social world operates within a subjective existence. This paradigm is nominalist, anti-positivist, voluntarist, and ideographic and "sees the world as an emergent social process created by the individuals concerned" (Burrell & Morgan, 1979, p. 31). This belief system aligns with studying students in their natural setting, in ways that encourage understanding them from their self-reported subjective experiences. Other philosophical assumptions informing study data collection methods are briefly described.

Boulding's image. Boulding's (1956) concept of *image* deals with the way humans form a mental picture of an object or concept, taken from subjective experiences, in order to formulate some type of meaning. Any study of human beings and human behavior must encompass perspectives that play into their own understandings of their existence in time in space, their relationships with those who surround them, their personal self-construction, and how they perceive all of these concepts through affect and value systems.

Berger and Luckmann's social construction of reality. The other seminal school of thought regarding humans and study of human behavior comes from the metatheory of constructivism. Providing description for this belief system is Berger and Luckmann's (1967) social construction of reality theory, wherein people create language, roles, and rules within social experiences, and they define their existence while at the same time replicating and cementing past behaviors according to the expectations and rules of the group among whom they live.

Constructivist metatheory. Per the teachings of Creswell (2009), "Social constructivists hold assumptions that individuals seek understanding of the world in which they live and work. Individuals develop subjective meanings of their experiences – meanings directed toward certain objects or things" (p. 8). More importantly, this metatheory infuses investigators with the responsibility to "recognize that their own backgrounds shape their interpretation, and they position themselves in the research to acknowledge how their interpretation flows from their personal, cultural and historical experiences" (p. 8). This belief means that researchers use open-ended questioning, seek to place the research within the context of the experiences of the participants, and use interpretation to define meaning in an inductive manner.

Study design for this dissertation contains philosophically grounded assumptions regarding the phenomena of study (human information behavior) and methods for its examination. Ontological, epistemological, axiological, and methodological implications mean that this case study methodology applies ideographic, inductive processes of analysis that allow data to emerge, encourages the subjective voices of participants to be heard, and recognizes the researcher's role in the research process.

The Research Questions

The central question for this study is: What are the everyday life information seeking (ELIS) practices exhibited by upper income students working in a highly technological school library setting?

Subquestions include:

1. How do the students in a highly technological school library environment use physical and virtual technologies and other information resources provided by the school library?

2. What are the students' most frequently expressed everyday life information needs topics?
3. What people sources do the students consult when seeking information for non-school purposes when seeking everyday life information in the school library?
4. How do student ELIS practices in this upper income setting compare to urban teen ELIS practices?
5. How do findings from this study affect implications for school librarians administering best practices for working with students?

Case Study Selection

This study focuses on a single-site case study with the goal of providing not only rich description but also explanations that help to answer the research questions. The use of case study methodology affords the research the best opportunity to examine the research topic in a contextual manner. Case study methodology, as described by Lincoln and Guba (1985), allows for emic investigations that uncover respondents' constructions of events or actions. For the purposes of this dissertation, a primary goal was obtaining perceptual knowledge of the participants, expressed in their voices.

Purposive sampling. Purposive sampling is a method where "the inquirer selects individuals and sites for study because they can purposefully inform an understanding of the research problem and central phenomenon in the study" (Creswell, 2009, p. 125). This case study was conducted at a newly constructed, highly technological high school located in the suburbs of a large metropolitan Midwestern city. The school library site is unlike any other in the region. It fills a smaller than typical physical space, and a greater

bulk of budget allocations are spent on virtual resources rather than print materials. It maintains a vivid online virtual presence, and offers its patrons the latest in technology hardware and software. Students at the site are unique in that they have opportunities to experience the interweaving of mobile device ownership, access, and instruction in ways that are not typical of other school libraries in the region.

The researcher's role. Creswell (2009) warned against studying "backyard" participants, such as studying one's friends, neighbors, or co-workers, and because of this caveat, research efforts were focused on a school library not within the researcher's own district of employment.

Required permissions. Permission was sought and obtained from the Emporia State University Institutional Review Board (IRB) for the Treatment of Human Subjects. Additional permissions were also granted from the school district that administers the school chosen for this study. Gatekeepers for this project were the district director of assessment and research, and the head librarian at the school library.

Ethical considerations. A significant consideration for beginning this study involved potential ethical issues that could arise while collecting and analyzing data. None of the student participants were identified by names or in other ways that would make them recognizable. Efforts were made to not intrude upon instructional time; the head librarian provided potential dates for completing school librarian interviews and student focus group sessions. Inherent to gaining the required consent were implied codes of professional ethics, such as the Ethical Principles in the Conduct of Research with Human Participants document by the Committee on Protection of Human Participants in Research of the American Psychological Association (1982). Specific actions regarding

ethical treatment of participants are outlined below for each applicable data collection method.

Data Collection Procedures

This section describes four procedural areas that informed data collection procedures, identification of the study site, including the setting, the actors, the events, and the process.

The study site. The highly technological high school is a newly-constructed school (completed during 2010), located in a suburban area within a larger metropolitan Midwestern city. It is geographically bounded by five neighboring school districts. The school county has approximately a half million residents ("Johnson County Data"), and population ethnicities include nearly 86% White, approximately 3% Asian American, 4% African American, nearly 6% Hispanic, and less than 1% Native American.

Study site city, state and U.S. demographic data. The study city site had approximately 170,000 residents when the 2009 U.S. Census Bureau data was collected, with slightly more female than male residents. There were 87.4% White residents in the city in 2009, with an additional 5.5% Asian American, 4.2% Hispanic, and 3.2% African American (Table 2). All other racial categories comprised less than 1% each. For comparative purposes, in 2009 the state in which the city is located had 2.8 million residents (U.S. Census Bureau, 2011). Ethnicities were 88.5% White, 9.3% Hispanic, 6.2% African American, and 2.3% Asian American. The United States, for the same time frame, had a population of 301.4 million residents. Ethnicities in similar categories were listed as 74.5% White, 15.1% Hispanic, 13.2% African American, and 4.4% Asian American. Comparatively, the study site city had a higher degree of White residents than the nation, but less Hispanic, African American and Asian American representation.

Study site, city, state, and U.S. educational attainment data. In 2009, of the families who lived in the city in which the study site is situated, residents had high educational attainment (Table 3). More than 35% earned bachelor's degrees, and nearly 20% attained a graduate or professional degree (U.S. Census Bureau, 2011). Approximately 96% of residents held at least a high school degree, during the same time frame (U.S. Census Bureau, 2011). The dropout rate for 2008-2009 was 0.3% (Kansas State Department of Education, 2009). In comparison, for Kansas state residents in 2009, 19% held a bachelor's degree, and nearly 10% held a graduate or professional degree. Some 86% of state residents earned high school degrees. The dropout rate for 2006-2007 was just under 2% (Kansas State Department of Education, 2009). For a national comparison for the same time frame, just over 27% of U.S. residents earned a bachelor's degree, and slightly more than 10% held a graduate or professional degree (U.S. Census Bureau, 2011). High school graduates totaled nearly 85%. The dropout rate for 2008 was 8% (U.S. Department of Education Institute of Education Sciences, 2010).

City, state, and U.S. socioeconomic data. The city site median household income in 2009 was $71,401 annually, and the mean household income was just over $93,000 annually (Table 4). Of all families surveyed, approximately 3% earned income below the poverty level (U.S. Census Bureau, 2011). Suburban teens attending the study site high school were bused in from affluent homes in the surrounding area, dropped off at school by parents who drive there, or drove themselves in their own vehicles. Before collecting data at the school site, an inspection of properties within the school boundary lines found mostly two-story homes on large lots (1/2 acre or larger), developed in several similar neighborhoods. A few housing communities in the area are gated properties, with larger homes placed on more substantial acreage sites. Nearly all of these homes were newly

constructed, or in the processes of ongoing building. Some homes had private swimming pools (nearly all of these neighborhoods also appeared to offer community swimming pools), and others had separate carriages houses with attached living quarters above the garage sections – providing configurations between the homes and carriage houses for storing six vehicles per home site. Approximately 33% of all homeowners lived in homes valued between $200,000 and $299,000 during 2009. Nearly 20.7% of homes were valued between $300,000 and $499,000, and 5% of homes were valued between $500,000 and $999,000 (U.S. Census Bureau, 2011); combined, these figures indicate that more than half of all home owners living in the study site city lived in homes valued from $200,000 to $999,000.

For comparison, the study state median household income in 2009 was just over $48,000 and the mean income was $63,619. Some 8.3% of Kansans residents lived below the poverty level (U.S. Census Bureau, 2011). Thirteen percent of residents lived in homes valued between $200,000 and $299,000, and an additional 6% live in homes valued between $300,000 and $399,000. At a national level, the median household income in 2009 was $50,046, and the mean household income was just over $68,000. Just over 11% of U.S. residents lived below the poverty level, and only 18% of residents lived in homes values between $200,000 and $299,000, with an additional 15% in homes valued between $300,000 to $499,000 (U.S. Census Bureau, 2011).

Study site, study state, and U.S. free and reduced lunch data. At the study site during the time frame for this study, 4.53% of students were eligible for free or reduced lunches (Kansas State Department of Education, 2011). Study site state data shows that 38.3% of students were eligible for free or reduced lunches (National Center for Education Statistics, 2012). Across the United States, 43.9% of students were eligible for

the same federal program (National Center for Education Statistics, 2012). The population for the study site is comprised of more than 95% of students whose families are not economically disadvantaged, using free and reduced lunch status to define "economically disadvantaged."

Overview of study site data. The study site city was inhabited by mostly White (nearly 90%), educated residents, the bulk of who earned more than $75,000 or more per year, and who lived in homes with an average value of between $200,000 and $499,999. Informants in the Agosto and Hughes-Hassell (2005, 2006a, 2006b) urban teen study comprised a very different group than the one described for this study; their participants included 25 African Americans, one Asian American, and one White. As Agosto and Hughes-Hassell (2006a) noted, "Many inner-city teens face a harsh reality of poverty, prejudice, and a lack of strong role models, making this process [growing up] even more difficult than for teens living in more advantaged situations" (p. 1394). Their participants lived in inner-city communities and represented the lower socioeconomic categories.

Study school enrollment. Enrollment data begin to paint a portrait of the students who attend this school. Total attendance during the study time frame was 839 students, with 250 enrolled in 9th grade, 234 enrolled in 10th grade, 248 enrolled in 11th grade, and 107 enrolled in 12th grade. Fifty-eight percent of students were male, and 49% were female. ("KS K-12 Reports," 2010). Student ethnicities were 89.5% White, 4.9% Other (which includes Asian, Native American, and Pacific Islander), 3.3% Hispanic, and 2.3% African American.

The school in detail. The highly technological school is the fifth high school built in the district, and opened in August 2010. Capacity for the school is 1,600 students; it contains 300,000 square feet located on 113 acres, and nearby, a highly technological

middle school opened in 2011. The school is described as being "green" and has been featured in an *American School Board Journal* article, with an explanation of what this label entails: energy efficiency, water efficiency, and indoor air quality. "Reducing the amount of energy consumed by a facility preserves the environment while also reducing operating costs over a building's life cycle. "Along these lines, green building offers an opportunity to optimize the indoor environment by using daylight as the primary source of illumination" (Crum & Turckes, 2007, p. 3).

The school library in detail. The school library at the high school provides a perfect example of these environmentally-driven goals – 25 soaring windows, arranged in increasing height, let in a great deal of light during the daytime. Installed lighting is mostly used when storms are visible and clouds darken the natural light entering the library. Heating systems are located underneath a subfloor (thermal displacement ventilation), and built-in blinds allow librarians to monitor and adjust the amount of light (and heat) entering the physical spaces.

Striated carpet squares in varying tones of beige offer an easy way to replace flooring sections as needed, which is important because students are allowed to drink beverages and consume food in the library. Sleek furniture looks modern, and yet also timeless. Conversational areas invite relaxation with comfortable and inviting sofas, loveseats, and club chairs. Work areas with attractive hardwood tables and cushioned seats are plentiful, and two rooms off of the library provide additional work space for a digital-editing lab and a conference room for meetings. A large red brick accent wall coexists with the exposed beams and ductwork, which are painted white and add to the overall modern appearance of the setting. Students feel welcome in the library, and use it

accordingly. It was not unusual to see them sitting sideways on the loveseats, while they visited with friends or read magazines.

Signage is prevalent, and the library's web page URL is displayed in several areas. Stations are located in the library to encourage students to place appropriate materials into bins for recycling. The library faces a landscaped, terraced courtyard where students may eat lunch or attend Socratic seminars. Comfortable benches provide seating areas for times when the weather is pleasant.

Physical areas typically occupied by students and the librarians, such as the stacks, seating areas, circulation desk, and instructional area comprise approximately 7,600 square feet in a trapezoid configuration. National and state guidelines for optimal space provisions for high school libraries vary between approximately 10,000 and 12,000 square feet ("Building Libraries," 2010; Division of Program, 2003; "Information Access, 2006; "School Library," 2008). This library, with just over 7,500 square feet, was constructed with a smaller physical footprint.

Housed in the library are 36 desktop Windows computers, seven Apple Macintosh (Mac) desktop computers, two laptop computers, a scanner, three printers, and a photocopier. There are 45 total computers available for student use. Per the 2000 Children's Internet Protection Act (Federal Communications Commission, 2012), filtering and monitoring programs are required elements of compliance with federally-provided funding for school libraries. Two 52-inch flat-screen television monitors are mounted high on the walls, and stream CNN throughout the day without sound. Work chairs at the long tables where the main desktop Windows computers are located are rocker-style and are upholstered.

The print collection for the library is smaller than other libraries with similar school enrollment figures. There are approximately 1,500 fiction books and 850 non-fiction books housed on the shelves. The virtual reference online subscription databases are extensive, however, and include a large eBook collection through Cengage Gale, totaling more than 5,000 full-text titles with coverage in 18 subject areas. Subscription database products include ABC-CLIO, Britannica, CultureGrams, United Streaming, Facts on File, SIRS Researcher as well as others. Students may access databases from school or home locations.

The school library is staffed by two full time, certified school librarians, two full time paraprofessional staff, and one full time technology specialist. The technology specialist works in an office located off of the library workroom, and is readily available for consultation with other library staff members, as well as other school employees.

Intellectual school goals. School administration also advocates the "green" theme devised by architects, and display it as a learning concept in the school mission statement, which is "To produce leaders and thinkers who positively impact the world" ("General Information," 2010, p. 1). Learning goals state "We will: preserve and protect; challenge learning through rigor; lead and connect" ("General Information," 2010, p. 1). School information provided to the public lists the following efforts to aid student achievement: a) Teachers committed to making connections with students to promote personal and academic growth; b) Advisory program with grades 9-12 to create small learning communities; c) Dedicated academic support time built in each week to promote student engagement in the tutorial learning model; d) Wide variety of course offerings including Advanced Placement classes; e) Commitment to college readiness including reading and writing across the curriculum (critical reading strategies, writing with

purpose, writing to learn) and note-taking strategies; f) Commitment to a wide array of performing and fine arts, athletics, and activities to engage and inspire students; and g) Teachers committed to data analysis to inform instructional decision making ("General Information," 2010).

Study site school achievement. In 2012, the study site school was named as one of America's Top 1,000 Public High Schools (Blue Valley Schools, 2011). During the academic year for the study (2010-2011), the newly constructed school was exempt from adequate yearly progress (AYP) requirements as mandated by No Child Left Behind (NCLB) legislation (U.S. Department of Education, 2010). The following year (2011-2012), the school made AYP, with 100% of students achieving the reading goal (and 95.8% testing as proficient or better), and 100% of students achieving the math goal (96% tested proficient or better). Data on ACT scores for students graduating in 2011 show that the district students achieved the second highest composite score in district history - 24.8; the state composite score for the same time frame was 22, and the national average was 21.1 (Blue Valley Schools, 2011). Six students from the school received National Merit commendation after taking the PSAT during the 2010-2011 school year; the award indicates that they rank in the top 5% of their class.

Virtual school library setting. The high school library also maintains a robust virtual presence through an online library web site and social networking sites including Facebook, Google Docs, Flickr, YouTube, Delicious, Meebo, Library Thing, and Twitter. Feedburner really simple syndication (RSS) services allow students and others to easily receive updates about changes to the main web content on the library's home page.

LibGuides, which are specified pathfinder template pages linked to assignments developed in collaboration with teaching staff, are created by school librarians using a

template design. A monthly poll is provided on the library's main site, more as a way to model how to use free online polling software, such as Poll Daddy (www.polldaddy.com), than to scientifically ascertain information needs. The December 2010 poll, for example, asked students to name their favorite fast food restaurants. The March, 2011 poll focused on students' Spring Break plans. Students have the ability to vote in the poll, and to immediately see poll results. The polls, however, are not controlled instruments designed to count only one vote or entry per person. School Librarian A (the head librarian) created a mobile phone application (app) for the library that provides students with direct access to resources via their smartphones. Database access codes and passwords are provided on an information sheet placed at each computer in the library.

The Study Actors

Two school librarians participated in the study. A potential pool of 42 student participants was provided through the school's weekly Advisory Class (an extra opportunity to learn time provided where students are assigned to specific teachers, including school librarians, for enrichment and ongoing additional instruction). Advisory Classes meet once a week for approximately 40 minutes (every Thursday). Instructionally-focused activities during this time include team building, test-taking strategies, game playing, and community service events. One librarian instructs 21 students in the Advisory class; the other instructs 21 students (total 35 students), and the group includes a mix of students in grades 9-12.

The Study Events

This case study did not attempt to examine one specific event occurring in time. Rather, the everyday flow of school library usage and interactions between librarians and

students were examined for the purpose of exploring the ELIS practices, occurring during the standard school day (8:00 a.m. to 3:00 p.m.), Mondays through Fridays when school was in session. Some observation sessions captured similar occurrences happening before school (7:30 a.m. to 8:00 a.m.) and after school (3:00 p.m. to 3:45 p.m.).

Data Collection Methods

Following the teachings of Creswell (2007, 2009), five types of data collection, including nonparticipant observations, interviews, focus groups, online student survey, and documentation, were employed. Results from different methods of data collection enabled triangulation (Denzin, 1978), which is the use of more than one method to assure validity of information gathered. Triangulation will be discussed more thoroughly later in this chapter.

Nonparticipant Observation

Nonparticipant observation is one method used for gathering data for this study, and constitutes a form of field work. Creswell (2007) recommended determining the role of the observer. For the purposes of this study, the observation role was one of "complete observer, one who observes without participating with those in the study" (Creswell, 2007, p. 179-180). This method was used to view the general comings and goings in the physical setting, and to see and listen to interactions between and among students and staff.

Observation protocols. Seven observation sessions were completed during the final semester of school (March-June 2010), with each session lasting approximately six to seven hours, for a total of 47 hours. Scheduled observation dates were chosen to coincide with non-testing dates so that annual district, state, and national assessments did

not intrude upon the typical schedule of events unfolding in the library. Observation notes yielded 68 transcribed pages of typed data.

Based on Creswell (2007, 2009), observation was approached with an aim toward viewing and understanding daily events unfolding in the library. During observation sessions, the study research questions were ever present as events and actions unfolded. Students were observed to determine their ELIS practices, their use of physical and virtual technologies, their expressed everyday life information topics, who they consulted when searching for and encountering those topics, and how this population compared to the urban teens.

Wildemuth (2009) described continuous monitoring as a type of observation with attendant protocols. Because this study occurred in a public school environment, note taking was chosen as the least intrusive way to gather information. If students knew they were being videotaped, it is possible that their actions could change in subtle or even overt ways that impact that gathering of data that reflect what is truly occurring. Writing running notes allow for instant, detailed descriptions of events as they unfolded.

Observation protocol included using two-column note taking procedures, with notation of approximate time as events and conversations unfolded (Appendix A). Frequent counts of students working in the library aided in creation of contextual maps that included gender and ethnicities of students, as well as details about their actions during points in time. Observations conducted by the researcher occurred at one of the library computers, and occasionally in the soft seating section near the computers. At other times, walking around the library spaces with a clipboard afforded note-taking, using the same protocols as outlined above. Some notes were taken using a library computer, particularly after initial impressions were recorded and saturated.

Observation as an evolving process. The initial goal for conducting observations in the library was to gain a general, informed picture of what occurred there, and to later hone in on ongoing needs for observation as they became evident. This movement from generalized, unspecified observation protocol to one that is more focused allowed development of rich description (Lincoln & Guba, 1985), helping to inform case study data collection and analysis. It is also understood that elements of observation occurred when student focus group sessions and librarian interviews took place, and that in this mode observer roles varied from that of complete observer to participant observer (students were aware that an adult was observing their actions during focus group sessions). Creswell (2009) stated that this is a potential weakness of observation: the researcher may be seen as obtrusive. However, because of past experiences conducting both observations and interviews, acknowledgement of the researcher as an observer was minimal.

School Librarians' Interviews

School librarian interviews (see Appendix B for a copy of interview guide) were conducted after consent forms (Appendix C) were completed. A total of 10 questions were asked, and librarians were given as much time as they wanted to answer questions and to provide additional details. A single interview with School Librarian A lasted 38 minutes and was conducted at a nearby public library and yielded 21 pages of transcribed pages; she was on maternity leave and preferred this site as it was closer to home. A single interview with School Librarian B lasted 40 minutes, and occurred in the school library office, resulting in 22 pages of transcribed data. Total school librarian interview time was 78 minutes, resulting in 43 pages of transcribed data.

Interviewing provided additional elements not uncovered by observation, and sought to determine the perspectives of the interviewees. One-on-one interviews with each of the librarians at the high school helped inform understanding about the suburban teen ELIS practices (as observed by the librarians), how librarians provide instruction in this particular school setting, and how students use library resources. Speaking with them in a conversational, semi-structured manner encouraged them to express their personal perspectives. Current experience as a school librarian lent a sense of familiarity to the interviewer role in questioning them.

School librarians' interview protocols. Ten interview questions (Appendix B) were informed by Agosto and Hughes-Hassell's urban teen study (2006a, 2006b) research questions, and recommendations from dissertation committee members; storytelling was encouraged when possible through the use of specific question prompts. Interview notes included a header, information about the interview session, and data notes, as well as initial impressions (what Lincoln and Guba (1985) described as being influenced by tacit knowledge). Creswell (2007) called these "reflective notes." A digital audio-recording device was used to record the interviews, and a local, professional, and secure service was employed for creation of text transcriptions of interview data.

Interview schedule. Interview times were slated for approximately an hour and a half, after school hours, and were held during the second semester (March – June, 2011). The interview with Librarian B was rescheduled because of an absence; it occurred during the school day, at a time when the library was not being used and library paraprofessionals managed student traffic. The interview with School Librarian B was occasionally interrupted by paraprofessionals asking her for help, bells signaling the time to change classes, and an impromptu visit by one of the school administrators.

Study purpose for school librarians' interviews. When interviewing the school librarians face-to-face, the study and purpose were described by the researcher as thus: "This study is being completed here because this school library is unique. I am especially interested in how you work with your students. I want to learn more about the types of information your students are looking for when they are in your school library, as well as how you meet the needs of students in both physical and virtual settings. A school site such as this has not been formally studied yet, and what I learn will impact the current research base existing for school libraries. It will also help me and other researchers to determine what other areas might be studied regarding today's students. This study will also probably have practical implications for how school librarians might interact with students."

School librarian interviews overview. Both of the participants were relaxed and eager to discuss their interpretations of students and their library use. Because they were interviewed during the last semester of the school year, this was an ideal time for capturing their thoughts and perceptions concerning events that unfolded throughout the year the school and the school library were opened. When the librarians were contacted after their interviews and asked to verify that the transcripts reflected their statement intentions, they suggested very few changes. Some modifications were made to transcribed text by the researcher in order to correct unfamiliar words relating to technology and online subscription databases.

The school librarians who informed this study have varying levels of experience in the field. School Librarian A is the lead librarian and has worked at two other school libraries in the same district for more than 10 years, and previously opened two new school libraries. School Librarian B worked for one year previously in the district, and

has an additional two years of experience in a neighboring school district. The librarians were assisted by two full time paraprofessional staff, and a full time technology teacher located close to the school library.

Student Focus Group Sessions

Each student focus group session was held in a small conference room attached to the school library. Focus group session questions (Appendix D) were shared after consent (Appendix E) was obtained. A total of 27 students were interviewed, with 15 females and 12 males, aged 14 through 19. Participants were enrolled in grades nine through 12. Ethnicity was White, with the exception of three Asian American students. Total focus group session time was 80 minutes and 47 seconds, yielding 71 pages of transcribed data. Agosto and Hughes-Hassell (2005) used semi-structured interviews with the urban teens they studied. The students in their study (2005, 2006a, 2006b) volunteered to participate; students in this study were also volunteer participants. None of the Advisory Class students declined to be a part of the planned focus group sessions; it is possible that some students may have opted out had they not been absent for reasons mentioned above.

A library paraprofessional took notes during the sessions; she sat in a corner and did not participate in the discussion. Focus group questions were informed by the same questions asked in the urban teen study, with necessary changes made to reflect the different setting and population.

Student focus group session protocols. Krueger and Casey (2000) provided recommendations for investigators working with children or young people, including careful use of a moderator, keeping the age range of participants within a small range, asking age-appropriate questions, having an awareness of age-related behaviors, using a shortened length for the interview, using food, and finding a friendly location. Krathwohl

(1998) recommended that groups remain small (7-10 persons) and that they are somewhat homogeneous, noting that too much "diversity causes some persons to withdraw" (p. 295). For the purposes of this study, the school population (as described in the study setting data provided earlier in this chapter) is somewhat homogeneous, and because students have been attending the Advisory Class meetings during the first semester of school, a sense of familiarity among group members already existed. It is important to note that not every student attended every Advisory Class session for reasons such as absences, participation in other school events, and because the school attendance policy was flexible.

Protocols for conducting the focus group sessions included two-column note taking, with informative headers. An additional section of the note paper was used for recording initial hunches and feelings about answers being provided; as it turned out, however, initial impressions were recorded later in the day after the focus group sessions. Creating these "first impression" memos enabled linking interview data with emergent themes. A digital audio-recording device was used, and a local, professional, and secure transcription service created a typeset transcript of each focus group session.

The school library was an ideal place for conducting focus group interviews. Participants were already familiar with the library setting and staff. As a moderator, it was important to avoid appearing to be controlling or in a position of power, and instead functioned as an adult who could "ask questions, listen, keep the conversation on track, and make sure everyone has a chance to share" (Krueger & Casey, 2000, p. 9). Additionally, question prompts were used to encourage reflective storytelling by students, which in turn spurred similar and/or unique sharing from other group participants.

Simple snacks were provided to focus group participants after obtaining

permission from the school librarians. Food included individual, prepackaged cookies, crackers, and candy, and did not inhibit conversational ability or flow, and which did not cause undue focus on the eating process. During the first student focus group session, none of the prepackaged snacks were consumed; in later sessions the students were appreciative of the snacks and consumed nearly all of them.

Study purpose for student focus group sessions. When describing the study to the students in the focus group interviews, participants were told by the researcher: "I am conducting a study to find out more information about how your information needs are being met in your school library. Your input helps me to learn more about how your personal information needs are being met here. A study like this helps researchers like me to find out how we can provide best practices or services to students. It also helps us understand what types of information people your age seek out. This topic has not been studied in such a unique setting before – your new school library. Your input will help to increase what we know and also lead us in the direction of what we need to find out in future studies."

Student focus group sessions overview. Each student focus group session is briefly described.

Group 1. The first student focus group session included six students: two White males, two White females, and two Asian American females. All of the students in this group were seniors. The first session began at 1:45 p.m. and lasted 29 minutes and 21 seconds and yielded 23 pages of transcribed data. This group was pleasant and willing to speak; however, they did not readily identify ELIS practices they might have conducted. While keeping to the pre-determined session questions, conversation was also allowed to move in the direction of some brief asides concerning developing school policies. None

of the group members consumed any of the provided snacks. This group constituted a very busy, motivated set of senior students who had already begun to emotionally "leave" high school; they were more absorbed in discussing upcoming events (prom, Advanced Placement (AP) exams, graduation, summer, and leaving for college) than on recalling their personal information seeking activities. They were aware that there was a library paraprofessional in the room taking notes, but did not engage her or include her in our conversation.

Group 2. The second student focus group session included nine students: six White males, and three White females. This group was comprised of five freshman, and four sophomores. The second session began at 1:32 p.m. and lasted 16 minutes and 48 seconds and yielded 16 pages of transcribed data. This group was more outspoken about their ELIS practices, and were particularly verbal about filtering and monitoring concerns. Two of the males tended to dominate conversation, and ongoing modification of moderator body language and questioning aided in including participation from all group members. Session length was affected by a requirement that students view a school-produced broadcast program before the focus group began; the program lasted longer than school librarians had anticipated when scheduling time for the session.

Group 3. The third student focus group session included seven students: two White males, one Asian American male, and four White females. This group was comprised of two juniors and five sophomores. This session began at 1:30 p.m. and lasted 13 minutes and 9 seconds and yielded 13 pages of transcribed data. This session was delayed by a school event occurring in the gym; earlier planned scheduling did not account for this schedule change. This group proved to be extremely helpful and pleasant,

and engaged in the topics being discussed. Most group members spoke frequently, and it was necessary to attempt to draw out just one quiet female participant.

Group 4. The fourth student focus group session included five students: one White male, and four White females. This group was comprised of one junior and four freshmen. This session began at 1:25 p.m. and lasted 20 minutes and 58 seconds and yielded 19 pages of transcribed data. Initial concerns that the lone male student might be overshadowed by the female students proved to not be a problem. All students were comfortable speaking about their ELIS practices, even though they did not readily identify them as such, and also expressed not only knowledge of but anger towards the school district's use of filtering software. While this group said they knew a lot about devices, they were not fully educated regarding how device software (such as eBooks for Kindle devices) functioned. This session time was cut shorter than planned when School Librarian B tapped on the conference room window and asked for focus group members to come back into the library for a closing activity for Advisory Class. Information for all student participants is provided (Table 5).

Online Student Edmodo Surveys

Students were asked to share information through five online survey polls (Appendices F, G, H, I and J). In order not to intrude on planned Advisory Class instruction or events, these brief, checklist-style polls were posted online through Edmodo (http://www.edmodo.com), a secure educational site developed as a social networking tool for teachers to mutually share online information, assignments, photos, videos, and other types of information. Librarians were instructed to administer the poll sessions during Advisory Class, and they were provided with instructions (Appendix K) for helping students create Edmodo accounts. With assistance from the librarians, and

after obtaining permission and informed consent (Appendix L), students enrolled in the study Edmodo "class" online, and answered checklist-style polls. The online surveys were administered in order to gain more access to the student voices, opinions, and facts in a way that did not intrude on instructional time. Creswell (2007) encouraged researchers to "design qualitative projects to include new and creative data collection methods that will encourage readers and editors to examine their studies" (p. 129).

There were 42 total students listed on the class rosters for the Advisory Classes (21 per librarian). Each date that surveys were administered, the number of students who were present and available for completing them varied, according to daily attendance and choices to attend other school events (Table 6).

Edmodo class polls protocols. Librarians were responsible for instructing students how to set up Edmodo accounts, and for administering the five poll sessions time. Google Docs Forms were used to create the polls, and are useful for this type of data gathering because student answers are immediately converted to a spreadsheet format, allowing for tabulation of results. The Edmodo polling sessions included questions aligning with the combined urban teen study typology sections developed by Agosto and Hughes-Hassell (2005). Those questions, which were also incorporated into the subquestions for this study, were: 1) What types of information do upper income students in the study setting seek in their everyday life; 2) What information media do the participants in this study prefer; and 3) What people sources do the informants favor when exhibiting ELIS practices?

Because a date/time stamp was created every time a student answered an Edmodo poll, and polls were removed from the site the same day they were completed, repeat poll taking was not a possibility. Confidentiality was maintained throughout these sessions.

When the five polling sessions were complete and data were collected, the account was dismantled. Students were not identifiable by age, gender, or grade. Librarians administering poll sessions were instructed to speak with students about answering questions with honesty and integrity before they accessed each polling session.

Edmodo class polls overview. Five polls were administered by school librarians to students on five different dates between March and June 2010. Eighty-five total respondents provided answers to the brief polls, which yielded 10 pages of transcribed data. Librarian A was absent for the last three polls because she was on maternity leave. A substitute librarian (identified here as School Librarian Sub) instead helped School Librarian B with the polling process. One poll, "What I Look For," had a low number of participants (seven) because students were given the opportunity to attend an alternate program that day during their Advisory Class. Two polls had 10 respondents each; these included "Who are Your Go-To People?" and the other covered aspects of the school library web site and accompanying virtual programs. The other two polls, "Tech Use," and "Media in Your Life," were answered by 29 respondents each. The total number of students was not counted by the school librarians responsible for asking students to take the online surveys. Because of this, the return rate for each survey the researcher was unable to determine a return rate.

Documentation – Print and Virtual

Evidence gathered from the library study site included documentation in both print and virtual formats.

Print documents. Sixteen forms of print documentation evidence were gathered, including a state department of education article about the school, district news magazines and press releases, a local newspaper article about the district, school

newspapers, a student planner, the school bell schedule, library class schedule, and the library database access information sheet. Documents such as these provide details that help describe the school library existence within a newly constructed school placed within the district culture. All forms of print data were readily available for public consumption.

Sixty-four photographs were taken, using a Canon PowerShot SD600 digital camera, to create contextual maps. Included were photographs taken of the surrounding school neighborhoods to help inform understanding of the study site. Photographs were not taken to be used in analysis; rather, they were used to help the researcher recall details, to write rich description of the study setting, and to provide visuals for presentation of study findings. Other photos examined for context include those posted on the school library Flickr site. They showcase the school library in various construction stages, and also highlight student works, and library displays. Maps created during observation sessions detailed where students sat while working or relaxing, and positions of the library staff as they moved about the setting to assist students and complete tasks. A map (Figure 2) of the school library, created from photographs, notes, and memory, is provided.

Virtual documents. The method used for examining the school library's virtual presence was observation of the school library website, and the accompanying social networking sites described earlier (Facebook, Flickr, Twitter, Google Docs, YouTube, and Viddler). LibGuides, provided through the home page, were examined. Statistics detailing page visit counts were collected. Students were not readily identifiable in online photos, so it was not necessary to obtain informed consent for this method of data collection.

Validity and Reliability (Credibility)

As methodology was developed for this study, the following questions were considered: when data are finished being analyzed, will the data truly represent the situation being studied? Did data gathering methods employed actually link up with the questions that drove information finding? Glaser and Strauss (1967) recommended the steps for establishing credibility in lieu of standardized representations of validity and reliability. Corbin and Strauss (2008) called these questions of quality. In an effort to establish credibility, Creswell's eight validation strategies (2007) were adhered to, providing extensive self-checking for a minimum of two strategies to assure validity.

Generalizability. Generalizability was not a goal for this study, a fact alluded to in earlier discussion about the purposive sampling method chosen. In their examination of urban teen ELIS behaviors, Agosto and Hughes-Hassell (2006a) noted that one limitation of their study was that the results, because they were based on a small, unique population, are not generalizable. They referred to Lincoln and Guba's (1985) notion of "transferability" instead, which suggests that inferences about homogeneous populations may be made, and that generalizations are not necessarily the expectation for qualitative studies. This study was designed to shed light on one distinct population's ELIS practices.

Substantive validation. Creswell (2007) addressed ethical validation, which "means that all research agendas must question their underlying moral assumptions, their political and ethical implications, and the equitable treatment of diverse voices" (p. 205) and contrasts it with *substantive validation*, which "means understanding one's own understandings of the topic, understandings derived from the other sources, and the documentation of this process in the written study" (p. 206). Creswell's (2007)

explanation of substantive validation resonates with professional experience and an existing understanding of school libraries and also of adolescent students, and efforts were made to carefully (and with as little bias as possible, knowing that total removal of biases would be impossible for any human) and thoroughly share the perceptions of informants in the findings section of this paper.

Validity guidelines. Writers associated with qualitative inquiry have provided blueprints or guidelines for assuring that quality and credibility, or validity and reliability, occur in ways that make data analysis believable and also meaningful (Creswell, 2009; Krathwohl, 1998). Beck and Manuel (2008) discussed *internal validity*, where the concern is on the accuracy of "information collected and analyzed and how well it matches up with reality" (p. 103). Triangulation was used to assure that internal validity occurred.

Triangulation. Lincoln and Guba (1985) used the imagery of fishing nets to describe data triangulation, meaning that when nets have rips or holes, valuable fish (or data) may be lost. When multiple nets are used, it is more likely that the greater amounts of relevant data will be captured. Triangulation in this study was achieved through comparison of data provided from the school librarian interviews and student focus group sessions. Further comparisons emerge from data garnered from online polling, observation, and print and virtual documentation.

In keeping with Creswell's (2007) earlier statements about substantive validity, the researcher interjected herself into the triangulation process; relied on hunches and past experiences as tools for validation, and carefully and thoroughly examined data gathered from multiple sources and methods. Member checks with the school librarians

following their interviews were completed to ascertain correct understanding of the answers and comments communicated during interviews.

Reliability

In order for study results to be credible, it is important to establish elements of reliability that show the data gathering and later analysis are conducted accurately and thoroughly. One major concern with reliability occurs when a single observer is the source of data, because elements of subjectivity and bias may creep into the impressions formed during the observation, or even during the later analysis (Babbie, 2004). Creswell (2009) recommended the use of the following strategies as reliability checks during the study: 1) Check transcripts for mistakes made during transcription; 2) Make sure there is not a drift in the definition of codes, or a shift in the meaning of codes; and 3) Cross-check codes that are developed by other researchers by comparing results. The use of intercoder agreement (also known as cross checking), wherein another researcher examines the codes used for agreement, is another way to establish reliability for a study.

Transcriptions afforded careful checking to see if initial impressions from the interviews and focus group sessions were consistent with what was actually said. Additionally, the written transcriptions provided another way of cross checking data gathered from the full-day observation sessions.

The urban teen study and reliability. Because this study builds on the urban teen study conducted by Agosto and Hassell-Hughes (2005, 2006a, 2006b), the Edmodo Advisory class polls were created to align with similar survey questions used by the authors. For example, in the confirmed typology Agosto and Hughes-Hassell created with their informants, they determined categories of people whom the urban teens sought out when meeting ELIS needs. Those same categories were listed in the "Who are your go-to

people?" poll created, with slight modification. Additional categories were created for the media sources poll and in some cases original media types (computers) were broken down into more detailed types of computers: laptop computers, desktop computers, and netbook computers. Agosto and Hughes-Hassell's category of "personal communication systems" was modified, and became "texting." The category of "printed ephemera" was also modified because it was thought that informants might be confused by this terminology. Aligning poll questions with the combined typology, shared by Agosto and Hughes-Hassell, meant that efforts were undertaken to make the investigation and study instruments reliable.

The validity/reliability trade off in qualitative studies. Corbin and Strauss (2008) questioned the use of the words "validity" and "reliability" and preferred instead to frame study methodology in terms of "credibility." Lincoln and Guba (1985) suggested that with qualitative studies and naturalistic investigation, the investigator should be aware of the need for *dependability* – "the naturalist seeks means for taking in to account both factors of stability and factors of phenomenal or design induced change. It can be argued that this naturalist view is broader than the conventional, since it accounts for everything that is normally included in the concept of reliability…" (p. 299).

Validity and reliability and this study. From readings on constructivist metatheory, and validity and reliability, it was known that informants do not act in predetermined ways that would assure similar actions for every observation and interview. As discussed in Chapter 2, the social construction of reality (Berger & Luckmann, 1967) belief system accepts that human behavior is often changing, elusive, and affected by social relationships. The student informants provided compelling answers and data, and it was anticipated by the researcher that they might have been affected by a

number of potential variables on that day (e.g. their mood, the weather, their physical comfort, which friends attended school with them or were absent, earlier interactions with family members, peers, and teachers, the pressures they feel for completing other assignments, and/or their relationships with one another). In short, they are human. To assure reliability, data gathering and analysis coinciding with previously described methods were used, and continual checking for personal biases and subjectivity occurred; capturing informants' data from their perspective was the goal for this study.

Study Limitations

A limitation of this single case study is that is does not provide a wide view across several technologically modern school sites, numerous librarians or a racial diversity of students. It was conducted during a finite point in time frame, with limitations on the amount of hours available for data collection. The suburban teens studied represent a homogenous group and did not comprise a diverse pool of participants. There were just two librarians at the school, so data they provided may contain elements of bias from their working closely together. The study site was a brand new school, and policies were still being developed, implemented, and assessed. It is possible that because students and teachers were still establishing routines, their daily interactions had not become permanent fixtures that truly represent the workings of a school culture.

As the study was completed, recognition of another potential source of data became apparent; the two paraprofessionals who worked the circulation desk in the school library. These library assistants were tasked with monitoring all computer usage in the library. Both employees are in a physical position to hear many conversations among students, and to be able to see computer monitors. They may have provided helpful responses to round out data collection.

Another limitation for this study is that the total number of students completing the online surveys was not known by the researcher; school librarians were given the responsibility for administering the polls. Return rates are not available because of this.

This study would be challenging to replicate in a similar setting with similar participants. At the same exact school site, for example, change has been occurring since the study was completed. A different library staff now administers the school library program, the school population has increased, and policies have undergone evaluation and revision since the study was completed. Glaser and Strauss (1967) alluded to changing sociological situations as a fact of life that may impact achievement of rigor in a study.

Summary

This section covers methodology for this dissertation. It includes five data collection methods designed to align with the research questions, as well as qualitative philosophical underpinnings that provide guidance for developing ideas. Efforts have been made to create a well-rounded data collection methodology, with multiple and creative methods, that not only informs but builds on established theory. Issues surrounding validity and reliability are examined and placed within the framework of this study, and study limitations are discussed.

CHAPTER 4

FINDINGS AND ANALYSIS

Introduction to Study Findings

Findings for this dissertation are provided in this chapter, and are presented in the same order as for data collection methods in the Methodology section. The central research question was: What are the ELIS practices exhibited by upper income students working in a highly technological high school? The subquestions were: 1. How do students in a highly technological school library environment use physical and virtual technologies and other information resources provided by the school library; 2. What are the students' most frequently expressed everyday life information needs topics; 3. What people sources do the students consult when seeking information for non-school purposes when seeking everyday life information in the school library; 4. How do student ELIS practices in this upper income setting compare to the urban teen ELIS practices; and 5. How do findings from this study affect implications for school librarians administering best practices for working with students? These questions were answered by the five data collection methods and subsequent analysis, and are explicitly addressed again in this section.

Observation: Watching Day-to-Day Phenomena Unfold

As noted earlier, observation was conducted with an aim to better understand daily interactions occurring in the library. The researcher's role as an insider (a working school librarian in another district) and outsider (interactions with students did not occur) afforded baseline knowledge for conducting observation. Because of familiarity with the logging in process, how students access resources, library policies, and adolescent behaviors, the researcher possessed the ability to hone in on specifics relating to the

research questions. Observation findings provide rich description of the study setting and actors. Every moment of observation is not described here; rather, specific observed incidents and conversations are recounted for the purpose of informing overall data collection.

Observation 1. The suburban teens working in the library sat at computers to either type, use their cell phones and smartphones, or to read printed books. Immediately evident were examples of student multitasking behaviors. One White male student, for example, came to the library to write a paper, and spent time alternately writing sentences and watching YouTube videos of musical performer Dr. Dre. Chatting with friends next to him, he also surfed the Web on his smartphone, and opened a small YouTube video window on his computer monitor. The YouTube video site is filtered and blocked by the district, so this student must have known a proxy bypass that allowed him access. Students in the library constantly scrutinized their mobile phones and devices.

Throughout that first day of observation, many of the computer screens used by the students were visible. The observed information students accessed included: safety schools (which a student described aloud as her "fall back" school in case she was not admitted into her first college choice), Gmail, Facebook, personal application letter examples for honor societies, Grooveshark, Viddler, Wikipedia, YouTube ("How to Fold a T Shirt in Two Seconds"), study abroad programs, Google images, YouTube music videos, MTV's "Teen Mom" television show site, Yahoo discussion boards, online games, personal resumes for college, and math sites for problem solving. Students also randomly surfed the Internet.

During the morning, one student was told by Paraprofessional B to stop accessing Facebook. Library paraprofessionals were tasked with monitoring student computer

usage. The student, an African American male, then approached the two librarians for help, explaining that the reason he was on the site was to send an instant message to his prom date, who attends another school, about the upcoming dance. He told them that another boy next to him was also using Facebook. Both librarians suggested he send her an e-mail message instead of using instant chat in Facebook, as he did not have his cell phone with him that day. The librarians asked him if he would bring them a photo of himself in his tuxedo, after prom, and beaming, he pulled a folded printout from his pocket showing a photograph of the suit he planned to rent.

Observation 2. During this observation it was apparent there was little diversity among the suburban teens visiting the library. Throughout the day of comings and goings, the researcher saw only one male African American student. Students in the library used multitasking while completing work. One White male, for example, sat in front of a desktop computer and worked with paper and pencil to complete an assignment while also accessing YouTube videos and Google images.

A lengthy conversation occurred between three White male students who were shopping for cars and trucks online; an intense hailstorm the previous week damaged some vehicles owned by students. Leaning over one another to all view one computer monitor, they discussed the merits of various models of pickup trucks while scrolling through sites and looking at enlarged images. “His truck is worth 30K,” explained one male to another. His companion commented: “You’ll need at least $10,000 down to buy this,” as he showed a current year model for sale online.

A White female peer, carrying a Coach brand handbag, joined the males and told them that her car is worth $21,000, and explained that after the hail damage occurred, her parents offered to buy her a used Infiniti model car. Her male companions laughed, and

chided her being talked into accepting a car that already had 15,000 miles of wear. The female walked away and the males located an online payment calculator and began figuring out how insurance costs would figure into buying a new car or truck. Some models, they noted, cost less to insure. "I'm getting a $12,000 check," said one male to the other two. A fourth White male joined them at this point, dressed in True Religion brand jeans and a designer T shirt, similar to the clothing worn by the three males. Their discussion then turned to Spring Break and what happened to some student friends vacationing in Mexico earlier in the month (March). Before their group broke up and they left the library, one of the males suddenly asked the others about an assignment that was due, and they assured him that because a substitute teacher was in class that day he could turn the work in late. Librarian B later identified these students as 12th grade students.

Students working in this library carried expensive brand-name handbags and backpacks, and wore latest branded clothing and expensive athletic shoes. A group of White male students entered the library with a teacher, who directed them to begin working on a project. These students were not wearing shoes, but did have socks on their feet. When questioned by Librarian B, a White male told her that he and his friends were not wearing shoes to bring awareness to others who cannot afford to buy shoes. He recommended an information site (http://www.onedaywithoutshoes.com/) and suggested she visit the site to learn more about this initiative, promoted by Tom's brand shoes. Many of the students at the study site wore this brand of shoes; when Tom's shoes are purchased, the company donates a new pair of shoes to a child in need. A group of other students, all White, accessed Twitter and posting updates.

During lunch, five White male students discussed colleges and universities, summer plans, summer jobs, girls, class vocabulary lessons, baseball, swimming, more

conversations about girls, including the different sizes of girls. At this point, their voices lowered and it was difficult to follow the rest of their conversation, but frequent laughter was common. As they spoke, they all tapped at their phones and also shared some of the screens they were viewing with each other. Later that day, a class came in to create brochures detailing cancer types and treatments for Health class. One pair of White males appeared to be working on this assignment and had accessed the opening page for a research site, but in reality they spent the bulk of their work time passing a Smartphone back and forth as they played an online Monopoly game on it. They also streamed an online radio station on one male's desktop library computer, and listened to different songs as they played their game. "I already paid off the houses," commented one male to his peer. They glanced up every so often to see if the teacher was checking up on them, but then quickly went back to their game. "Get sent to jail," yelled one male triumphantly to the other.

Observation 3. Shortly after school started, a student's mother entered the library to ask the librarians for help regarding her daughter's research paper assignment. They patiently showed the parent how to access online subscription databases and the online version of the assignment posted on LibGuides. The parent left briefly, and then returned to clarify a question she had about accessing the LibGuides page for the research assignment. As on the other observation days, teachers and school staff entered the library to visit with both librarians and paraprofessional staff. The library was as inviting for them as it was for the suburban teens, who were enabled use their cell phones and smartphones, visit socially, relax, and consume food and beverages. The library also was identified as a passing place because of its location in the middle of the school, and the direct access provided to other areas of the school.

On this visit a pattern was noted wherein students came to the library to do academic work, but also used devices (often placed right next to the computer keyboard) as a type of break from academics. Students alternately used school computers with smartphones and cell phones (one Asian American female placed two smartphones next to the computer monitor), iPad tablets, iPods, and other MP3 players. Nearly all of them used earbud-style headphones to listen to content on their devices. It was not unusual to see students work on projects and take multiple breaks to conduct random Internet searching (on their Smartphones or even on screens next to their computers if space was available), play games, send text messages, access images, look for club and athletic event times, watch the television monitors streaming CNN, and check e-mail accounts. Observation notes detail impressions: "Not much straight up work, work, work, but always a starting and stopping of work in order to play or do something else, then starting up work again, and then back to play." Earlier observation notes showed the same pattern occurring on other days; however, it did not become recognizable to the researcher as a pattern until this day.

Observation 4. The library was humming with students and teachers working on academic projects on this day. Still, while the required classroom work being completed, it was possible to observe students looking at items that were not work related as they sat in front of their computers: Pandora (online streaming radio), a web cam window (purposefully made small) with a live person interacting with the viewer, searches for smiley face icons, online quizzes, retrieving Hotmail in Spanish, advanced placement (AP) exam score ranges for college credit, Babel Fish (a free, online translation program), Google street maps, apartments for rent, ESPN sports scores, online discussion forums, and blogs.

Again, there was little ethnic diversity in the suburban teens entering the library. For the most part, the students were White, with an occasional Asian American student, and even fewer Hispanic and African American students visiting. Students for the most part were polite and respectful of library staff; however, they rarely asked for help and when they did it was to either locate a book for pleasure reading or to resolve a technology problem involving printing assignments. A Hispanic male sat near a White male, sharing a laptop in the soft seating area; they appeared to work on building a gaming website, and frequently visited both Google Images and an online forum to find information, which they then incorporated into their design. It was impossible to determine if the laptop was a personal one or was school property. They did not speak to each other much, and almost seemed to communicate silently. One male passed the laptop over to the other one, and they frequently leaned over one another to "drive" their searches. The Hispanic male also plugged his smartphone into the laptop to charge it while they worked. "You have to do the blink apps all the way down," he told his peer, adding, "It's like that on the iPad." The other student replied, "I have that. Do you have that? I have to click on the HTC [Android] thing." The first student responded, "No, you have to delete those." They then spent some time comparing their smartphones, and later began searching for apps on their phones, even as they continued to work on the laptop.

Students logged in to their computers, and sometimes waited 10 minutes before their screens would load. Often, students would move onto other desktop computers and try to login to an alternate machine while waiting for their first computer to complete the login process. Expressions of annoyance were common when login times exceeded three or four minutes. This same problem was noted in earlier observations, but on this day,

when a full class came in to use every desktop computer, it was readily apparent that login times were indeed slow.

Observation 5. The login process was timed to see if previous episodes were an anomaly. Login times during this observation varied from three to 15 minutes. Some students gave up logging into one machine, and moved to a different computer to attempt the login process again. Two White male and female students spent 15 minutes talking about how to solve a math problem, with the female showing the male the steps in the process. A White male entered, wearing a designer T shirt, and animatedly spoke with two White females working at the computers. It was not unusual to see the suburban teen population sporting outfits that may have cost hundreds of dollars.

One White male spent time in the library that day making flyers for a summer job business he was managing. He used Google Images to find pictures of guitars, lawnmowers, and pressure washers. He leaned over and told another White male, "You get a pressure washer and you hose down sidewalks and driveways, and fill in the chinks." The flyer was observable as he worked on it, and text showed that he charges $40 to mow a lawn. He printed several flyers, gathered them, and then logged into another computer to begin classwork (which had begun 20 minutes earlier).

One random conversation noted occurred between two White females and one White male. "I don't like to do my homework at school. It's too quiet." The three of them began discussing an upcoming event. "Did you get invited?" asked one female. The other female did not answer, but began complaining about her grades. "I'm not going to get straight As this semester. I might get two As." Her friends did not comment, but placed separate earbuds, attached to their smartphones, in their ears as they prepared to do academic work. "Guess I'll check my grades," said the first female after she did not get a

response, and then logged into the online grade site. After a few minutes, the male student leaned over her and looked at her screen, and said, "Do you have any As? You have straight Bs." "No I don't," replied the female angrily, "I have two As. I'm only allowed to get two Bs. My mom wants me to get all As. My mom would be happy with all As and maybe two Bs. I got straight As in ninth grade. In debate, everyone thought it was so easy, but I sucked at debate." Meanwhile, the second female also logged into the grade site, and complained to her peers, "My grade is bad because I haven't turned in all my stuff yet. But look – he hasn't graded this stuff and put it in." Clearly annoyed, she mentioned finding her teacher to solve this problem.

One African American male was playing games during a scheduled classroom visit. Next to him sat a White male and female, who shared earbuds and one chair, while the female attempted to download a file from e-mail. An Asian American female worked on an online SAT practice exam, and also clicked back and forth to a website listing cocktail recipes, which she avidly wrote down in a notebook. She carried her school items in an upscale deli bag made out of fabric, and later placed her drink recipe notebook into an additional leather handbag.

Observation 6. A Health class worked at library computers to create cancer fact and treatment brochures. Whereas on previous observation sessions these same students conducted other, personal activities during scheduled class times, today they were visibly working hard to complete the assignment; it was their last scheduled day in the library. A worried-looking White male entered the library and approached Para A for help locating a code for creating an Animoto video using the school's educational account. She turned him over to Para B, who was unable to locate the information and sent him to School Librarian B, who located the code. The student was carrying a laptop, and the librarian

spent some time with him on it, trying to figure out how to import a previously made 30-second video into the larger video he was creating. She eventually solved the problem, and he was visibly relieved and thanked her profusely.

One White female and one Asian American female held a conversation about college as they worked at library computers and also accessed their smartphones. “Oh my God,” said one female in an excited voice, “Look at this scholarship she told me I’m eligible for – it’s $17,000!” Her peer replied, “That would be so nice.” The first female commented, “I have so much to do this week. I don’t want to go to the college of engineering, but if I can get my undergrad in biomedical engineering then I can apply to med school.” Her friend said, “I feel like if you have a biology major you can still go into med school.” “I would hate engineering,” her peer commented back. The second female remarked, “You should look at what you need to take,” and the first female took her advice, allowing her friend to direct the online search. What was striking about this conversation was that these suburban teens displayed serious attitudes concerning their future education options and decisions. Other students searched online for their AP exam scores, and discussed when they were scheduled to take the ACT exam. Later, the first female from the earlier conversation mentioned that she will have completed 24 hours of college when she graduates. Preferred colleges she discussed were the University of Miami, Harvard, Johns Hopkins, and “Michigan.” The second female cautioned her regarding the high cost of attending a prestigious medical school, and noted that “Even Iowa is something like $90,000 for med school.”

Throughout the observation sessions, students were seen briefly watching CNN on the large screen monitors in the library; this usually occurred while they were waiting for the login process to complete. Students also exited the library for short periods of

time, and left their handbags, backpacks, makeup bags, and mobile devices on the desktop where they sat, and these items were not disturbed by others.

Two Asian American females worked in the library, speaking with their teacher to create a topic for a report. They asked the teacher if they could research third world living conditions, and were granted permission. This led to a discussion between the students about products originating from third world countries; they both agreed that in some countries children are forced to make clothing for a living for very small wages. The first female commented, while looking online, "It says that Uggs (an expensive shoe brand from Australia) are bad because people don't realize how many sheep are killed to make them…I know it's a fashion staple, but people should know this." The students became very animated at this point and decided to use one of their smartphones to create a video focusing on students in the school wearing Ugg shoes. Their teacher was skeptical and questioned them about their line of reasoning. The females continued brainstorming their project, with the first female saying, "I have a Mac at home." "I don't want to do Animoto," replied her peer. "We can do it on the Mac," assured the first female. They decide to use home time to complete the assignment, and then used their computers to search for fashion sites for the rest of the class period.

Observation 7. The final day of observation proved that data saturation was reached for nonparticipant observation. This time was useful for cataloging all of the technologies available to students in the library. Three White students, one male and two female, described how the snowy winter had caused the school year to be extended by an extra week and a half. They were all angry about this fact, and commented that the extra time at school was "killing summer."

Two White females worked at a computer, on one screen, to complete work for an assignment. Their teacher entered the library and began giving them details about how they could do their work. “Look at my iPad. It’s on my desk. Then you’ll see,” she told them. The females left, giggling, then returned together and started working again, joined by a Hispanic male. He asked one of the students how to solve a math problem, and she explained the equation to him. During observation it was not unusual to see students willingly help one another solve problems, complete homework, access files, search online (class-related and personal), retrieve assignment sheets, and locate grade reports. The sharing witnessed with their mobile devices extended to school work, and there was a general mood exhibited of seeking academic success.

One new event unfolding on this observation date occurred when a White female student and a White male teacher entered the conference room. Through the glass window, he was observed giving her instructions, and she nodded several times, and then he gave her a packet and left. Paraprofessional A explained that she was taking an AP exam at school because she was out of the country when the original test was administered. Because it was the end of the year, there was also some student traffic occurring as senior students came to the library to settle overdue and missing book/materials fines.

Library staff relationships were in a state of change on this day. School Librarian A had chosen to extend her maternity leave into a one-year sabbatical, which necessitated that School Librarian B work with administrators to hire a replacement; one candidate for the position visited the library that day before her formal interview. Paraprofessional B decided to leave her job and attend graduate school, and it was obvious that she was already disengaging from work and preparing to move into her phase of life, as evidenced

by avid descriptions of her graduate program to adults entering the library. School Library Sub was also distracted, as she was looking for a full time teaching position for the coming fall semester. This observation revealed that the school library would never be the same again – this study captured a slice of time in a school where policies, students, and staff were changing and evolving, and completing a similar study in the future would mean that different results would likely occur.

Observations overview. The library site is a busy, thriving place that is inviting for students and staff. The suburban teens, mostly wearing designer clothing and carrying similar gear, spend time interacting with their devices and their peers. The student population is not diverse and is primarily made up of White males and females. Student-owned mobile devices are welcome in this setting, and library policy enables them to actively use them while also completing academic work. Elements of "rule bending" (Ito et al., 2010) occurred at each observation. Policies differ from typical schools (students do not have a formal attendance policy, students may consume food and drink in the library, students are encouraged to use their personal mobile devices in the library, students use academic work time to simultaneously conduct ELIS practices, and students use "work arounds" to bypass the district-required filters in place).

Students exhibit a type of "work/play" ethic, often typing on a keyboard for an assignment while also tapping and searching on their mobile devices for items of a personal nature. Students rarely actually spoke or made calls on these devices. Students are thoroughly immersed in completing academic requirements and making good grades, and older students spent considerable time looking at college and university options, as well as reviewing dates and places for standardized college entrance exams. Students approach school librarians for help, it usually is for technology problem-solving. Library

Paraprofessionals are mostly sought out for advice about fiction reading selections and print material location.

Suburban teen ELIS practices determined from observation sessions encompass students using mobile devices in lieu of school computers to look for personal information seeking topics. When working in the library, some students also used school computers to conduct ELIS searches, alternating between work and play. Students were observed looking for both ELIS topics and commonly used information sources, including college, jobs, fashion, cars, scheduled dates for activities, current events, language translation, YouTube videos, Google Images, streaming music, grades, sports, sports scores, Google Street Maps, forums, blogs, e-mail, prom, social networking (Facebook, Twitter, YouTube), body building, video creation, gaming (including building online gaming sites), and online television shows. Because of the researcher's role as *outsider*, details about *why* students visited these sites were not determined, and it is possible some of their searches may have been prompted by academic assignments.

Observation analysis. Observations were completed with the aim of providing the researcher with a detailed understanding of daily events unfolding in the library setting in order to begin to answer the research questions. Contextual maps were created to help with recall and linkages when other data collection methods were used.

Mastery of life observed. Savolainen's (2008) "mastery of life" descriptions apply to the suburban teens in this study. ELIS practices help teens to orient themselves towards information that helps them maintain the "order of things" (Savolainen, 2008), such as checking e-mail, locating club and sports schedules, checking grades to make sure they have been updated, and making frequent social contacts through text messaging and social networking. Their orienting practices enable them to tackle larger life

information needs and concerns, or their "mastery of life." Observation sessions uncovered examples of suburban teens managing their own educational opportunities, grades, and academic growth, in active and participatory ways. Their mobile devices, or tools, enable them to structure the structures around them (Savolainen, 2008, described this as a "structuring structure"), and they also displayed Bourdieu's (1984) *habitus* in that they exist within "a socially and culturally determined system of thinking, perception, and evaluation, internalized by the individual" (Savolainen, 2008, p. 17).

Savolainen stated that ELIS practices tend to hone in on heterogeneous topics that help people maintain their lifestyles, acts which build up on seeking orienting information in order to create a foundation for mastery of life. Warner (as cited in Savolainen, 2008) believed these include consumption of material goods, health, education, employment, transportation, recreation, financial, and legal matters. Agosto and Hughes-Hassell (2006a, 2006b) uncovered similar findings in their urban teen study, and also reported new ELIS topics not previously reported. Observations conducted for this study also uncovered socially-driven acts (text messaging, visiting social networking sites, sharing computer screens) that add additional layers to the understanding of how ELIS practices are conducted by people. That the urban teen study and suburban teen study include adolescents as a population of interest also adds to the knowledge base described by Savolainen (1995, 2008).

Students' use of mobile devices tools as a structuring structure observed. Because students in this study were enabled to use the personally-owned mobile devices that comprise a large amount of their school day communications, they were able to use these tools as a type of "structuring structure" (Savolainen, 2008, p. 17) to manage work and play into categories meaningful for them. When Savolainen first wrote about ELIS theory

(1995), he discussed information behaviors. However, his advanced label of "information practices" now applies aptly to the suburban teens in this study. They have moved beyond mere behaviors (tapping keys, swiping screens, clicking mice, looking at screens), and have grown *practices* that make information-seeking opportunities rich and far-reaching. That the library encourages mobile device use only increases the chances that their ELIS practices will occur during school hours.

Blend of work and play observed. Observation of suburban teens shows that ownership of mobile devices affords them opportunities to blend work and play as they complete tasks in the library setting. Observed examples of "play" included searches for Internet sites related to gaming, shopping, colleges, news, clubs, online videos, celebrities and movies, travel, and other interests. These acts of play also allow them to bypass the district-required filtering system so they can quickly and privately access sites of interest. The suburban teens have moved beyond mere behaviors (tapping keys, swiping screens, clicking mice, looking at screens), and have grown *practices* that make information-seeking opportunities rich and far-reaching. Those practices are the core of their developing ELIS practices capabilities in that they have conquered tool access in order to move forward with tool usage (still in development) in ways that naturally coexist with searches for academic and personal topics. That the library encourages mobile device use only increases the chances that their blended ELIS practices will occur during school hours. As previously discussed, these practices may also be labeled as pleasurability, or what Savolainen (2008) detailed as "creative and constructive ways of doing things differently" (p. 30).

Reliance on mobile devices for meeting ELIS needs before seeking help from other humans observed. Suburban teens rely first on their mobile devices for help with

meeting needs. When looking for information, these teens tended to first search on their own, and to consult others after they were not able to fulfill their needs. They approach school librarians primarily for technological help, and prefer asking friends for help if they cannot find an answer by themselves. Both Savolainen (1995, 2008) and Agosto and Hughes-Hassell (2006a, 2006b) described how humans tend to seek out the people closest to them for help with ELIS practices. The suburban teens exhibited somewhat different tendencies, and their practices align with earlier findings only after they have exhausted personal searches via their mobile devices to conduct ELIS practices.

Because they own and access mobile devices, they were able to execute searches privately and quickly; if they were not working on a school assignment, they were enabled to search online using their smartphones, and could thereby avoid the computer login time lag existing at the study site. Because suburban teens have been immersed in using mobile devices for years, they have pervious experiences that inform them where to seek information and whom to approach for help for this practice. Their stock of knowledge, then, has built up a foundation that enables them to rely first on self-searching, via their mobile devices, before seeking help from other humans, such as friends, family, and librarians.

Need for guidance observed. School librarians are tasked with introducing and modeling new technologies (AASL, 2009), and imparting strategies that help students work with technologies beyond simple actions of access. In this setting, this school librarian role is not fully realized. From observation, the teens in this study comfortably and confidently used physical and virtual technologies offered in the library; yet, it is apparent that they did not fully understand how to use functionalities of some equipment and programs. Their tendencies to rely upon their devices and their peers before seeking

help from knowledgeable adults, such as school librarians, might hinder additional learning and guidance that impacts potential cognitive growth. Additionally, while they show usage abilities for mobile devices, AASL (2007, 2009) guiding documents call for ongoing instruction in the ethical use of such technologies.

The urban teen study (Agosto and Hughes-Hassell, 2006a, 2006b) population existed in a time when mobile device usage among students was not as prevalent. ELIS practices among both groups show some overlap (academics, fashion, college, daily life routine for example), but because of newer levels of access and changes in technologies, the suburban teens used these tools to harness their own educational progress as an extension of retrieval. For example, students accessed YouTube "How To" videos to educate themselves about practices in which they showed an interest. They located grade reports online, and took this action a step further to find teachers to question them about specific grades they received. Notably, they also immersed themselves into their peers' examination of grades, providing technology help and social commentary.

The suburban teens had plentiful access to mobile devices; urban teens did not enjoy the same levels of technology access and ownership. However, cell phones were manufactured and sold when the study was competed, and Hughes-Hassell and Agosto (2007) reported "Cell phones were largely viewed as status items, and all of the participants had them" (p. 48). Some differences in ownership of the most advanced mobile devices might have underlying elements of class and expectation, much like those discussed by Bourdieu (1984) and Havighurst (1972). The suburban teens frequently expressed both desire and expectation for attending premier colleges and universities, and take actions to assure that this will happen; searching for college entrance exam dates and locations, researching college programs, discussing scholarships, and planning for "safety

school" options. Simultaneously, they managed their daily way of life by searching for replacement vehicles for cars damaged in a hailstorm, comparing prices, determining down payment amounts and insurance costs, and obtaining financial information for reimbursement checks from insurance companies.

Findings: School Librarians' Interviews

Using an inductive, iterative analysis method informed by Glaser and Strauss (1967) and Krathwohl's (1998) steps for coding, an initial coding scheme was developed through examination and reexamination of the transcribed school librarian interviews data, yielding 203 open codes (Table 7) from a total of 2,374 responses, which were later subsumed into 21 focused codes (Table 8), and 11 emergent categories (Table 9). Software coding program ATLAS ti (version 6.2) was used to assist in entering, developing, collapsing, and manipulating codes. Open codes were created to represent every possible piece of information provided by the librarians. The researcher examined this initial set carefully for likenesses and differences, with the goal of subsuming like codes into logical focused codes representative of interview data. Color coding was used to help identify codes of like types. The emergent categories begin to paint a picture of school librarian perceptions of suburban teen ELIS practices, and comparison with student focus group sessions shows that their viewpoints are not the same as the students' perceptions. Further refinement led to finalizing five core categories (Table 10), and the theme explication.

School librarian interviews: Overview. School librarians in this study expressed value of students and the time students spend with them in the library. Because this is a new school setting, school librarians are still in the process of connecting and collaborating with teachers to create instructional units that stretch learning beyond

reports and creating end products. They daily teach information skills that help their student charges complete academic work. Because they welcome the use of mobile devices in their library, it has become an attractive place for suburban teens to visit. Librarians are frustrated by filtering requirements, and acknowledge that the presence of filtering software may affect the ways students search for ELIS topics.

Though the librarians stated that they did not doubt that students at the study site have ELIS topic needs, they initially had to think for a few minutes to recall examples, and 5.39% (128 responses/2,374 total responses) of their responses detailed events, actions exhibited, or sites visited by the students. School Librarian B, however, qualified their actions as "life related" searching. "I've noticed like with girls I will notice them shopping for clothes at times … I do think you see some of the kids just looking up general things. Just like, you know, music. They like to, I mean they do like to go around the filter and just watch YouTube videos of music, you know. I see them doing that a lot. They want to try to check their Facebook a lot if they can't get caught. I mean if it's not academic-related, it's kind of just real life related I guess."

School librarian interviews: Analysis leads to theme identification. Key areas for analysis from the school librarian interviews include the learning process, academics, affluence and expectations, the school district administering the study site, school librarian connections with students, creating an inviting school library, filtering, and devices. Inherent in all of these codes are helps provided to students from school librarians, and they are discussed within the section below on academics.

Learning process. School librarians' interview comments focused on the learning processes of the suburban teens. Perhaps one of strongest elements to emerge from interviews is that students prefer a type of "instructional model" to ascertain that they are

on track for successfully completing assignments, and that they are provided with tools enabling them to correctly produce work that will earn the best grade possible. School Librarian A spent a significant portion of her interview session describing how students at this study site prefer a type of explicit directions and guidance when asked to complete assigned tasks and projects for a grade. She referred to a professional book, The Price of Privilege: How Parental Pressure and Material Advantage are Creating a Generation of Disconnected and Unhappy Kids (Levine, 2006), and said one of the strongest ideas she discovered from her reading was the concept that some students in affluence desperately want to achieve the best grades possible and will demand specific instructions for accomplishing this. "They are overly dependent on the opinions of parents, teachers, coaches, and peers and frequently rely on others not only to pave the way with difficult tasks but also to grease the wheels of everyday life as well" (Levine, 2006, p. 5-6).

Instructional models, as described by school librarians, might look like a one-page listing of step-by-step directions for completing work, an example of a student's completed end product, or even a short video with screen shots showing how a specific finished end product might appear. Pearlman (2010) described such models as containing detailed rubrics for content, shared communication between teacher and student, and are "posted online for students so they can decide on their own whether to achieve basic, proficient or advanced work" (p. 121). At the study site, end products are typically dictated by teachers, who rely on the school librarians to provide potential pathways for creating the final projects, often using social media Web 2.0 programs to encourage sharing and teamwork during the process. School Librarian A continued this thread of discussion during the interview to explain that students want these clear, unambiguous directions so that they can be assured they will complete their assignment successfully.

As School Librarian A explained: "They want to not only see an example but they want to know how many slides, they want to know…very, very detailed, so they don't mess up. And it's almost worse with our AP [Advanced Placement] kids than it is with our, you know, other classes."

When students are given more freedom to complete work in alternative ways, School Librarian A said "it's the panic" – they shut down creatively and ask for help before proceeding. Students at this study site have completed school, district, and state assessments nearly every year since second grade. School Librarian A said that students' familiarity with a "testing culture" and desire to make exemplary scores on assessments also drives their requirement for teaching methods that align with assessment formatting. She describes these behaviors in more detail, calling for more of a teaching influence into "inferencing" (how students analyze and compare potential product outcomes). "Because we don't always have the necessary step one, two, three with them, there are kids that are like I don't know how to use this. Like [student's name deleted], I don't know how to use this. And there are some girls that are like, I can't get it to upload. I can't get, you know, and they just shut down. They're done. Just that problem solving…I wish more and more people would watch the process that kids go through to bring them in and have them do more of that, because … they've got to not only figure out the content but then they've got to do all this other problem solving."

Academics. The code for ACADEMIC WORK (229 responses/2,374 total responses, 9.65%) existed alongside the suburban teens' demands for instructional models, and this code encompasses all manner of academic assignments and work completion. Both school librarians viewed themselves as forms of "help" for student learners working on academic projects (169 responses/2,374 total responses, 7.37%).

Librarians, however, provided detailed descriptions of helping students to understand concepts, to locate and access resources, to create end products, to solve both simple and complex technology problems, to learn new material in collaborative co-teaching sessions with professional peers, to show the suburban teens how to simplify steps for searching for find information, to evaluate resources, to employ librarian-designed applications on smartphones, to advising students on relationship issues, and even helping them to register online for college placement exams. The librarian' responses show they view themselves as deeply involved with the concept of helping students navigate school, learning, technologies, and social processes.

Affluence and expectations. Two codes, AFFLUENCE and EXPECTATIONS (382 responses/2,374 total responses, 11.87%), created a core category describing students. Both librarians frequently discussed suburban teens who are members of families who have money and influence. According to the librarians, the students have access to the latest mobile devices and the accompanying home network access that enables them to use such devices to their full potential. Students are in a sense "groomed" by their family members to be successful academically so they will gain entry into the best schools and colleges.

School Librarian B described the students as if she were trying to explain how they would appear to an outsider. "I think they would need to understand that our kids might have access to a lot more than maybe where they're from. I mean our kids, from what I've seen, very few of our kids don't have a car. I mean they have cars, they have clothes, they're fed, they have cell phones, they have more than your basic needs. I mean we are not a typical middle class community school population, student population at all … this is maybe a little more above board than what you're going to get." School

Librarian A echoed School Librarian B's comments, and both librarians spoke about differences between old and new money, and explained that the newly constructed high school pulled in a student population from older, established schools in the same county – each with their own unique "flavor" of wealth and advantage.

School district. The code of SCHOOL DISTRICT (165 responses/2,374 total responses, 6.95%) is comprised of elements such as district expectations for creating "college ready" students, the presence of Advanced Placement (AP) classes, and an overall district vision of being the best school district in the area, as described by the librarians.

School librarian connections and creating an inviting library. Because the new school draws students from existing district high schools, both school librarians had formed relationships with students at their prior schools; the codes for this is SCHOOL LIBRARIAN CONNECTIONS (110 responses/2,374 total responses, 4.63%). The tone they used in their comments describes a desire to continue to nurture existing connections and to help grow relationships with students they were only just beginning to know. Certainly, inherent in forming those connections was also their support for creating an INVITING SCHOOL LIBRARY (121 responses/2,374 total responses, 5.10%). Together, their proactive connecting with students and provision of an inviting space for them make up nearly 10% of all responses.

Filtering. FILTERING (58 responses/2,374 total responses, 2.61%), is mandated by school district policy to prevent students from accessing inappropriate online material. Both librarians stated they accept that a filtering system exists and that they have to fulfill district directives, even as they readily acknowledge that students have figured out "work arounds" to bypass the filters in place. School Librarian A, musing upon this topic a bit,

said: “I don’t necessarily agree with the filter … I have to follow rules about the filter but yet I don’t, I don’t agree with it. Like I think they should be able to go to YouTube and look up stuff for their projects. So that’s the main [idea], of just like this filter thing I hate, and I think the kids do too. I think it makes a difference in how they look for information.”

Digital Devices. In their interviews, the librarian responses make up a code for DIGITAL DEVICES (58 responses/2,374 total responses, 2.44%) used by students. They reported noticing students constantly using their cell phones, smartphone, and iPad and other devices, but this was not something surprising or new to them, which make sense because mobile device usage is encouraged in the library as part of their effort to create a welcoming environment.

Continued analysis: Emergent categories begin to locate the essence. The collapsing of 203 initial codes led to a coding scheme that delineated a final list of emergent categories which begins to better describe the situation occurring at the study site. Emergent categories place a strong emphasis on *student learning* (747 responses/2,374 total responses, 31.47% of all responses). This category encompassed all codes involving students and their learning processes, including the necessity for an instructional model as discussed earlier. *Student behaviors* (272 responses/2,374 total responses, 11.46%) tapped into the suburban teen actions and activities occurring within the library outside of requirements for academic assignment completion. The *school district* (227 responses/2,374 total responses, 9.56%) was a featured category, and included the function of administering policy decisions that affect the school and the suburban teens on many levels. S*chool resources* (182 responses/2,374 total responses, 7.67%) encompassed all types of print and virtual materials available to students,

including hardware supporting software programs. *Helps* (169 responses/2,374 total responses, 7.12%) applied to all manner of helps provided to students, as well as a nominal number of student-provided helps as identified by librarians. The identification of *personal information seeking practices* (163 responses/2,374 total responses, 6.87%) was low. The *new school library* (121 responses/2,374 total responses, 5.10%) existed within the *new school* (101 responses/2,374 total responses, 4.25%). *School librarians* (110 responses/2,374 total responses, 4.63%) included functions and behaviors, including connection building, of school librarians working with students and staff.

Core categories emerge. Five core categories (Table 10) emerged from the reduction of data from open coding to developing a coding scheme, to creating emergent categories. Core categories help to organize and place school librarian interview data within the research questions for this study, providing a useful way to examine suburban teen ELIS practices as described by the school librarians. Learning and ELIS practices are combined into the category of Learning and ELIS, which in turn is also influenced by roles exhibited by school librarians, the very nature of 21st century learners, the culture of the new school (placed within a larger district culture), and familial expectations. To state that these categories are causal is premature and not a purpose of this study. However, linkages between the school librarian interview data begin to help to explain relationships among the categories, and provide a knowledge base for comparison with other data analyzed for this study.

School librarian interviews and the central research question and subquestions. The central research question asked: What are the ELIS practices exhibited by upper income students working in a highly technological high school? According to school librarian descriptions, the suburban teens use mobile devices to

conduct ELIS practices, even as they are in the library for the purpose of completing academic work. They also visit the library simply to relax, and often use that time to continue using mobile devices to meet their ELIS needs. That the school librarians have made the library accessible and welcoming for mobile device use is remarkable.

The suburban teens frequently work at library computers, and place their mobile devices near the computer keyboard. School Librarian B explained this phenomenon in detail: "I don't know if you've observed this when you've seen the kids, but I have seen it and I don't really say anything about it, but they're doing what they need to be doing on the school computer, [and] their phone is like on their Facebook or their YouTube or whatever. It's on what they're not allowed to get on. So they're getting the best of both worlds because they're getting their work done and they're not breaking any rules in our computers, but they're getting what they want like Facebook updates and stuff on their phones. You know what I mean? They're happy."

Rule bending. The librarian's comments echoed Ito's et al. (2010) similar description of ways teens "subvert institutional barriers" (p. 48) to be able to use computers in ways that they prefer. The suburban teens have determined the ultimate "work around" by using their mobile devices when they want to access information of a personal nature. Their behavior aligns with Piaget's (1954) Formal Operational stage, wherein children begin to think combinatorially, and can consider different methods for solving one problem, a thinking process which also requires abstract thought. While School Librarian B stated that they are not breaking any rules, it appears that some amount of *rule bending* is occurring.

Librarians work within a rule-bending culture. Policy making dictates rules, and for the suburban teens, rule bending is not unusual. However, the school itself is in more

subtle ways engrossed in acts of rule bending, which may lend an overall cultural acceptance for similar student actions. The relaxed attendance policy may encourage some students to attend classes sporadically, for example. Hat wearing is discouraged in the school, yet attending school without wearing shoes is considered acceptable for creating awareness for a charitable cause. While most school districts require that high school students complete final exams at the end of each semester, the suburban teens may exempt themselves from these exams when they do well on state assessments. Classroom teachers do not allow the use of cell phones in class, but they overlook this rule in the library because mobile device use is sanctioned there. The school expects classroom teachers to administer a "college ready" curriculum; when teachers collaborate with school librarians to create projects, however, they readily yield to student demands for an instructional model to ensure successful completion of the project. Students at the study site were expected to respect teachers, which they did until they needed to argue with them about grade reporting and awarding. Facebook access is blocked, but one teacher chose to have students create a fake Facebook page, leading some students to believe that they needed to access their Facebook accounts during school in order to produce "exemplary" (School Librarian B) work. Without explicitly stating that rules are malleable, district and school administrators have created a culture where rule bending occurs on varying levels. While the librarians interviewed for this study did not describe themselves as "rule benders," there were times when such actions occurred.

Librarians sometimes bend rules. Both librarians, when asked to think back to a time when they wished an encounter with a student had gone differently, expressed regret when they detailed situations when they granted access to programs that are typically blocked. In both reported cases, students needed to access Facebook for academic

assignments; one student wanted to retrieve personal photos from her Facebook page for a school report, and the other student worked to create a "fake" Facebook page for a project involving a template. School Librarian B provided details about the female student, saying "And when I told her you have two and a half minutes to do it, she was like boom and she did it. And she didn't look at it as an opening to be on there any time she ever wanted to. Because she's been in after that, I haven't seen her do that." Her sense of remorse is expressed when she continues, "But I'm always afraid that if I even set a precedent with the two or three people around here … I thought I was really open with her to let her go ahead and do it, but then I'm more worried about like is she going to go tell people, oh, that librarian let me on Facebook. She'll let you on there to do … you know, I don't want to be seen as like … that easy access one."

Subquestion 1. How do the students in a highly technological school library environment use physical and virtual technologies and other information resources provided by the school library? According to school librarian interview data, the primary reason that students visit the library is to print assignments, although librarians did not detail why students do not print assignments at home. They also described computer use, primarily for the desktop computers in the middle of the library. Librarians states that students do use online subscription databases provided by the school library; few of them were accessing the extensive eBook collection at the time of the interviews.

The library provides access for mobile devices through policy creation that allows students to use personally owned mobile devices in the school library. The students provide the physical mobile devices, and use satellite-provided networks, and the school-provided network to access their devices. The iPad devices mentioned by the librarians are not provided by the school library; rather, students who own iPads visit the library to

access them there, and must use the school-provided network for access to online resources. Mobile and ICT sources comprise those communication devices and technologies that are shared, active, and multi-directional. For the purposes of typology creation for this dissertation, they were separated into the categories of mobile sources and ICT media sources (Table 11).

Both librarians reported that locating books was not a primary reason for student visits to the library. This may be partly because the library did not have a large fiction collection at the time of the study; another issue might have been the genre shelving system begun there that may have been unfamiliar to some students.

Subquestion 2. What are the students' most frequently expressed everyday life information needs? ELIS topics described by school librarians included academics, daily life routine, fashion, college, social activities, cars, gaming, travel, current events, popular culture, and social/legal norms. Topics of cars, travel, and gaming represented new additions to the reported urban teen study ELIS topics (Table 11).

Subquestion 3. What people sources do the students consult when seeking information for non-school purposes when seeking everyday life information in the school library? Because so much of interview discussion centered on the many ways they help students in the library, interview transcripts were reexamined to tease out the instances where they specifically detailed people sources sought by the suburban teens for purposes other than seeking help with school work. The librarians strongly reported friends as a category for this subquestion. This aligned with Savolainen's (2008) findings that people in general tend to seek out people sources such as friends and relatives when working to solve ELIS needs, and human sources are nearly always sought before networked sources.

Reliance on using personal mobile devices as an ELIS information source represents a new addition to the urban teen typology. School Librarian A described how students seek personal information help first via their mobile devices before asking for assistance when satisfying ELIS needs, and reasoned that the suburban teens do this because they do not want to call attention to the fact that they are not focusing on school work while they are in the library. However, self problem-solving is as an important step in developmental growth. Because formal operational thinkers (as described by Piaget, 1954) are able to think abstractedly and systematically, they now possess the tools that allow them to first consider themselves as potential sources of information. Havighurst (1972) noted that one of the adolescent tasks teens need to accomplish before moving into adulthood is the ability to achieve emotional independence from parents and to develop respect for older adults without dependence on them. If this is true, then the rapid development of mobile devices and teenagers' eager adoption of them means that students do not perceive adults as being on the same technological playing field. While dependence on friends and relatives as people sources for ELIS practices has been occurring for as long as ELIS behaviors have been studied, this newer level of independence in seeking first relying on oneself (through use of mobile devices) may be explained by cognitive growth stages and the process of becoming independent, as well as by the proliferation of new technologies and their global reach, meaning that students do not have to rely on adults as gatekeepers.

Subquestion 4. How do student ELIS practices in this upper income setting compare to urban teen ELIS practices? The urban teens lived in inner-city communities and fell into a lower socioeconomic classification (Agosto and Hassell-Hughes, 2006a). The suburban teens lived with families who are above the norm in terms of median

income, median housing values, and educational attainment. They had nearly unlimited technology access in terms of devices and networks (School Librarian A). Nearly 70% of the urban teen Free Library participation group had home computer access (16 participants), and 54% from the Boys & Girls Club participant pool enjoyed similar access (11 participants). Average home computer use for both groups was nearly 63% (Agosto and Hughes-Hassell, 2006a).

In terms of actual practices, comparisons are not reliable because the urban teens did not have access to similar technologies afforded the suburban teens. Bypassing filters to access information of a personal nature was not an issue discussed in the urban teen study; this may be in part explained by the fact that they were public library users; public libraries are not tasked with the same cultural standards regarding appropriateness of content as are school libraries typically serving minors, so levels of filtering in place at each type of institution may vary. In the Agosto and Hughes-Hassell (2005b) study, a student's search to uncover material about transgender, bi/gay youth would be filtered and blocked in the suburban teen school library setting today because of local cultural standards. While the urban teens (2006b) expressed interest in finding information about potential colleges, they did not list test-preparation and test-taking activities as topics of interest, as did the suburban teens, according to the school librarians. Other urban teen ELIS topics, such as familial relationships, emotional health, religious practice, self-image, philosophical concerns, heritage/cultural identity, civic duty, physical safety, and sexual safety, were non-existent for suburban teens in terms of school librarian responses. However, even though librarians did not report witnessing students searching for information of this nature, it is probable that suburban teens do conduct ELIS searches for this category.

Similarities between the two groups exist (Table 11). Hughes-Hassell and Agosto (2007) noted that findings such as this are significant because they demonstrate that adolescents, regardless of socioeconomic status, ethnic, cultural, and geographical boundaries, have similar information needs. The school librarians described seeing similar urban teen categories from the expressed ELIS topics; daily life routines, social activities, academics, current events, goods and services, popular culture, fashion, college, job responsibilities, social/legal norms, and creative consumption. The urban teens could not consult mobile devices whenever the idea for an ELIS search occurred, because this type of (smartphone) technology was not available at the time. They preferred to first seek human sources (Agosto and Hughes-Hassell, 2006a), turning to friends and family before consulting school employees, mentors, customer service staff, other non-friend peers, librarians, and unknown people. As noted above, school librarians reported that students first approach mobile devices and friends, before asking school librarians and other school employees for help meeting ELIS needs. Because of the lack of smartphone technology availability during the urban teen study, social networking was also not occurring on the same scale, if any, as it did for suburban teens. Although urban teen practices were mostly not similar to suburban teen practices for meeting ELIS needs (from the perspective of the school librarians), it is useful to view their ELIS topic typologies side by side (Table 11).

Subquestion 5. How do findings from this study affect implications for school librarians administering best practices for working with students? School librarians at this site have taken a first step towards supporting suburban teen ELIS practices, and encourage mobile device use in the school library. Students at the study site visited the library so that they may use these devices in freedom. They are devices, it should be

added, that allow them to harness and control their own information quests right in the palms of their hands. It can be argued that because students have moved beyond reliance on people sources for meeting ELIS needs, they are achieving a type of self-actualization in process, evidenced by their preference for first relying on personally owned mobile devices to meet information needs.

This study is significant for practitioners, because it provides examination of one population, the suburban teens, and provides layers of comparison with the urban teen group, at a time when AASL has taken the lead in explicitly detailing what librarian roles should be modeled in school libraries. Guiding documents, particularly AASL's (2009) delineation of school librarian role requirements, help explain how librarians in this setting can grow student mobile device use to new levels beyond that of acceptance. As stated earlier in this paper, three unique types of disconnect occur for students, including when students' lack of access to devices (the "haves and the have nots") hinders educational opportunities, when students' perceived levels of proficiency derail their potential intellectual progress, and when students are aware that mobile devices are ubiquitous yet ignored in educational settings. A fourth disconnect was described by Todd (2003) as "A profession without reflective practitioners willing to learn about the advances of research in the field is disconnected from best practice and best thinking, and, by default, often resorts to advocacy and position as a bid for survival" (p. 43). Librarians, then, must be willing to be reflective of their practice, and to use published research findings to inform best practices.

AASL (2009) learning standards require that students pursue personal and aesthetic growth. "They are able to connect ideas to their own interests and previous knowledge, organize personal knowledge, use social networks and information tools to

gather and share information, and express personal learning through creative and artistic methods" (AASL, 2009, p. 14). When school librarians work towards helping students fulfill this standard, they must not only embrace mobile device use, but also work alongside students to determine how devices play into learning scenarios that help them develop and grow. School librarians must inhabit roles that support social learning and the contexts in which it flourishes. School librarians, however, do not do this alone; they are instead required to work collaboratively with fellow classroom teachers to develop learning experiences that not only tap into mobile device use, but teach students ways to stretch skills of proficiency into deeper, higher level "inferencing" (School Librarian A) abilities and dispositions. Key to this are multiple literacies, and school librarians working to address them will not only be knowledgeable about the latest mobile devices, but will also develop multiple formats for using them educationally, and integrate their use into meaningful and creative learning opportunities. This might look like changing how teaching occurs, because the prevalence of mobile devices and eager adoption of them by students means that learning has become more complex. Papert (1993) expressed the notion that computers change the way children learn, a concept which supports the need for changes in how librarians teach students who own and use mobile devices.

Creating end products may seem exciting for students and teachers experimenting with newer technologies; however, teaching students how to locate, use, analyze, produce, share, and evaluate digital forms of information, while also instructing students about ethical use of technologies, must occur first as a foundational piece for higher-order learning. As described in the introduction to this dissertation, pedagogy must change in order for our students to become successful learners and contributors to a technological, global society. Desiring and promoting change is not enough, however; school librarians,

because of their unique roles as both leader and information specialist, will need to strongly advocate for equitable access to mobile devices for all students in order to give each child the same learning opportunities. In school districts where adoption of emerging mobile devices is lagging because of funding or policymaking, librarians need to be proactive and persistent to assure rich digital learning occurs beyond classroom walls. Other layers of advocacy are necessary for educating stakeholders' about the ways mandated filtering systems impact student access to resources.

Findings: Student Focus Group Sessions Share Suburban Teen Perceptions

Details for conducting student focus group sessions for this study are presented in the methodology section. Initial coding for the four sessions yielded 228 open codes with a total of 2,025 responses (Table 12), later subsumed into 24 focused codes (Table 13), leading to identification of 11 emergent categories (Table 14), later reformulated into six core categories (Table 15). Some initial code replication with the school librarian codes occurred, while new, previously unreported codes were reported. As in the school librarian interviews, coding occurred in an inductive, iterative manner, informed by steps recommended by Glaser and Strauss (1967) and Krathwohl (1998). Software coding program ATLAS ti (version 6.2) was used to assist in entering, developing, collapsing, and manipulating codes.

Student focus group sessions: Overview. The suburban teen participants reported frustration with district-required filtering. They valued their cell phones, smartphones, and other mobile devices, and desired unfettered access to Internet sites, device applications, and mobile device programs of interest. They are concerned with grades and assignment completion. They did not readily identify ELIS practices occurring in the school library, yet named several through the course of the four sessions.

The first focus group, comprised of all senior students, was the most reticent in describing their ELIS practices. Other groups, with mixed grade levels, were more forthcoming and were able, after prompting, to recall ELIS events, some that aligned with the urban teen study (Agosto & Hughes-Hassell, 2006a) ELIS topics and practices. They also reported new additions to the urban teen typology of people sources, communication media [which this study labels Mobile Devices Sources], other media sources, and information topics. A chief topic of discussion was the time that it takes students to login to school computers. The suburban teens were quick to rely on their mobile devices as a first source of "help" when seeing information of personal nature. They did not focus discussion quite so heavily on the practice of grade program examination, and discussions with teachers about grades, as did the school librarians. One message emerging from the sessions was that this group of students reported a desire to be treated like adults instead of children.

Student focus group sessions: Analysis. Key areas for analysis from the student focus group sessions include the filtering, personal information seeking practices, academics, devices, helps, and student perceptions of self.

Filtering. The code for FILTERING (272 responses/2,025 total responses, 13.43%) was a topic for the suburban teens that brought forth expressions of anger, disgust, and annoyance. Filtering is common in public schools, and practices such as this may be culturally mandated according to community standards. In the final focus group session, a White male junior student described how the filtering system causes the computers to slow down, affecting the login process: "The reason it is, they have to load all the blocking on there. Like when you start up a computer, it usually just starts up, but when you have all this password stuff on there and certain users can't access this, it had

to download all that." In the second focus group session, a White female freshman spoke angrily about the filtering system, saying "They basically just like cut everything off from the students in the school and just what you can and what you can't do. If it's not there, they don't let you do it. Pretty much everything, pretty much all people use, what they have at home [is blocked]." Adding argument to this topic was an Asian American female 12th grade student, whose demeanor was one of both acceptance and annoyance, as she described how some students rarely came to the library to find personal information because of filtering: "Well, I mean the only reason why I wouldn't get on the computers here is like there's no Facebook, and I know a lot of people get on Facebook on their phones and stuff like that, because you can. But here you can't, and I think that would be a big reason for kids to come in maybe, to check their Facebook, but since we can't, I mean I guess a lot of the kids don't."

Personal information seeking topics. When asked directly what types of PERSONAL INFORMATION SEEKING TOPICS (248 responses/2,025 total responses, 12.25%) students seek while working or relaxing in the school library, they initially nearly always said that they do not look for items of a personal nature while at school; their comments may be a form of reactivity (their understanding that they were subjects in the study). The same Asian American, 12th grade female quoted earlier, explained that she does not seek personal information topics while at school, and said, "I don't come in here for that reason. I mean if I'm in here and I happen to like think of it, I might look it up, but I wouldn't just come in here just to look at things. Like, people have their smartphones and computers at home that they do that type of stuff on." Personal information seeking topics varied a great deal, and included online shopping, cars, travel,

comparison shopping, fashion, YouTube music videos, YouTube "How to" videos, colleges, grades, and many other subjects, covered in more detail in this chapter.

Academics. The code for ACADEMIC WORK (153 responses/2,025 total responses, 7.56%) includes all manner of assignments and the actions students complete in order to fulfill assignment requirements. In every focus group students explained that they visited the library to complete work or projects. For many of them, a before-school trip to the library was expressly made for the purpose of printing out an assignment that was due on the same day. Just 15 student focus group responses dealt with visiting the library for the purpose of checking out a book for pleasure reading, or less than 1%. School work, at this site, takes precedence over other activities in the library. As a White, freshman male student said, "There's more people that like to do homework than read books." His comment spurred a White, freshman female to add, "The last time I read a book for fun was like last summer."

While student reporting of online grade checking did not include as many responses as occurred in the school librarian interviews, the activity of checking the online grade reporting system occurred as reported by students. Codes for GRADE CHECKING (10 responses/2,025 total responses, .49%) and GRADE CHECKING-SMARTPHONE (3 responses/2,025 total responses, .15%) were not heavily reported. A telling moment occurred, however, during Student Focus Group Session 3, when students were asked about their grade levels, and initially assumed the question related to their grade point averages (GPAs). The sophomores and juniors making up the group immediately began saying their grade point averages aloud – proof that grades and academics are in the forefront of their minds while they are at school.

Devices. Every student in each focus group session owned either a cell phone or smartphone. Other codes emerged for CELL PHONES/SMARTPHONES (152 responses/2,025 total responses, 7.56%), COMPUTERS (103 responses/2,025 total responses, 5.09%), IPAD TABLET DEVICES (84 responses/2,025 total responses, 4.15%), and DEVICES OTHER THAN COMPUTERS/IPADS (82 responses/2,025 total responses, 4.15%). Combined, mobile devices made up just over a fifth (20.95%) of all responses.

Logging into the computers at the study site took between three to 15 minutes (as tested by the researcher); the suburban teens who are eager prefer to bypass the login procedure instead used their mobile devices to efficiently carry out ELIS practices. Students who did not have mobile device data plans were subject to the same filtering system in place for computer and iPad devices. They were required to login into the school network and were not able to access blocked sites. Ongoing discussion between Student Focus Group Session 3 students showed, however, that some of them did not fully understand how their cell phones and smartphone access available networks.

One student, a 12th grade Asian American female, said that she had recently dropped her smartphone in the lake near her family vacation home. Her parents immediately provided her with a replacement cell phone, and she was waiting to buy the latest version of a newer smartphone model when it became available. Students described using their mobile devices for locating information because this method is easier than finding a computer in that they could access information anywhere they happened to be. They expressed negative emotions concerning the filtering system's effect on computer access, and yet they were also philosophical about being able to bypass the system, as

noted by one White, male 12th grader. “I mean yeah, half the school has smartphones though, so it honestly doesn’t matter.”

Helps. When students spoke about the code for HELPS (140 responses/2,025 total responses, 6.91%) included all manner of help received by school librarians and other library staff. Students spoke enthusiastically, describing forms of technological help they receive from school librarians. Their comments are encouraging; the urban teens described by Agosto and Hughes-Hassell (2006a, 2006b) held negative perceptions of their public library librarians and did not view them as a first-tier people source for help in personal information seeking practices. When asked who helps them find information of a personal nature, Suburban teens first detailed how they rely on their mobile devices for information seeking before seeking human sources. While this answer does not align with information provided in the urban teen study, it is significant, as it represents a new addition to their findings, and perhaps describes a form of self-actualization necessary for developmental growth (Agosto & Hughes-Hassell, 2006a, 2006b).

When asked about HELPS, two White sophomore students (one male, one female) immediately mentioned “my phone;” Mobile devices in this setting appear to be used an extension of “self” and this example shows how they have become seamlessly integrated into the lives of the suburban teens. Most students, however, spoke about how they usually knew what they were looking for and how to locate it. After “self” or “my phone,” students reported friends as people sources of information. Just one student mentioned “parents” as a potential people source of information. An Asian American 12th grade student described how she first tries to find personal information on her own, and then seeks friends for additional help: “ … but like usually my friends know the same things that I know, so if we can’t figure something out, if I can’t figure something out

usually they can figure it out. So, especially, usually as far as like using computers, like that's fine. It's usually like in class like when we're like doing projects in class, that's where I need help. It's not like outside of class stuff that I need help with."

Students answering questions in focus group sessions did not always remember the exact names of the school librarians or paraprofessionals, but their overall comments were complimentary of helps they received and appreciated. School librarians were primarily described as people who help students solve technology concerns; paraprofessional staff was described as being helpful when locating and selecting print materials, including books for pleasure reading. It is possible that because the researcher's role of school librarian that students in focus group sessions were complimentary towards school librarians as a type of politeness. Still, not one negative statement was expressed about library staff, and comments supported the overall impression that the librarians are perceived as helpful humans who students might seek out when they had exhausted "self" and friends as helps. Because this concept of first relying on personal mobile devices, such as smartphones, is new (it is not explored in Savolainen's (1995, 2008) discussion of ELIS theory either), the following section considers other "self" elements that suburban teens described.

Perceptions of self. As a final point of analysis for the student focus group interviews, embedded alongside the preference to rely on personal mobile devices for help are descriptions of what encompasses the word "self," perceptions formed by student responses. Initial codes informing this key focus were DESIRE TO BE TREATED LIKE AN ADULT (19 responses/2,025 total responses, .094%), STUDENT AS EXPERT ONLINE SEARCHER (16 responses/2,025 total responses, 0.79%), TREATED LIKE A CHILD (15 responses/2,025 total responses, .074%,), and HACKER

(2 responses/2,025 total responses, .01%). Combined, these codes equal .25%. The use of powerful descriptive language when reporting codes makes them worthy of inclusion for this discussion.

"We basically do whatever we want," reported a White, 12th grade female, adding, "so I don't see why we should not have the privilege to go where we want." Her peer, a 12th grade male v senior agreed, "Like you're just like trying to be an adult and you can't be, they treat you like a child." This same male later addressed the school's relaxed attendance policy, and expressed annoyance that minimal standards for attendance exist, instead of functioning more like a community college in terms of policies. "Yeah, but I mean you still, like your parents will find out or you get detention, like they have like, you still get in trouble for it. It's not like you just, it's not like in college where if you don't go no one is going to really care."

One 11th grade, White male student eagerly discussed his Internet searching abilities, detailing how he found the best price for a family cruise trip during Spring Break. "I'm the technology," he announced, reporting that his mother and sister "suck" at searching skills and depend on him to complete this function for them. He went on to describe how he used his personal computer (an Apple Mac laptop) and his smartphone (an Apple iPhone) to comparison shop different cruise lines for a trip to Cozumel and Grand Cayman. He said his family was able to book the trip at 60% off of regular prices, and that they traveled on the second largest ship in the world.

When two White, female freshmen students complained in Student Focus Group Session 2 that they were unable to use their smartphones without logging into the school network, an Asian American male freshman told them, "Yes, you can. I do it. I'm like a computer hacker." His counterpart, White freshman male, described how students can

access certain Google Images by using them at a smaller size. Blocking, he explained to the group, happens when the photo is enlarged and linked to the original site (which may be blocked).

Elements of the conversations shared in this section point, if not directly, to the type of *rule bending* activities discussed previously in this dissertation. The suburban teens at this site freely bend the rules, and seem to accept that this is a necessary act for fulfilling ELIS practices. They spoke of these issues in matter of fact tones, except when expressing frustration with the filter (just one student reported that the filter was "not a hassle"), and recognized that they hold powerful information tools in the palms of their hands. Another layer of rule bending occurred with students who frequently took "work breaks" to play or search using their nearby mobile devices. A White, 10th grade male stated that he tried to put academics first, even though he placed his smartphone next to his keyboard. "It depends on what it is. Like how important it is. Because sometimes it's like if it's not that important then I do both at the same time, but if it's like, if it's due next hour then I would obviously put away the phone and get it done." Mixing work with play is "what I always do," commented a White, female sophomore. Another female, a White junior, agreed that having a cell phone or smartphone nearby is important so texting can occur while academic work is being done.

Continued analysis: Emergent categories begin to locate the essence. As described earlier, the suburban teens did not readily identify themselves as conducting ELIS practices, yet ongoing discussion, and careful examination of interview transcripts revealed that many instances of information seeking behaviors and practices were discussed. Emergent categories include *personal information seeking* (516 responses/2,025 total responses, 25.48%). One compelling example involved the students

describing about how they consult YouTube "How-to" videos to help them with daily life problems or areas of interest. A White, ninth-grade male reported "I figured out how to install mud flaps on my truck because I had had the size and I couldn't figure out what to cut off, and I had to go onto YouTube to figure it out." His statement supports earlier findings detailing suburban teens' preference to rely on mobile devices first before approaching friends and other people sources of information. When consulting their mobile devices, these students also determine *where* to find help on their own; focus group participants recalled using similar YouTube videos to help them fix videogame consoles, learn how to fishtail braid their own hair, and teach themselves how to juggle.

Yet, couched within these examples of information seeking practices is the issue of the district-mandated *filtering* (272 responses/2,025 total responses, 13.43%) system affecting suburban teen use of library computers for personal information seeking. The same male who described using an instructional video to help him learn how to install mud flaps on his truck also explained, somewhat philosophically, why he believes filters are (incorrectly) in place: "A lot of sites that are reputable are blocked because of maybe one or two things that they don't like about it. And it's like they're more focused on your productivity but sometimes the blocks just hamper it." As a freshman, he said realized the importance the school places on academic achievement, yet has discovered the irony of being unable to connect with sites that might actually help him complete work. At the most obvious level, the district-mandated filtering system means that students using school computers may encounter barriers for ELIS practices. At a local level, because the school library staff installed a monitoring system, another level of constraint occurs when students are aware that library staff may view what is being shown on their computer screens. They easily avoid this by using their private mobile devices.

Hardware (269 responses/2,025 total responses, 13.28%) encompasses the machinery that suburban teens use in the school library. Classroom visits to the school library are common, and expectations for work mean that all students will use library computers at one time or another. Students expressed a preference for desktop computers over Apple Macintosh computers, and while they were able to use laptop computers, they reported that login times for this type of computer were even longer than for the desktop computers. Students also eagerly discussed iPad devices, with differing viewpoints. They reported liking the idea of being able to use them in the library, but also stated they understood that the fragility of devices such as this meant the school district would have to replace them if they were damaged. Because of the filtering program, it is likely, the students reasoned, that the very applications and sites they wanted to access via an iPad device would be blocked. "I was going to say, I don't think that would work too well because everything would be blocked on it. You couldn't play games. You couldn't listen to music. You couldn't do anything else. Everything on the web is blocked," surmised a White, freshman male student.

Student behaviors (79 responses/2,025 total responses, 8.84%) cover all actions conducted by students, as well as their expressed attitudes. Some of their activities include relaxing and working in the school library. Students generally described the library as a welcoming, comfortable place, but also admitted that policy mandates for obtaining library passes (and teacher willingness to let them leave the classroom) impact how often they visit the library outside of an arranged classroom visit. Students reported coming to the library most often to print papers; however, they also discussed locating library books (although these visits were far from frequently reported), sitting in chairs, eating and drinking food, and visiting with friends. The suburban teens expressed

aesthetic appreciation for the appearance and design of the library, and several pointed out the soaring windows that allow natural light to stream into the building.

Discussion is necessary for another emergent category: *cell phones and smartphones* (152 responses/2,025 total responses, 7.51%). With the emphasis this dissertation places on mobile devices, it would seem that findings for this category percentage might be higher; however, because these devices are such an innate part of the suburban teens' lives, it may be that their presence is taken for granted. The example, given earlier, of the female student who dropped her mobile device in a lake showcases this point. Her phone was immediately replaced, and plans were being made for purchasing a better model when it became available. None of the suburban teens reported having their mobile phones taken away as a type of punishment by parents. Ito et al. (2010) described restrictions on mobile phone use as a new type of punishment that has arisen with the use of new media. Mobile phones were not seen being confiscated in the library setting during the study. When asked what it would be like to have their phones taken away for a week, a senior White, male in Focus Group 1 groaned, replying, "Torture."

Core categories emerge. Six core categories (Table 15) emerged from the reduction of data through initial coding, and the collapsing of codes into emergent categories. Categories included resource riches, 21st century student seekers, 21st century student learners, filtering impacts learning, school culture, and school librarian roles. Core categories show that 21st century students, at this site, exist within a resource-rich environment surrounding their ELIS practices, and that this, in turn, impacts their work as student learners. When combined, the suburban teens roles' as personal information seekers and students working in a highly technological school library account for nearly

three quarters of all student focus group session responses or 70.92% of all responses. Students at this study site manage ELIS practices whenever and wherever they desire, as their mobile devices provide (most of) them with unfettered access to information resources. The suburban teens enjoy physical and network accesses to mobile devices beyond the norm; every single student in each focus group owned a mobile phone. Many of them reported having access to multiple computers at home, and several reported owning both Windows and Apple computing products they used for different needs.

The school library provides them with an impressive array of virtual learning resources in the form of online subscription databases and virtual libraries of eBooks. Just as the AASL (2009) Empowering Learners document described students in terms of the technologies they inhabit, so do the suburban teens. Their mobile devices make up an integral part of their lives and exist seamlessly alongside their roles as 21st century learners. "Today's learners have grown up in a 'wired' world. They have constant access to global information resources through computers and mobile devices, and they expect to be able to retrieve information instantly" (AASL, 2009, p. 11).

Set within this seemingly magical world of rich resources and unconstrained access is the district-required filtering program that the suburban teens say inhibits their ELIS practices occurring in the school library. Filtering issues may be conceived of current problems for students. However, these issues might eventually become negotiable steps in managing their cognitive growth and learning; for now, though, students must learn to exist and function within the barriers placed by filtering programs. This area is, in turn, affected by another core category; school culture. Schools make rules, which are situated within district policies, and those decisions ultimately affect all stakeholders working at school campuses. Combined, the filtering requirements and school culture

decisions that affect learning made up 22.17% of all responses (449 responses/2,025 total responses), a figure that bears notice because when students perceive that their learning experiences are being constrained, they may perhaps lose interest in more challenging instruction because of frustration with barriers.

School librarians (140 responses/2,025 total responses, 6.91%) were the lowest ranked category for people sources. This number is possibly influenced by the fact that the suburban teens first seek ELIS help through consulting their mobile devices, and then from friends, before approaching school librarians. The study site librarians, instead, are viewed by students as people who can help them solve technological issues. Because their mobile devices can bypass the filtering program, they have no perceived need for approaching adults for locating ELIS topics. While worrisome, it is important to remember that in general, students participating in the focus group sessions held the librarians in high regard. Negative opinions of library staff were not voiced.

Student focus group sessions and the central research question and subquestions. The central research question for this study asked: What are the ELIS practices exhibited by upper income students working in a highly technological school library setting? As reported by student focus group participants, the use of mobile devices (cell phones and smartphones in particular) informs their practice in ways that allow them to forgo using school library computers for meeting ELIS needs. On the surface, the suburban teens do not identify themselves as having or conducting personal information practices in the school library setting; careful listening to their answers, however, yielded a rich repository of ELIS events occurring while they worked in the school library. Their searches for information of a personal nature occur quickly and naturally as an extension of their mobile device ownership. The school filtering program does not deter their

information quests; rather, it is seen as a barrier that is annoying but surmountable. When the suburban teens look for everyday life information, they frequently do so within the context of completing assignments given by teachers. Because of their multitasking natures, completing work alongside "play" (ELIS practices) is not difficult, and in some cases provides them with a kind of "break" from work.

Subquestion 1. How do the students in a highly technological high school environment use physical and virtual technologies and other information resources provided by the school library? The suburban teens reported using smartphones as their most used mobile device. Students in the focus group did not frequently mention text messaging; this may be because the act of texting is inherent to their ELIS practices, or a reflection of their perceiving sending text messages as a *physical act* (one of tapping on a screen or keyboard) rather than an interactive resource. As described in the earlier student focus group analysis section, the suburban teens heavily used devices and mentioned them frequently. While text messaging, per se, is not a service provided by the school library, because of the welcoming attitude afforded mobile device users visiting the library, it then becomes an available virtual resource. Student-reported virtual technologies that were possible to use in the school library included: smartphones, cell phones, iPad tablets (including iPad apps and notification services), Kindle readers, iTouch devices, and iPods.

Other media sources reported by suburban teens were separated into ICT media sources and other sources categories. A second, preferred source, were the desktop computers in the school library; the teens mentioned using both Apple and Windows operating systems provided in the school library. Media sources that are passive, not shared, and unidirectional included books, newspapers, and magazines. One student

mentioned that he receives information that meets his personal information needs from an ICT media source, the school video news broadcast. This program listed times and dates for sports events, as well as the weekly lunch menu.

Subquestion 2. What are the students' most frequently expressed everyday life information needs? As occurred during the school librarian interviews, students in the focus groups sessions initially struggled to name their ELIS topics of interest. The suburban teens discussed the topic of academics frequently, describing looking for school-related topics of personal interest, such as test schedules, exam dates and locations, as well as checking grades online. Other ELIS topics brought forth during discussion were social activities, creative consumption (finding images for creating newer, mash-up style projects), gaming, cars, and travel. Gaming, cars, and travel were new additions to the urban teen typology (Table 16).

Subquestion 3. What people sources do the students consult when seeking information for non-school purposes when seeking everyday life information in the school library? Suburban teens reported that they first seek themselves, using their mobile devices as a conduit to seek information, as information sources when finding ELIS topics of interest. They also reported seeking help from school librarians, and friends. One might assume that because of the setting for the focus group session – a school library – and the physical viewing of the librarians working outside of the session room window, the students had librarians on their minds as they pondered the people sources question. They may have also been influenced when the researcher introduced herself as a school librarian from another district (reactivity effect). Would they have offered school librarians as a people source if they had been questioned in an alternate setting?

Just one focus group participant reported consulting a parent for help with ELIS practices, in contrast to the urban teens (Agosto & Hughes-Hassell, 2006a), who listed people sources in the following order: friends/family, school employees, mentors, customer service staff, other teen peers, librarians, and passers-by.

Subquestion 4. How do student ELIS practices in this upper income setting compare to urban teen ELIS practices? As detailed earlier, the urban teens lived in inner-city communities and fell into a lower socioeconomic classification (Agosto and Hassell-Hughes, 2006a). Student respondents in focus group sessions did not mention issues of socioeconomic status directly, in comparison to the school librarian descriptions of their affluence. There was not one mention of their membership in an upper income group. However, teasing out details of their discussion responses yields some information that allows for comparing the groups of teens.

When one young man in the student focus group session discussed shopping for a family vacation aboard the second largest cruise ship in the world, one could conclude that his family has enough money to take such trips, something that probably did not occur in the urban teen group. Students, by virtue of their brand-name apparel and proliferation of owned devices tell the story of a population with financial access to the latest in fashion and mobile devices. A White, freshman male spoke knowledgeably about property taxes for homes surrounding the school, and mentioned that those taxes helped to pay for educational resources, and added that the district installed a filtering system so that taxpayers' dollars would not be wasted on inappropriate resources. The 12th grade students, male and female, in Student Focus Group 1 all discussed how owning their own automobiles afforded them the opportunity to leave campus to go to lunch, and to go home after school instead of waiting for bus or parental transportation. Every single

student participant owned either a cell phone or smartphone. They all also detailed owning computers, sometimes multiple models with differing operating systems, in their homes, and they also listed ownership of other mobile devices. Nearly 70% of the urban teen Free Library participation group had home computer access (16 participants), and 54% from the Boys & Girls Club participant pool enjoyed similar access (11 participants). Average home computer use for both groups was nearly 63% (Agosto and Hughes-Hassell, 2006a), compared with 100% for the suburban teens (as reported in both focus group sessions and in online student surveys).

Both groups were volunteer participants in the research. Students in this dissertation study were present because compulsory school attendance is required, and they were physically present in the library for their regularly scheduled Advisory Class. Students in the urban teen study either visited or were employed by public libraries. The suburban teens were offered snack foods during the focus group sessions; urban teens were awarded modest compensation for the participation (Agosto & Hughes-Hassell, 2006a).

In terms of ELIS practices, the suburban teens determined potential boundaries and subverted them by using personal mobile devices when searching for information of a personal nature. Because 100% of them owned computers at home (from data provided through school librarian interviews, student focus group sessions), their information searches could also occur there. The urban teens without computer ownership most likely depended on school, school library, and public library computer access for meeting ELIS needs. For communication media, discussed earlier, urban teens listed face-to-face, telephone, and computers as their main communication forms for accessing ELIS topics. Media sources listed included computers, television, books, print ephemera, newspapers,

magazines, radio/CD players, telephones (automated), and school notebooks. Suburban teens listed their main mobile device sources as smartphones and MP3 players; and reported books, television, magazines, newspapers, and the school-provided closed circuit broadcast as their media sources. Because sources categories were changed to reflect emergent technologies (with new categories of mobile device sources, ICT media sources, and other media sources categories) reported data do not reflect exact comparisons with the urban teen study (Agosto & Hughes-Hassell, 2006a, 2006b); still, the preference for mobile device sources is clear when it became apparent how these types of devices are interwoven into the suburban teens' lives. In terms of actual practices, comparisons are not reliable because the urban teens did not have access to the same technologies afforded the suburban teens.

As described earlier, the practice of bypassing policy-mandated filters to access information of a personal nature was not a reported concern of the urban teens; they met ELIS needs in public libraries, which may be held to different community standards than are school libraries who serve primarily minor students. While some of their ELIS practice activities likely occurred in school library settings, this was not the focus of the urban teen study.

Hughes-Hassell and Agosto (2007) suggested that finding differences and similarities between different student populations is necessary in order to show teens share similar information needs, even while living very different lives in terms of socioeconomic status, ethnicity, social culture, and geographical boundaries. The two groups share ELIS topics of daily life routine, social activities, academics, current events, goods and services, popular culture, fashion, college, and creative consumption in common.

Subquestion 5. How do findings from this study affect implications for school librarians administering best practices for working with students? School librarians and student participants both frequently reported academics as an ELIS topic of choice. Librarians were able to view what students search for in the school library through happenstance – seeing what is on their screens when walking by, through frequent monitoring of where students go (which is a paraprofessional duty), or through one-on-one discussion. Because librarians did not provide a large number of observed ELIS practices occurring amongst teen patrons, it is possible that they are unaware of the depth to which the suburban teens use mobile devices to accomplish personal searching. If librarians are not being approached to help students with everyday life information needs, this points to a need for librarians to develop a better understanding of their charges, because they are entrusted with providing instruction that supports students' aesthetic and personal growth (AASL, 2009). At the same time, school librarians, in modeling the AASL-defined role of instructor, guide students in the ethical use of technologies. The school library setting for this study provides a prime example of both availability of and access to mobile devices that would allow for collaborative lesson-planning to occur in ways that accomplish both of these critical instructional requirements.

Findings: Edmodo Poll Online Survey Results

Five brief, checklist-style polls were administered in an online format to students on five separate dates. While there was a potential pool of 42 student participants, as evidenced by the student rosters shared by school librarians, not all students were present in their Advisory Class on dates chosen for administering the on line survey. Reasons for this include absenteeism, field trip attendance, sporting events participation, and opportunities for attending other school activities during the Advisory Class time.

Librarians, who were responsible for directing available students to the online site for polling, did not keep records of the number of students in Advisory Class attendance for each survey day; therefore, return rates are not calculable. Poll 1 was completed by 29 students; Poll 2 was completed by 29 students, Poll 3 was completed by 10 students, Poll 4 was completed by seven students, and Poll 5 was completed by 10 students, yielding a total of 85 student respondents.

The polls were hosted online through Edmodo, a secure educational site used by teachers working with students. Librarians reported that time allowances for poll completion varied, because of school activities occurring in other parts of the school. On the day Poll 4 was given, for example, students were presented with the opportunity to move to the gymnasium to watch a student/teacher dodge ball game. Activities such as this lessened the potential pool of poll respondents. School Librarian A was on maternity leave for the final two polling sessions (Poll 4 and Poll 5), which meant that School Librarian Sub, who was unfamiliar with the polling process, provided assistance. It is probable that Librarian B was tasked with managing student poll completion by herself.

Edmodo poll 1. Students were asked to report if they have computer access at home, and could choose to select either "yes" or "no" for the "Tech Use" poll. They were also asked choose amongst listed categories indicating which mobile and ICT devices they used the previous day (Tables 17 and 18). Twenty-nine students responded, and all of them (100%) reported being able to access computers at home.

Cell phones were the most commonly used mobile device used by students on the previous day, and account for 96.55% of responses (28 responses/29 total responses). Just over 93% (23 responses/29 total responses) reported watching television, and 86.21% (21 responses/29 total responses) said they used a laptop computer the day before they

answered this poll. Mobile devices such as iPods, or other MP3 players, iPads, and eBook readers were also used by students. The most frequently reported form of mobile device use was cell phones; of the 29 respondents, just one student did not check off this selection. Because this category was not broken down into cell phones and smartphones, distinction between the two forms of mobile phones is not available. Cell phones are commonly used by the suburban teens, and all of them are able to use computers at home. Television watching was an activity reported by 27 of the 29 students.

Edmodo poll 2. The "Media in Your Life" poll (Table 19) asked students to provide more detail about mobile device media they interact with and use. Twenty-nine students responded to this poll, and overwhelmingly, 96.55% (28 responses/29 total responses) of them reported sending and receiving text messages. Slightly more than 86% (25 responses/29 total responses) of suburban teens also selected iPods or other MP3 players as mobile devices they use in their daily lives. Twenty-three students listed television, accounting for 79.31% (23 responses/29 total responses) of respondents.

Two potential choices, "netbooks" and "other," were removed from results because they received no responses. Eighty-six percent (25 responses/29 total responses) of teens used iPods and other MP3 music players, and slightly more than 79% (23 responses/29 total responses) watched television. Mobile phone use includes cell phones (19 responses/29 total responses, 65.52% of responses) and smartphones (13 responses/29 total responses, 44.83%). Total response counts for both types of mobile devices equaled 32 responses, meaning that some overlap occurred among student users. These results might also mean that participants first chose to mark cell phone selection first, and then mistakenly also checked off the smartphone selection option, or simply forgot they had checked an earlier option as they went through the list. More than 65% of

students (19 responses/29 total responses, 65.52%) used telephones as media sources, and half of respondents used videogaming systems (17 responses/29 total responses, 58.62%). Only one student reported using phonebooks as sources of information, but four students selected "product catalogs", accounting for 13.79% of responses (4 responses/29 total responses, 13.79%).

Suburban teen responses for this poll indicated that they use mobile devices and other forms of media daily. Music and television were important aspects of their media lives. Viewing online television was reported (16 responses/29 total responses, 55.17%), and there was a gap between this category and standard television viewing (79.31%). Cell phone and smartphone use existed alongside telephone use, which means that for at least 19 students answering this poll, there was a telephone landline in use at home. More than half of the students (16 responses/29 total responses, 55.17%) accessed online school sites to inform their information needs.

Edmodo Poll 3. For the "Who are Your Go-To People?" poll, students selected which people sources they might approach for help when meeting ELIS needs (Table 20). A total of 10 students responded to this poll. The selections for public librarian, other school employee, neighbor, tutor, boss, and "other" were removed from the final results because none of them were chosen by respondents. Nine out of the 10 students, or 90%, chose "Friends" as a primary people source, and 80% of students answered the poll (8) chose "Parents" as a people source they would approach.

Results for this poll show that "Teachers" (70%, or 7 respondents) ranked slightly higher than did "School Librarians" who received 6 responses (60%). The suburban teens were not given the choice of "self" or "mobile device" and results would likely be different had this selection been offered. Just one student chose "Doctor" as a people

source, indicating that perhaps s/he might seek health-related information from this source, but because further probing of student responses was not a part of the poll, this assumption cannot be assured.

Edmodo Poll 4. The fourth poll, titled "What I Look For," was completed by just seven participants. From the results it appears that the students filling out the poll may have incorrectly assumed that they should choose one information topic, instead of several. Results from this poll are not reported here because of issues described above.

Edmodo Poll 5. The fifth poll asked students questions about the school library website and the virtual, Web 2.0 offerings provided through the site, and also included purchased subscription database programs (Table 21). School librarians direct students to this site when they come to the library for arranged classroom instructional visits, and when students are working on their own or in small groups in the library to complete assignments. A total of 10 students provided responses for this poll, titled "The Library." The first checklist question provided a listing of the virtual resources provided through the school library site and other sites linked through the library home page. Two of the original selections were taken out of the final results because they were not chosen by respondents. The second, open-ended question asked students to relay what they like about their school library. All mentions of the school library names have been removed from poll results shown in this section. In the poll that students saw, the library name appeared in front of each choice.

Nearly all students (9 respondents/10 total respondents, 90%) reported using the school library website, which is a "launching place" for all other virtual resources. Eight students (8 responses/10 total responses, 80%) chose "LibGuides" as a resource they use through the library web site. Of the 10 respondents, four respondents (40%) reported

using Google Docs as a resource through the school library's web page offerings. Poll Daddy Polls, the interactive, online polls that the librarians reported seeing students enjoy using, received 3 responses out of 10 total responses, or 30%. Other selections received fewer responses, and included the library's online subscription databases, social networking accounts hosted by the library including Twitter, Facebook, Viddler, and Flikr pages, and the iPhone app developed by librarians for helping students to access the subscription database products from their mobile devices. Students who responded this poll used the library website. Their responses indicated they are familiar with features of the site, and use them to varying degrees.

Suburban teens shared a variety of responses for the open-ended question "What do you like about the library?" (Table 22). Two responses directly related to "helps" provided them from library staff. Computers were referenced in two of the answers, and participants reported appreciation for library design aesthetics, describing it as "pretty," containing "open space," and having "the windows and the sunlight." The tenth respondent's answer of "all" was vague and not helpful. Two answers relate to resources, and it is possible that students thought about these aspects because they had just completed a virtual offerings checklist in the first part of the poll. Question response answers were short and not given in full sentences; because of scheduling, respondents may have been hurried while answering poll questions, or may also have been reverting to a familiar form of "texting" writing in lieu of creating complete sentences and paragraphs.

Edmodo Polls: Analysis with other data. Examination and analysis of Edmodo Poll responses provides a blend of confirmation and new information. The people sources poll, for example, showed that suburban teens seek out friends first before other people

sources of information (with nine out of 10 students selecting this choice). However, when "Teachers" (7) and "Guidance Counselors" (4) were combined, results changed slightly to rank "Other school employees" (with a total of 11 responses) higher than "Friends." While school librarian interview responses indicated that students choose to consult their friends first, and student focus groups indicated that students choose to rely on mobile devices for locating ELIS topics, respondents for this poll prefer to first approach teachers and guidance counselors for help. This statement is not totally supported however, because "Self" was not a choice of selection for the poll.

Some poll information does corroborate data uncovered by other collection methods. Cell phone use (96.55%) ranked heavily, as did the act of sending and receiving text messages (also 96.55%). These selections were also present in the school librarian interviews and student focus group comments. Computers also ranked high in terms of media used, with poll results showing desktop computers with 79.31% use, and laptop computers with 72.41% use; 51 responses were counted indicating that suburban teens taking the poll had used either a computer or laptop computer (or both) on the previous day.

Suburban teens completing the polls also indicated that television use was not atypical, with 23 out of 29 respondents choosing this form of media. Videogaming systems were used by 17 of the 29 respondents on the previous day. This aligns with what the student focus group sessions uncovered, and gaming represents a new category for the urban teen ELIS typology (Agosto and Hughes-Hassell, 2006a, 2006b).

An issue with comparing polls with the other data collection methods occurs in that labels for items may not have indicated the true meaning for what students perceived; students may have selected both cell phones and smartphones when mobile phones would

have covered both types of devices. Offering a selection of "parents of friends" as potential people source of information is not useful for comparative purposes because similar choices were not reported by the school librarians and the focus group participants, and seeking friends of parents would not likely be observed happening in the school library setting. While the polls add to the overall data pool for this study, and indicate some confirmations as well as differences, they cannot be considered direct comparisons with school librarian interviews and student focus group sessions. Answers for the open-ended question are of interest, but do not contribute new information for answering research questions.

Edmodo polls and the central research question and subquestions. The central research question asked: What are the ELIS practices exhibited by upper income students working in a highly technological school library setting? Poll responses indicated that students use mobile devices in their lives, and other media included television and radio. One media source not covered in earlier data analysis was the viewing of online television (16 responses/29 total responses, 55.17%); and this represented a new addition to the developing suburban teen ELIS typology.

Subquestion 1. How do students working in a highly technological school library environment use physical and virtual technologies and other information resources provided by the school library? A typology of mobile device sources was developed (Table 23), with responses from a total of 85 participants providing responses across a total of five polls; each respondent could answer questions more than once in order to indicate preferences.

This developing typology indicates that text messaging (28 responses/187 responses, 14.97%) was the most popular form of mobile device sources accessed by the

suburban teens. Following closely was iPod (or other MP3 player) use (52 responses/187 total responses, 13.37%). Cell phones and smartphones held nearly equal ranking. For other ICT sources, students reported recently using both desktop and laptop computers (44 responses/187 total responses, 23.53 %). Of interest are the nine respondents (9 responses/187 total responses, 18.75%) who indicated they use instructional video, provided through YouTube, to inform their daily life information needs, a fact that aligns with focus group descriptions of suburban teens' use of YouTube videos to learn how to repair videogame consoles, install mud flaps on trucks, fishtail braid hair, and juggle.

ICT media sources reported by students provided additional comparisons (Table 24). Television ranked highest as another form of media used by the suburban teens, followed by radio. Other ICT sources included online school materials, and online television. Study participants preferred television and radio as their main ICT sources, and responses (respondents could choose some selections more than once) indicated that suburban teens use categories of other media that require reading skills. Sources for the other media category (Table 25) included books, newspapers, and magazines, as well as telephone books, product catalogs, and printed school material.

Subquestion 2. What are the students' most frequently expressed everyday life information needs topics? Results from the "What I Look For" poll are not reliable - this question was answered by seven students, and it was apparent that respondents may have believed that they could only answer one selection from a total of 20 possible choices. Because such a small pool of participants answered the poll, and from the determination that students may have assumed they could provide just one answer, findings from this poll are not considered valid.

Subquestion 3. What people sources do the students consult when seeking information for non-school purposes when seeking everyday life information in the school library? Responses to this poll (Table 26) showed that suburban teens first seek friends (9 responses/10 total responses, 90%) for helping them to meet ELIS practices. They also approach parents (8 responses/10 total responses, 80%), teachers (7 responses/10 total responses, 70%), school librarians (6 responses/10 total responses, 60%), and then guidance counselors (4 responses/10 total responses, 40%). As described earlier, when teachers and guidance counselors are combined into one category of people sources (11 responses), the results change slightly, and this combined category ranked higher than school librarian category (six responses).

Subquestion 4. How do student ELIS practices in this upper income setting compare to urban teen ELIS practices? The 29 student respondents reported 100% of them have access to computers in their homes, in contrast with the 27 urban teens with 63% average home computer use for both groups (Agosto and Hughes-Hassell, 2006a). A proliferation of mobile devices, particularly including cell phones, smartphones, and MP3 players, were used by suburban teens, while urban teens used more traditional sources of communication and other media, such as telephones, television, books, newspapers, magazines, and school notebooks.

Subquestion 5. How do findings from this study affect implications for school librarians administering best practices for working with students? Edmodo poll results confirmed other data collection method findings: suburban teens own and use mobile devices to help inform their ELIS practices. Because the students listed teachers and guidance counselors as primary people sources, after friends and parents, it would behoove school librarians to include these additional people sources when forming the

earlier recommended learning partnerships with students. As instructional partner (AASL, 2009), librarians must collaborate with classroom teachers to create and evaluate policies, practices and curricula. An extension of this concept means that all school employees are a part of the learning partnerships that librarians initiate. If this is true, teachers, coaches, and guidance counselors, and even administrators, must be educated in order to help stakeholders understand the digital world today's students inhabit.

Findings: Suburban Teen Typology of ELIS Practices

A comparison (Table 27) of the suburban teen ELIS Typology and the urban teen (Agosto & Hughes-Hassell, 2006a) ELIS typology was created from school librarian interview data, student focus group data, and student Edmodo polls surveys. Comparisons like this help to illuminate similarities and differences between both groups. Mobile device and ICT innovations have advanced rapidly since the urban teen study was conducted, and some types of media sources and ELIS topics represented new additions to the urban teen typology. The suburban teen typology lists mobile devices sources, ICT sources, and other sources of information in comparison to the original typology listings of communication media and media sources, a change that was made so that newer technologies and technology uses were represented. Mobile devices and ICT sources were shared, active and multidirectional, and other media sources were not shared, were passive, and unidirectional. People sources were also modified, in that the suburban teens introduced the concept of seeking the "self" for ELIS topic fulfillment through consultation with their mobile devices, an idea that is not present in the urban teen typology.

Findings: Print Documentation

Sixteen types of print documents were collected through the course of the study. Examination of these artifacts was conducted with the goal of gaining deeper understanding of library operations set within the school and district culture. Items include a State Department of Education report about the school, district news magazines and press releases, a local newspaper article about the district, school newspapers, a student planner, the school bell schedule, library class schedule, and the library database access information sheet. An analysis protocol was not used; print documentation was examined so that description of the study site was thorough and detailed.

State Department of Education report card. The school "report card," an annual data listing published by the State Department of Education, provided assessment scores and other forms of data for demographics, graduation rates, and teacher licensure. Attendance for 2010-2011 was 96% at the new school, compared with 96.5% for the district, and 94.9% for the state. Other report card data is included in the study site section in Chapter 3.

District-published materials. Two district news magazines were examined, and contained messages from the superintendent, articles about budgeting activities, news features about teaching staff, student achievement news, and updates for construction projects. Advertising panels in the magazines include local clothing boutiques, car dealerships, restaurants, music lessons, tutoring programs, animal hospitals, and local hospitals. Two district press releases were examined, one announced that the school study site was named to a Newsweek list of the top 1,000 U.S. high schools (discussed in an earlier section of this paper); the other relayed information about the average ACT composite score for the district (also discussed earlier).The publications framed the

district “personality” as one that is progressive, dedicated to creating college-ready students, and is also caring.

Newspaper articles. A local, metro newspaper article suggested that ACT scores were highest in schools that have fewer poor children, and cites poverty as an obstacle inner city areas share in attracting new residents and companies that will provide employment (Abouhalkah, 2011). This article supports data uncovered in school librarian interviews: the school district provided students with a “more rigorous learning environment,” better opportunities for college admittance, and financing [through collection of taxes] from middle- to upper-income residents. Three issues of the student-produced monthly school newspaper were examined. Articles provided a glimpse into the social, academic, and creative worlds students inhabit. Some examples of topics covered included evacuation of orchestra students while performing in Hawaii; energy beverage binging; resume padding and competitive students; comparisons of conservative, moderate, liberal student opinions on topics such as intervening in Libya; and election issues. Student newspapers also contained articles featuring student sports and performance events, as well as discussions of popular culture offerings. Advertising included nail care, nutritious smoothie drinks, salons and day spas, swimming pools, and tanning services.

The student newspapers support what students and school librarians described during the data collection process. An emphasis on academics and gaining admittance to colleges and universities is clear. Elements of the upper-income lifestyles of the students are portrayed, in striking difference to the described lives of the urban teens, many of whom face “a harsh reality of poverty, prejudice, and a strong lack of role models” (Agosto and Hughes-Hassell, 2006a, p. 1394).

School materials for students. A small, spiral-bound notebook was given to every student during the first week of school, and provided detailed information about academics, attendance, behavior and discipline, support services, athletics and activities, maps, a blank calendar for keeping track of assignments, and a calendar of school events. One section of interest in the student planner was titled "The Three Step Study Process" (p. 28); this guide aligns with suburban teens demanding instructional models that explicitly describe how to correctly complete assignments. Included in this section are test-taking strategies.

The class schedule for each week at the study site included regular and block-schedule classes. School started at 7:45 a.m. and ended at 2:50 p.m., with the exception of Thursdays, when school began at 9 a.m. Four 21-minute lunch periods were provided, and passing periods were six minutes long. Information from this form of print documentation was used to plan interviewing and focus group session times, so as to not interfere with regularly scheduled classes. Teachers were required to first consult with librarians before bringing classes to the library for instruction, and to fill out their requests in a library schedule book which includes dates for visits, the teacher name, the class subject, student grade levels, and intended outcomes. The schedule was useful because it showed that this particular school library provided formal instruction to students nearly daily; it also provided a snapshot of the variety of projects: maps, research projects, historical newspapers, research papers, book talks, note cards, synthesis paper, citing sources, PowerPoint presentations, paraphrasing, persuasive papers, AP study guides, and public service announcements. Web 2.0 products used to help create end products included Animoto, Bitstripes, PhotoStory, online flashcards, Audacity, and Jay-Cut. Curriculum subjects covered included math, social studies, performing arts,

special education, physical education, health, science, interdisciplinary studies, communication arts (English), foreign languages, and speech. This document provided evidence that librarians at the study site fulfill AASL (2009) roles as instructional partner, information specialist, and teacher.

Database URLs, and passwords and logins were provided on an orange sheet placed on top of every computer station in the library. Students could access 15 subscription database products, and the codes for accessing the Xerox brand photocopier were also provided. This information detailed the wide variety of virtual database products, including eBooks, students could access. The state in which the library functions also provided database products that added to the robust collection offered at the school.

Print documentation overview. The documents described in this chapter provided additional forms of data collection. Protocols for analysis were not used; rather, documents examined helped the researcher to place the school library within larger cultures of the school, the district, and the city.

Findings: Virtual Documentation

Virtual documentation sources for this dissertation included the school's virtual presence via the school library web page and online resources.

Virtual documentation findings: Virtual presence. The library web page functioned as a portal site for gaining quick access to social networking sites hosted by the library, and to the library LibGuides and online subscription resources. During the time frame for the study, School Librarian A was primarily responsible for maintaining the page, which was created with Dreamweaver software. The library page received 29,993 page visits for the 2010-2011 academic year.

LibGuides, the online resource product on which librarians place assignment-specific resources, received 3,080 visits for the months of January through May during 2011. When students visited the library for instruction, they were provided with LibGuide URLs that access pages detailing assignments, resources provided by the school library, and links to other resources. Students were encouraged to use this resource, but it was not a class requirement. The librarians used LibGuides as a platform for their monthly newsletter to teachers, and reported they did not know how many teachers accessed the newsletter each time one was published. The newsletters described library instructional events, provided useful Internet links for productivity and teaching, and shared recommended books for young adults.

The library hosted 151 photos of student projects, displays, library events, and computer screen shots showing steps for creating specific types of citations on Flickr; this site received 13, 770 views for the academic year 2010-2011. Students shown in the photos are not readily identifiable. The library's Twitter page had 14 followers at the time the study was completed. Librarians used this page to remind students about upcoming events and share sites of interest. The library's Viddler account, a video hosting program, received 191 views during the academic year 2010-2011, and 151 of those were visits from mobile devices using an app provided by the site. Librarians provided short videos detailing the steps in creating citations for different sources, how to navigate the library web page, instructions for installing the site mobile app on smartphones, and directions for sharing a video example of a finished student product. Statistics were not provided for the library's YouTube page, which was still in development and was later removed. The library's Facebook page received 16 "likes" during the academic year 2010-2011. Posted status updates included book recommendations, reminders about upcoming college

entrance exams, and links to sites of interest to students. Poll Daddy, an online survey tool, received 5,737 "hits" for all polls hosted during 2010-2011. The most popular poll, according to the librarians, was "Favorite Fast Food" (2,300 respondents). Poll Daddy polls are short, interactive polls that provide immediate feedback. Students could answer polls more than one time. Librarian A indicated that placing the polls on the library page was a way to draw students into the page, and poll results were not used for later projects.

The librarians did not describe how they promoted the various virtual sites they hosted; linked icons for all of the social networking locations appeared on the library web page. The library has a strong virtual presence; however, exact connections of how students accessed and used those pages are unknown. The most useful data for these sites came from School Librarian A's interview session, when she described how much students enjoyed taking the Poll Daddy polls. Because the library was new, development of these virtual sites was still in process, and the librarians were evaluating which sites to continue using and which ones to cancel.

Virtual library materials provide access to resources, including online subscription databases, 24 hours a day, seven days a week. As an information specialist, the librarian "uses technology tools to supplement school resources, assist in the creation of engaging learning tasks, connect the school with the global learning community, and communicate with classroom teachers and students at any time" (AASL, 2009, p. 16). The role of leader is also fulfilled in this capacity, because the librarians take charge in finding, using, and sharing virtual resources with teachers. Collaborative development of virtual spaces fulfills a portion of the program administrator's role for school librarians.

Findings Discussion: Suburban Teens' and Urban Teens' "Selves"

One goal for this study is to explore relationships between the urban teen "selves"

(Agosto and Hughes-Hassell, 2006) described in the Theoretical Model of Urban Teen Development (Figure 1) and those exhibited by the suburban teens.

The "selves" identified by Agosto and Hughes-Hassell (2006a) provided detailed descriptions of the developing, holistic adolescent-in-process. One way to find comparisons is to determine which of the "selves" was not evident from data collected. As a reminder from earlier discussion, urban teen "selves" included: a) *the emotional self*: the adolescent's "inner world of feelings or emotions" (p. 1399); b) *the reflective self*: the adolescent's inner world set within an introspective context; c) *the physical self*: the adolescent's interactions with the external world; d) *the creative self*: the adolescent's aesthetic needs, fulfilled through creation of products and acts, and through evaluation or judgment of creative works; e) *the cognitive self*: the adolescent's "intellectual comprehension of the world, as opposed to his or her personal reactions to elements of that world, as included under the emotional self" (p. 1399); and f) *the sexual self*: the adolescent's awareness of personal sexuality, sexual health, and understanding of healthy sexual practices.

Suburban teens' ELIS topics included: academics, social activities, daily life routine, current events, fashion, college, creative consumption, gaming, goods and services, cars, travel, pop culture, and social/legal norms. In this section, each suburban teen ELIS subset is compared with "selves" subsets in the Theoretical Model of Urban Teen Development.

Academics. In the suburban teens' typology, the category of *academics* was the most frequently reported topic. For this population, academics within an ELIS context means that students take time to look for online grade reports to assure accurate recording, and to scrutinize them as a means of keeping current on grade point averages

and class standing. Conducting such searches informs their need to know how well they are doing in school, and aligns with familial expectations that earning stellar grades will gain them admittance into the best colleges and universities. ELIS practices informing academics relate to the *cognitive self*; students are approaching their world from an intellectual perspective and determining how to meet their goals for post-secondary education.

Social activities. Practicing and playing sports, playing fantasy football online, and attending sporting events were topics for which suburban teens reported seeking personal information. Locating sports scores was a frequently reported activity, as was viewing ESPN sports videos. The students also reported looking for information about formal school dances, and clubs, including club meeting dates and times. These ELIS practices align with two of the selves: the *social self* and the *physical self*. Seeking information about personal participation in team sports represents the *physical self*; students are learning to adapt to physical changes. Playing sports online and checking sports scores represents a social level of sports participation in a non-threatening way. Social events comprised a large amount of the suburban teens weekly time available for activities. They frequently mentioned needing to attend social activity functions immediately after school was finished for the day. The ELIS topic of social activities, then, relates to two subsets: the *physical self*, and the *social self*.

Daily life routine. Students studied reported checking their e-mail accounts, and looking for information about testing dates, sports and school functions, and school information such as hours, phone number, e-mail contact, and address. Locating information about theater and restaurant opening and closing hours was also reported;

these actions support the *cognitive self*, in that increased cognitive abilities allow students to plan ahead for future events and to anticipate needs before they occur.

Current events. The suburban teens read newspapers and magazines, and watched news programs on television, particularly when they were in the school library. They also viewed online news sites, including CNN. They reported that viewing CNN on the large-screen televisions in the library occasionally caused them to investigate the stories they saw by simultaneously searching for them online. Finding out more about the world at large is an expression of cognitive interest and growth, and this ELIS practice places interest in current events within the *cognitive self.*

Fashion. From observations conducted, and data revealed by school librarian interviews and student focus group sessions, the suburban teens are able to afford the latest new apparel. They displayed their interest in this topic through online searching for clothing and shoes, and shopping online for event-specific items such as formalwear for dances. Their interest in fashion and obtaining clothing items is a manifestation of the *social self*, the behaviors in students that cause them to want to fit in with others and to also care about their personal appearance.

College. College was forefront in the minds of the students studied. They visited college and university sites online to look at admission requirements, course offerings, and descriptions of majors. They also accessed college entrance exam sites to obtain information that helped them to make decisions about testing locations and dates that fit into their lifestyle. Another behavior that influenced ELIS practices is that of choosing "safety schools" in case they did not gain admittance to their first college choice. Suburban teen behaviors included looking for AP scores online to determine if scores are high enough to earn college credits. These ELIS topics inform both the *cognitive self* and

social self. Information sharing about colleges was common among students observed; there are social elements involved with determining the pathways leading to university choices. Students also expressed layers of cognitive ability as they searched for their preferred colleges and consider AP scores, available scholarships, course prerequisites, admission requirements, and the other described college ELIS topics.

Creative consumption. This topic involved suburban teens locating online photographic images that are collected and used to create other product formats, in a type of mash-up activity wherein original works are merged with student-created works in order to create new products. One student described building collections of photos and saving them in separate files for potential later use. Students reported retrieving Google Images photos for optimal viewing in ways that keep the image's aspect ratio from being skewed. Other students sought photos from Facebook accounts for completion of class projects, and from school dances and team sports activities. These activities justify the *creative self*.

Gaming. Playing online games, using videogaming consoles, constructing personal videogames, seeking information about videogame news updates and new product releases were information activities described by the suburban teens. This topic category represents a new addition to the urban teens' ELIS typology, and exists in more than one category. At first assumption, these practices are social ones – playing games online with other players, playing videogames with players both present and unseen, and seeking information about videogame updates and releases. They inform the *social self.* On another layer, these activities also inhabit the *cognitive self* and the emotional self. Increasing cognitive abilities mean that suburban teens can play games that require prediction, abstract thinking, and increased memory capacity. However, videogaming and

online gaming may include individual activities that are not shared with others, such as when a sole player works through gaming levels without elements of competition or interaction with others. This may represent the *emotional self* in that students use solo gaming as a means of avoiding forced socialization with others. This study was not undertaken to determine what the suburban teens' gaming habits include, or how such behaviors impact ELIS practices.

A potential new "self" is worthy of exploration, however, and this is the *playful self*. Creating this new subtopic makes sense, because it also describes concepts the suburban teens exhibited when they recounted blending work and play together through use of their mobile devices. Ito et al. (2010) discussed recreational gaming, and cautioned describing notions of game play solely within cognitive or developmental frameworks, noting "game play practice and activity are situated within a broader set of cultural and social engagements and contexts" (p. 199). Dewey (1944) considered play an important component of growing into adulthood, one that may scaffold learning opportunities into the future world of adult work. "Work which remains permeated with play," he states, "becomes art – in quality if not in conventional designation" (Dewey, 1944, p. 206).

The urban teen study did not detail elements of play or playfulness, a factor that may relate to their different life scenarios. For the purposes of this dissertation study, creating a theoretical model of suburban teen development requires adding a new subtopic: the *playful self*, an amalgam "self" that supports teen emotional growth in developing peer relations, determinations of self-identity, increased cognitive abilities, and constructing creative acts. Rather than placing gaming in all of these subtopics, the *playful self* describes teen developmental growth in a more thorough way as a new construct of the other selves. Keeping in mind Savolainen's (2008) discussion about

investigating ELIS practices occurring in non-work situations, acts of play by suburban teens represent the meshing of work and play that Dewey (1944) reported are typical early childhood behaviors that impact learning. He also described acts of play as *necessary*: "No demand of human nature is more urgent or less likely to be escaped" (Dewey, 1944, p. 205).

Goods and services. Comparison shopping encompassed some of the behaviors that help to support the ELIS practices, and actions involving goods and services exist within more than one of the selves. Suburban teens may come from affluent families, yet several of the study participants expressed a desire to find the "best deal," such as the male student who shopped with his smartphone to locate the best prices for a luxury cruise vacation. Students also discussed the merits of shopping for books in person, and buying eBook versions for Kindle readers at lower prices than those charged for hardback print books. Another example occurred when students were observed discussing different types of car insurance and locating payment calculators to determine down payment amounts for purchasing new cars. Pragmatic activities, for students who live in affluence and express ELIS practices related to their lifestyle, are both aspects of the *social self* (students exist in a society where money is discussed and most of the material items they desire are available for them to purchase) and the *physical self* (finding the best prices for the items they want is a practical, daily life routine). Comparison shopping also involves elements of the *cognitive self*, as reasoning and comparison are qualities that may not fully develop until teens reach adulthood, but share beginning with higher levels of abstract thinking and predictive qualities of thought.

Cars. Personal transportation, for the urban teens, represented a form of daily life activity and was not listed separately in the urban teen ELIS typology. Suburban teens

managed their transportation needs through ownership of vehicles they drove to school and social events. Their cars and trucks were important to them as evidenced by observed discussion concerning hail damage from a recent storm, and how insurance payments impact the purchase of replacement vehicles. For these students, ownership of cars and trucks conveyed more than the necessity for traveling from one point to another. They looked for cars online, examined parts and modifications (mods) that could change the appearance of their vehicles, shopped for car insurance, and argued over which models were the best. One student, in comments from a focus group session, reported he had just been looking at a $90,000 car. For suburban teens, cars were status statements and a part of their social world. Therefore, the ELIS topic of cars is placed within the *social self*, the *physical self*, and the *emotional self*: car ownership means students are: free to socialize with peers in various settings, able to navigate the physical world they inhabit, and possess a powerful tool for breaking away from dependence on parents.

Travel. Suburban teens living in affluence are able to travel to places outside of the city where they live. One student worked in the school library to make up an exam because she had travelled to another country when the exam was originally administered. Another student, a male, described how his family vacationed onboard a luxury cruise ship sailing to Mexico. Travel is an ELIS topic that falls within the *physical self*, how teens navigate their physical world. It also has *social self* implications, because people who travel not only leave the area in which they are familiar, but also travel to places where they encounter people from other cultural groups. Travel also affects students' emotional growth in how they learn to place themselves within their surroundings, whether at home or on trips, and this supports the *emotional self*.

Pop culture. Data collection uncovered examples of students seeking information

about musical performers Justin Bieber and Michael Jackson. They used library computers to find information about actors starring in the movie *Hangover II*. ELIS topic searches such as these, wherein suburban teen display an interest in popular culture, include behaviors that are situated in the *social self*, which implies that students work to inform their understanding of the social world within which they live.

Social/legal norms. This ELIS topic was described by the school librarians, who reported seeing students access an online county court records site with the express purpose of finding out which friends (and teachers) were cited for traffic violations. Court records for residents aged 18 and above are available on the site, and include criminal and civil violations as well as marriage and divorce records. This topic covers two of the selves: the *reflective self* questions what is right and wrong and determines a belief system; the *social self* involves a young person's understanding of how the social world works and their place within it.

The Modified Theoretical Model of Suburban Teen Development

This dissertation adds a new dimension to the existing Theoretical Model of Urban Teen Development (Agosto and Hughes-Hassell, 2006a). The *playful self* informs the suburban teens' ELIS practices described in this chapter, and includes elements of conducting *activities* within ELIS practices for fun and enjoyment. Creation of a Theoretical Model of Suburban Teen Development (Figure 3) lends additional information to the knowledge base for studying adolescent ELIS practices, particularly for those young people who conduct ELIS practices in school library settings.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Study Purpose

The purpose of this extended case study is to discover how upper income students, working in a newly constructed, highly technological Midwestern school library, exhibit everyday life information seeking (ELIS) practices in their school libraries, taking place within today's digital age context. Framed within the research question are these queries: how students use physical and virtual technologies afforded them; what are their most frequently expressed ELIS topics; which people sources are sought when teens need help with ELIS needs; how suburban teens' ELIS practices compare with urban teens' ELIS practices; and how findings affect implications for school librarians administering best practices for working with students. Glaser and Strauss (1967) stated that studies framed within sociology should enable prediction and explanation of behavior; help to advance established theory; contain use for practical applications; provide perspectives on behavior; and promote research styles within particular areas of behavior. ELIS studies, with an emphasis on adolescent ELIS practices, form the backbone for this dissertation; comparisons with previous research help to explain behaviors and also provide for multiple perspectives. This study is important, because the prevalence of mobile devices and technologies impacts the ways that students learn; practitioners working with students must be able to provide guidance for students meeting ELIS needs with mobile devices, but to also instruct them in ways that make information seeking meaningful in the contexts they inhabit.

This study was undertaken by the researcher who recognized that another environment and population group should be investigated so as to move toward a more

complete understanding of student ELIS practices. Such knowledge building is a hallmark of research in general; within the LIS field, continued research efforts help to build upon a developing theoretical base for human information behavior. Recommendations from researchers, including Savolainen (2008), Agosto and Hughes-Hassell (2006a, 2006b), Todd (2003) and other LIS peers suggest that information behavior research occurs in ways that honor participant voices even as they investigate differing populations. This study extends Savolainen's (1995, 2008) ELIS studies involving participants in *nonwork* situations, and begins to address how upper income student participants blend work and play into their ELIS practices. Efforts such as this provide cross-fertilization (Savolainen, p. 205) of concepts and lead to deeper contextual understandings. Placement of this dissertation research in an upper-income, suburban setting allows for application of new understanding to the urban teen study theoretical and empirical models.

The interpretivist paradigm provides a theoretical framework in which constructivist metatheory guides research efforts that not only enhance the research base, but that also apply theory to practices, and develop tools that help practitioners with administration of best practices. Basic premises in urban teen study findings provide a knowledge base for studying other participants within 21st century contexts that impact student learners and school libraries operating within AASL (2007, 2009) guiding documents. Responses of individuals participating in this study provide rich description that helps researchers begin to know how student ELIS practices evolve and grow alongside ICT emergence and development. As noted at the beginning of this dissertation, students exist in a world that is rapidly changing; pedagogical practices have not kept pace with technological innovations, and there exists a need for creating

instructive learning opportunities that apply best practices to facilitating cognitive growth within an mobile device context. Set amidst research parameters are changes in federal and state legislation that affect school librarians charged with teaching students cognitive skills that help them to productively participate in a democratic society.

Themes Emerging From This Study

Six themes emerged from data collection and analysis described in Chapter 4. Each theme holds implications for adding to existing research, and informing practitioners who work with 21st century learners. Themes discussed apply to one set of participants – the upper income high school students working in a highly technological high school library. Findings provide comparisons with urban teens studied by Agosto and Hughes-Hassell (2005, 2006a, 2006b), and may imply levels of transferability with other potential groups of study.

Theme 1: Suburban teens demand instructional models. This powerful theme has implications for practitioners who work with adolescents who are similar and dissimilar to the suburban teen study participants. Because instructional models help scaffold learning from one level to another, aligning with Piaget's (1954) cognitive stages and Vygotsky's (1978) described zone of proximal development (ZPD) theories, they are also useful for determining how to help students learn to move into levels of challenging, higher order thinking. Asking for explicit instructions to aide successful assignment completion may be a necessary part of developmental growth (Piaget, 1954 and Havighurst, 1972) students accomplish before tackling higher level, more abstract thinking processes. While the goal should be for librarians to stretch student learning for more challenging and relevant work, if they know that students may first need to experience model-driven examples, such activities can be construed as another type of

help librarians provide to students. Suburban teens, because of their upbringing that focuses on entry into premier colleges and universities, are vocal about desiring instructional models. As shared by Pearlman (2010) such models are a hallmark of 21st century teaching if students are to become not only producers of knowledge, but also invested in personal intellectual growth. School librarians who gain understanding of developmental growth needs will be able to design instruction that helps students move from a dependence on instruction models into more challenging work that approximates real-life problem solving activities that will aid students throughout their lives. More research is also necessary for learning why some lower-performing students thrive on open-ended, abstract assignments that frustrate so many of the suburban teens in this study. What might librarians learn from these other types of students that would help them to instill similar experiences for suburban teens who express discomfort when completing work without accompanying instructional models?

Theme 2: Suburban teens prefer to use personal mobile devices to school-owned hardware for meeting ELIS needs while in the school library. Student participants provided a number of details that support the theme of students eschewing school computers for searching for personal information, and instead relying on mobile devices, particularly smartphones, to help them with their daily ELIS practices. This theme is remarkable; a barrier (the filtering system) existed, and suburban teens used the quickest, easiest, and most private way they knew in order to fulfill their interests and to work around constraints. They did this seamlessly, using their mobile devices for "play" even as they steadily completed academic work in the school setting. This statement is compelling, because it changes how we construe "nonwork information seeking," which Savolainen (2008, p. 30), explained might be a generic phrase. Students who complete

academic assignments can be viewed as being at "work." Their use of smartphones, and other mobile devices that allow them to pursue ELIS practices freely, constitute a form of play, or a way to take "breaks" from the tasks of "work." Examining such scenarios opens up discussion for Savolainen's theory; ever forward thinking, he suggested that "non-work information practices should be compared to information practices characteristic of work-related contexts" (Savolainen, 2008, p. 205). This study adds to the knowledge base he discussed, and partially fulfills his recommendations for developing a contextualist approach to information practice. As noted previously, students do not see this ELIS practice as one that is unique; using their smartphones intelligently has become a part of their daily lives, and if anything, appears to be a part of pragmatic decision making on their end.

Theme 3: Suburban teens actively manage their educational assessment and growth. Participants in this study used an online grading system to systematically check that their grades have been correctly entered and reported. Locating and analyzing grade information represents a move from seeking of practical information to a deeper level of maintaining order with an aim towards future problem solving. This is an orienting type of behavior (Savolainen, 2008) and one that helps them to maintain their style of living. It is also an active form of mastery of life in that frequent monitoring of grades helps students adhere to familial expectations for achievement. As noted by Savolainen (1995), "One is born in a culture within a social class which gives basic models for mastery of life" (p. 264).

Suburban teens not only demand instructional models (Theme 1) and then monitor academic achievement after completion of assignments; they also seek out teachers for discussion about grades that are awarded and reported. As noted earlier,

these information practices spring from their desire to adhere to familial expectations, and may be an instilled proactive behavior incorporated by their lifestyle within an upper income social class. That they manage their educational progress is of interest because their efforts, if carefully guided, might also be applied to teaching students how to harness their mobile devices and tools in ways that inform all areas of life beyond personal ELIS needs. Before this type of learning occurs, it is necessary that practitioners working with students provide facilitative experiences that extend their use of tools into higher realms that deal with cognitive growth and real-world applications of knowledge.

Theme 4: Suburban teens first seek information on their own when engaging in personal information quests, and then rely on friends and other people sources. That students consider their physical "self" (through use of mobile devices) to be an information source is a new concept, and one that was not explored in the urban teen study (Agosto & Hughes-Hassell, 2005, 2006a, 2006b) or described in Savolainen's (1995, 2008) findings. As the students in the focus group reported, they do not initially require help from people when completing personal information searches, but do ask for assistance when clarifying assignment information or completing assignments. This theme is firmly seated alongside Theme 2 (suburban teens prefer to use personal devices for meeting ELIS needs), because without their far-reaching smartphones and other mobile devices, the suburban teens might not as readily consult devices first as primary sources for helping to meet information needs. Because they do own and have network access that allows these practices, however, the theme of relying on themselves (through their mobile device use) as primary people sources for information seeking exists.

Theme 5: Suburban teens use their mobile devices to blend play with work when completing assignments in the school library. Nonparticipant observation data

uncovered examples of suburban teens' use of mobile devices, particularly mobile phones, to satisfy their need for "play" while concurrently completing work assignments in the study site school library. Play actions are construed, from data, as surfing the Internet, playing games, visiting social networking sites, sending text messages, reading personal e-mail, and taking and sharing photographs. School librarians also reported such actions; School Librarian B described the blend of work and play as "best of both worlds" for students who use mobile devices as conduits for having "fun." Student focus group session comments also support this theme; students discussed the necessity for having mobile phones placed alongside library computer keyboards so they could switch back and forth from working on assignments to visiting Facebook or other social networking sites, sending text messages, and playing games.

In his writings, Savolainen (2008) touched upon envisioning a future world where elements of work and play are blended, when he details how everyday life practices may also become creative and constructive, something the suburban teens already do. "Practices – routine or creative – can also draw on affective factors such as the pleasurability of doing things and emotional involvement with objects of everyday action" (Savolainen, 2008, p. 30). Dewey (1944) suggested that play and work are intermeshed during childhood and are not "antithetical to one another as is often assumed," (p. 202) but instead may co-exist if conducive social conditions promote such occurrences. Participants for this study used everyday objects (their mobile devices) to complete routine tasks such as accessing e-mail accounts or finding out restaurant operating hours, and also derived pleasure from other ways of using devices, such as when they helped their family book a dream vacation at the best price. Their ownership of and pleasure in using the latest mobile devices speak to what Savolainen (2008)

described as “emotional involvement with objects of everyday action” (p. 30). This blend of utility and creativity allows them to also share work and play while they are in the school library.

Theme 6: As instructional partners, school librarians must form interconnected learning partnerships with students, teachers, and school staff in order to guide student ELIS practices in meaningful ways. Data highlighting differences between what school librarians believe students seek for personal information fulfillment, and what students report, indicates that school librarians need to be more aware of what students look for when fulfilling ELIS practices, set within their developmental growth. This aspect of theme development impacts the description of the school librarian role of instructional partner, as described in the *Empowering Learners* (AASL, 2009) document. As instructional partners, school librarians are tasked with working collaboratively with certified teachers to develop policies, practices, and curricula that guide student learning. School librarians can extend this idea by creating similar partnerships with students (who are indeed part of the school community), a relationship that implies trust and mutual learning experiences. From these librarian-student partnerships should emerge a deeper understanding on the parts of both groups regarding what types of information, and what methods for finding information, students employ when fulfilling ELIS practices.

School librarians must determine ways to tap into how teens’ prefer to use mobile devices to help fulfill information needs in ways that help them think critically, impacting academic and personal learning goals, and they need to provide this instruction with sensitivity and respect so that their student charges continue to seek their expertise. Many of the suburban teens first rely on their mobile devices for locating personal information,

and then seek, nearly equally, school librarians and friends for additional help. At this school, a first step has been taken in moving beyond negative perceptions of librarians as detailed by urban teens, and into forming initial relationships that might grow into the types of shared partnerships described above. Notably, the urban teens listed "mentors" as a preferred people source. Librarians need not try to become intimate friends with every student using their facility; instead, they might consider exhibiting a mentoring, partnership role in which they are viewed as accessible, knowledgeable, and sensitive people sources who are there to help students as they go about their everyday life information quests.

School librarians working with digital age students who have access to mobile devices have a ready audience for virtual school library materials in that students can be taught to utilize them through accessing the library web page, as shown by responses provided in the final Edmodo poll. The AASL-defined (2009) role of information specialist calls upon school librarians to connect the school with the global learning community, to use technological tools to supplement school-provided resources, and to provide 24-7 access to library resources. Student poll responses indicated awareness and eagerness to use the site created by the librarians, who should consider extending their learning from awareness and initial use to inferencing by asking them to become partners in developing and presenting this virtual information. In other words, students can become stakeholders in how technologies at schools are purchased, promoted, used, and evaluated. This is a natural role for students who have access to mobile devices they can freely use in schools, and applies to AASL Learning Standard 4: Equitable access is a key component for education; Standard 7: The continuing expansion of information demands that all individuals acquire the thinking skills that will enable them to learn on their own;

and Standard 9: School libraries are essential to the development of learning skills. (AASL, 2009).

AASL guiding standards and documents (2007, 2009) frequently describe the goal of forming collaborative relationships with classroom teachers. In order to fully fulfill this role in ways that help students to not only inquire, think critically, and gain knowledge, but to also pursue personal and aesthetic growth, school librarians must work to form an interwoven network informing adults working with students about students' developmental and technological abilities and needs. The urban teen study (Agosto and Hughes-Hassell, 2006b) called for continued understanding of learning the reasons why students engage in varying information behaviors; Theme 6 applies their call and findings from this study to suggest that this reach extends beyond school librarian and researcher responsibilities to include other school employees.

A Modified Typology Emerging from this Study

Responses from three data collection methods (school librarian interviews, student focus groups, and Edmodo Polls results) aided in creation of the suburban teen ELIS typology which pinpoints likenesses and differences between the urban teens studied by Agosto and Hughes-Hassel (2006a, 2006b) and suburban teen participants in this study. Rapid changes in technological developments made it necessary to modify the original typology in order to reflect mobile devices that are so prevalent in the suburban teens' lives. Categories now include people sources, mobile devices sources, ICT sources, other media sources, and ELIS topics. New ELIS topic uncovered by this study included gaming, cars, and travel. The Suburban teen ELIS Typology also confirmed many of the same ELIS topics reported in the urban teen study, an important step in

Agosto and Hughes-Hassell's (2006b) suggestion for locating similar findings in other populations.

A playful "Self" emerging from this study. The Theoretical Model of Urban Teen Development (Agosto and Hughes-Hassell, 2006a) provided a way to examine teen development and growth framed within the discovered "selves" as they go about conducting ELIS practices. The "selves" helped to paint a holistic picture of urban teens, and included the emotional self, the reflective self, the physical self, the creative self, the cognitive self, the sexual self, and the social self. To gain a deeper understanding of ELIS practices, Agosto and Hughes-Hassell recommended a developmental approach in addition to uncovering descriptive findings. Supporting their suggestions are Havighurst's (1972) developmental task theory, and findings from Piaget (1954) and Vygotsky (1962, 1978) that described learning experiences as opportunities for growth within social rules and obligations, occurring alongside concurrent physical growth and development. Findings from data analysis for this study indicated that suburban teens also inhabit a *playful self* as they meet their developmental and ELIS needs. This self encompasses habits of gaming and play, including the blending of work and play while in academic settings.

No findings for a "sexual self." All suburban teen ELIS topics were examined within the framework of the urban teen ELIS typology, and various "selves" are conceptually tied to the evidence provided from data analyses. One student reported that a doctor is a people source for help with locating information of a personal nature; however, this student did not detail reasons for seeking information from a doctor, so it cannot be implied that there was a need for information of a sexual nature. Student participants in this study relied first on their mobile devices for ELIS practices, and this

fact means that evidence of a sexual self is possible; however, study data collection and analysis did not uncover such findings. Although there were no findings for evidence of a sexual self (including seeking information regarding sexual safety, sexual health, and sexual identity) for suburban teens, this self is included in the adapted model. Placed among all of the urban teen selves is the newly discovered *playful self*.

Implications and Recommendations

The student and school librarian participants in this study helped to describe information behaviors of upper income students working in a highly technological Midwestern school library. They constituted a unique population in that they have been afforded the latest mobile devices and necessary network access for using devices to their full potential. Study participants existed in a social world that encouraged academic success; movement into premier colleges and universities was a district, school, and familial expectation. Suburban teens use the tools they are given to manage and monitor their educational progress, and this interest moves beyond completion of academic tasks into behaviors that require ELIS practices. Their demand for instructional models that will ensure proficient and exemplary grade completion speaks to familial and personal expectations for success. This dissertation moves beyond labeling and describing 21st century students and provides instead a sharper focus on discovering their information practices within a school library context. For the purposes of this section, it is useful to revisit select details garnered from past studies and ongoing research projects.

Disconnects exist. Students working with mobile devices may experience distinctly different disconnects: access issues impact which students have access to devices and which students are not afforded the same opportunities; emotional disconnects may occur when the desire students express for using mobile devices for new

learning experiences is not valued by adults who control access to such technologies; proficiency disconnects occur when students perceive their computing abilities on higher levels than actions truly indicate; and a final disconnect, and perhaps the one of most concern for the suburban teens, happens when schools fail to use emergent technologies and mobile device tools that are ubiquitous. When this final type of disconnect occurs, students tune out and lose interest in their educational progress (Smith & Evans, 2010).

Suburban teens personally own mobile devices and have access to robust networking systems at home and at school. However, mandated filtering programs on school library computers impact their ability to self-manage ELIS practices; rather than seek help from school librarians or other building personnel, they instead turn to *themselves* for information help, and rely on their mobile devices to bypass using school-provided computers for this purpose. This turning away from adults may be a normal part of their developmental growth (Havighurst, 1972); however, students at this site are missing out on opportunities to learn how to effectively and ethically manage personal information use in ways that also impact their cognitive growth.

Instructional model preference. Suburban teens were not being provided with the types of experiences described by Bruner (1973) that cause them to stretch to solve complex problems or dilemmas; instead, they preferred to be provided with instructional models that clearly outline exactly what is necessary for successfully completing classroom assignments. This finding makes sense when considered within their social and educational contexts. Instructional models in themselves are not the issue here, and lessons learned from Piaget's (1954) teachings imply that as students grow from one cognitive stage to another, such explicit delineation of expectations is necessary. However, school librarians, in their roles as instructional partner and teacher, are tasked

with helping students to grow, building upon abilities to use information for defined and self-defined purposes (AASL, 2009). Such growth, then, must move students into the types of abstract, complex thinking that is a hallmark of formal operational thought, or as described by School Librarian A as "real world, soft qualities" they must have in place when they advance to postsecondary educational experiences.

Reliance on mobile devices for information seeking. Students in this study preferred above all to consult their mobile devices when fulfilling personal information queries; they then sought friends and some adult school personnel for help. Parents were not a frequently mentioned people source for information seeking. The category of "self" (through consultation with personally-owned mobile devices) represents a new way of thinking about Savolainen's (1995, 2008) ELIS practices theory, because past findings overwhelmingly indicated that humans tend to seek help of this nature from close friends and relatives first, and then from other people sources. This finding begs for further study to uncover similar and dissimilar occurrences in other school library settings.

Suburban teens in this study provided researchers with a new source category - reliance on mobile devices as sources of information - and also indicated a point of concern for school librarians. While school librarians at the study site were able to provide all manner of technological helps, resources exist in physical and virtual settings and required traditional and newer forms of expertise for program administration. However, both parties were not being afforded opportunities that provide continued growth through facilitative learning experiences that connect with teens' preferences for using their personally owned mobile devices. Librarians must also educate themselves about functionality of these devices, even as they determine, collaboratively with

teachers, how to use them in classroom learning projects that move beyond location and access, and into deeper levels of synthesis and evaluation.

Recommendations for School Librarians

Findings from this dissertation provide recommendations for school librarians working with suburban teen populations. Students at the study site have already moved beyond issues of access – they own the latest mobile devices that function as tools for their personal information seeking. Suggestions provided in this section are designed to help move instruction in the school library into more challenging levels of complexity that help students to become lifelong information users and producers. Informing recommendations are a reminder of the Learning Standards published by AASL (2007), which call for students to a) inquire, think critically, and gain knowledge; draw conclusions, make informed decisions, apply knowledge to new situations, and to create new knowledge; to share knowledge and participate ethically and productively as members of a democratic society; and to pursue personal and aesthetic growth.

Recommendation 1. *School librarians working with suburban teen populations must thoroughly educate themselves about emerging technologies in order to develop instructional opportunities that move beyond using mobile devices and tools and instead promote ethical, productive, and intelligent incorporation of them into lifelong learning.* As a teacher, school librarians are charged with helping to instruct students in the use of multiple literacies, including digital strands. As noted in the AASL (2009) common beliefs, students must gain technology skills for future employment, and also be taught components of ethical behavior that allow them to function in a digital society where mobile devices are pervasive. Additionally, students need to "grow" skills for thinking and learning on their own; the tools are already in place, and accompanying instruction

will help suburban teens to advance as true 21st century learners. While student ownership of mobile devices may help to spur *awareness* for school librarians, it is their mission to carry this step further into research efforts that provide a complete description of how such devices might be used for instructional purposes. School librarians are tasked with helping students to learn ethical uses for emergent technologies; this role disposition should include providing instruction for mobile devices beyond those typically offered by the school and also embrace all forms of mobile devices that students use. Inherent in this recommendation are continual advocacy efforts so that library programs reflect virtual access that aligns with learning needs; school librarians must take on leadership positions that allow them to speak knowledgeably about mobile device usage and impacts of filtering and monitoring on student ELIS and academic practices.

Recommendation 2. *School librarians must form interconnected partnerships with the very stakeholders affected by findings from this study: teachers, students, and other school personnel.* "In today's learning community, the line between teacher and student has blurred. All members of the learning community now share the roles of teacher, learner, and collaborative partner" (AASL, 2009, p. 20). When all adults working with students receive education about teen developmental growth and learning needs, teamwork can flourish in ways that afford suburban teens not only the independence they crave, but also the structured guidelines within with cognitive growth continues forward. Sharing the adapted Theoretical Model of Suburban Teen Development is a starting place for placing teen behaviors and developmental needs into a framework that accommodates and enhances instruction. Students are a key part of the forming of partnerships. Suburban teen participants for this dissertation expressed frustration over being treated like children, and shared a desire to be treated like adults. Why not involve them in the

very decision making that impacts them? Additionally, school librarians must approach and gain acceptance from classroom teaching collaborators to develop learning scenarios that move beyond creation of "end products" that rely upon instructional models for assessment. To develop the type of authentic, real-world, complex problem-solving instructional opportunities recommended here is not a simple task. Forming relationships such as this takes mutual time and effort; librarians may need to paint pictures for collaborators to help them move out of former pedagogical models into a new world instructional laboratory wherein students become explorers whose learning is facilitated by knowledgeable, caring adults.

Recommendation 3. *School librarians working with suburban teen populations must develop an action plan that considers research-based findings; such a plan includes development of best practices for administering library programs, and includes ongoing development of collaboration, instruction, and advocacy efforts.* Without this type of overarching belief and goal system, individual efforts for improvement are not effective. The AASL (2009) mission statement for school librarians requires that they guide students and staff to become effective users of ideas and information, and that they empower students to think critically, conduct skillful research, and develop as ethical users of information. For students who are still struggling with issues of accessing mobile devices, librarians will have specific goals for advocacy efforts. For suburban teens, librarians may move beyond issues of equitable access and focus efforts on developing filtering systems that do not block ELIS topic searches while also maintaining their responsibility to uphold federal mandates such as CIPA.

AASL's *Empowering Learners* document (2009) described common beliefs that impact development of the school library mission and action plan. Inherent in these

beliefs are notions that learning has a social context and that school libraries are essential to the development of learning skills, concepts that align with constructivist theory. Suburban teen study findings support these beliefs, and provide a baseline description placing digital learning opportunities within a constructivist metatheoretical context – one that encourages inquiry and socially shared learning experiences within a framework of facilitative teaching that nurtures cognitive growth and individual expression.

Suggestions for Future Research

This dissertation study provides findings for suburban teens, which constitute a population that contrasts with urban teens studied by Agosto and Hughes-Hassell (2006a, 2006b). It helps to shed light on an area that has not received plentiful research efforts – upper income students fulfilling ELIS practices while working in a highly technological school library. Agosto and Hughes-Hassell described their work as exploratory, and recommended future research efforts tie youth information seeking behavior to developmental theory. They also called for additional testing of the urban teen theoretical and empirical models in other inner-city environments, as well as rural and suburban environments, and considerations for race, ethnicity, age, and gender when designing methodology for such studies. Savolainen (2008) recommended studying non-work information practices alongside work-related practices: "Studies such as these would open up opportunities to specify the picture of information practices in both contexts and cross-fertilize the ideas to develop a genuinely contextualist approach to information practice (p. 205).

Additional research might uncover answers that begin to answer these questions:

1. How do adolescents from middle-income families conduct ELIS practices while working in school libraries?

2. Are there library programs currently providing collaborative, facilitative learning experiences that incorporate the use of mobile devices in ways that move beyond tool access and usage?

3. In what ways to students conduct ELIS practices in school libraries where mandated filtering programs are in place?

4. Would a similar study with a wealthy class population provide comparable findings as in the suburban teen study? In examining study themes, what differences might exist between these two groups, especially in areas of cultural expectations and the blending of work and play?

5. Is the preference to rely on mobile devices when seeking information of a personal nature, rather than first seeking friends and other humans, an anomaly or does this finding represent an new, emergent form of information behavior?

A study similar to this dissertation will be even more effective in aligning with the urban teen study if the student participants are invited to help in the creation of the developing coding scheme and accompanying typologies. This study did not follow exact methodology for the urban teen study; might it be possible to locate a suburban teen population who use or volunteer at public libraries in order to design a study more closely resembling the urban teen study? Future research should also focus on interweaving school librarian roles with AASL's (2007) 21st century learning standards, which recommend higher-order thinking skill development for students who exist in a digital world context.

Because of the emergence of the "playful self," described earlier, more study is necessary into adolescent developmental "selves" to continue advancing the theoretical model so that it most closely reflects true teen experiences and developmental growth.

Additional supporting evidence showing appearance of the "playful self" in other populations would lend strength to findings for this study. Other "selves" may exist and determining them would aid efforts to develop a holistic model of adolescents and their information practices. Influencing discoveries such as this are concepts of adolescent cognitive development, adolescent physical and emotional growth, and the contexts of *habitus, mastery of life,* and *lifestyle* that help to place the participants within socially constructed worlds that impact information practices.

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Table 1

Comparisons of Perspectives

Havighurst	Agosto & Hughes-Hassell	AASL	AASL
1972	2006a	2007	2009a
Developmental Tasks	**Selves**	**Common Beliefs**	**School Librarian Roles**
Relationship with peers	Emotional	Reading/window	Leader
Sex roles	Reflective	Inquiry/framework	Instructional partner
Body acceptance	Physical	Ethical behavior/taught	Information specialist
Emotional independence	Creative	Tech. skills/crucial	Teacher
Marriage/family life prep.	Cognitive	Equitable access/key	Program administrator
Career prep.	Sexual	Information lit./defined	
Ideology development	Social	Info./critical thinking	
Social behavior		Learning/social context	
		School lib./essential	

Table 2

Study Site City, State, and U.S. Demographic Data

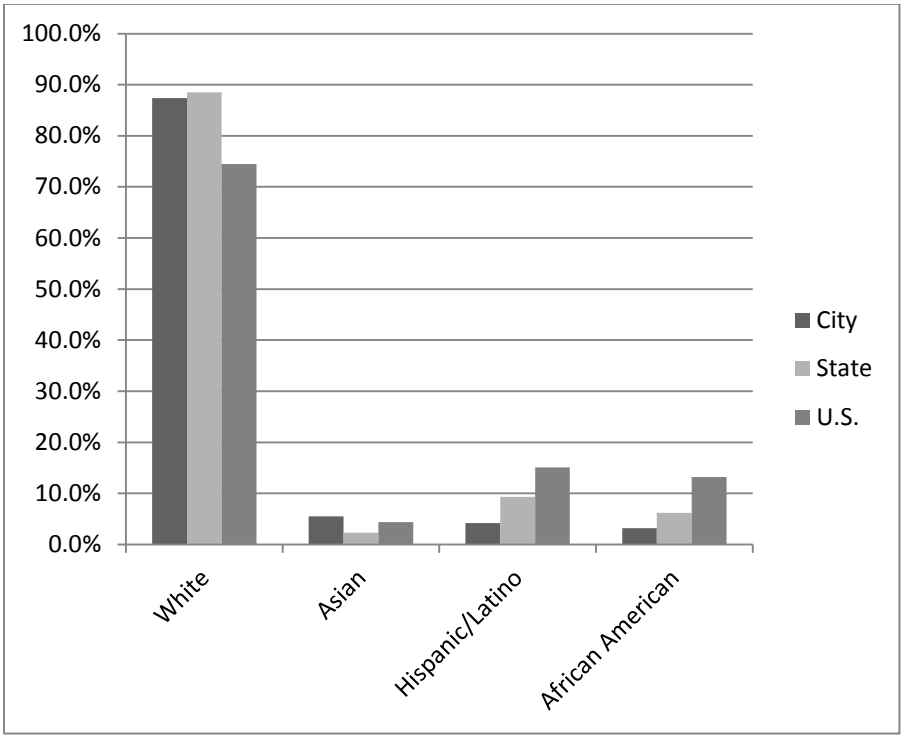


Table 3

Study Site City, State, and U.S. Educational Attainment

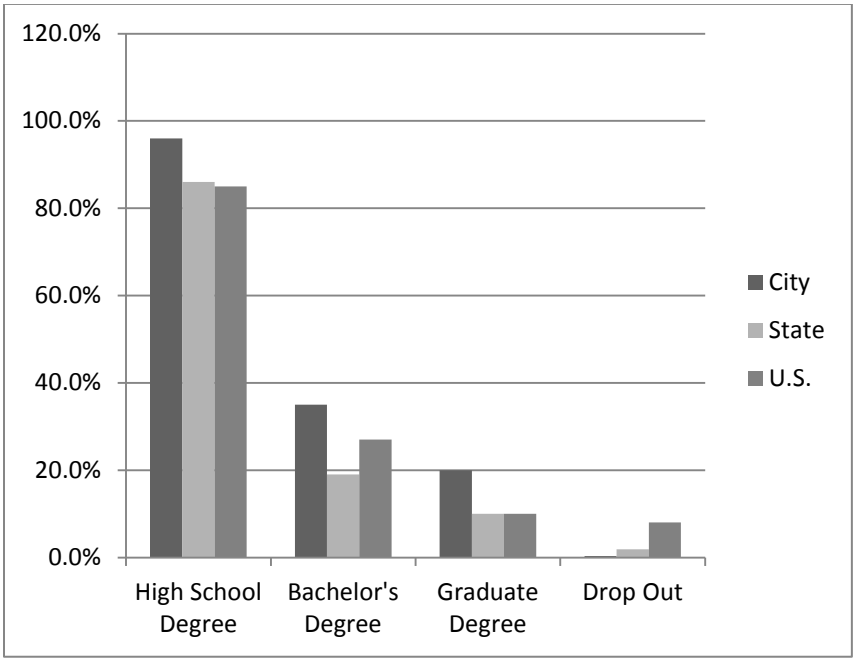


Table 4

Study Site, Study State, and U.S. Median Income

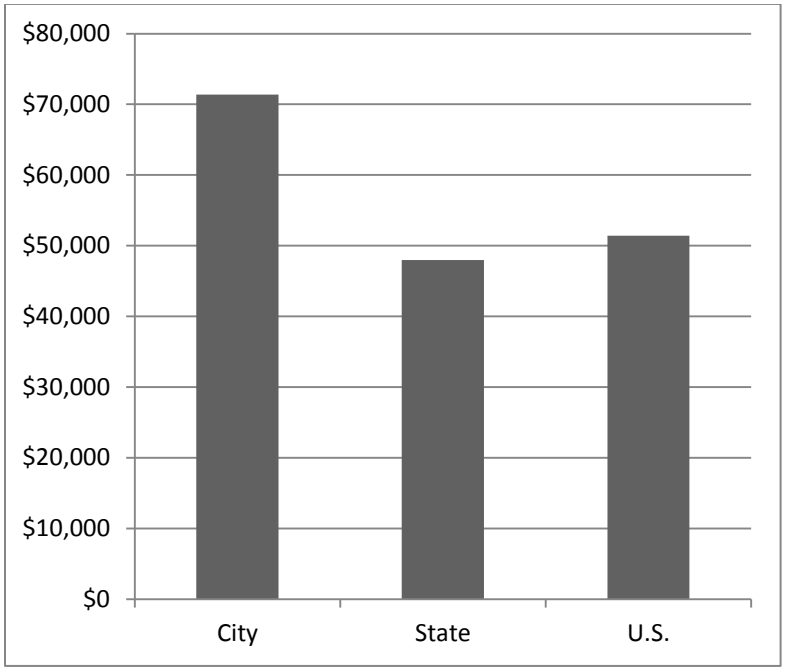


Table 5

All Student Focus Group Participants by Gender, Ethnicity, and Grade Level

Student Focus Group 1 (Total = 6)		
Male 1	White	Senior
Male 2	White	Senior
Female 1	Asian American	Senior
Female 2	Asian American	Senior
Female 3	White	Senior
Female 4	White	Senior
Student Focus Group 2 (Total =9)		
Male 1	White	Sophomore
Male 2	White	Freshman
Male 3	White	Freshman
Male 4	White	Sophomore
Male 5	White	Freshman
Male 6	White	Freshman
Female 1	White	Sophomore
Female 2	White	Freshman
Female 3	White	Sophomore
Student Focus Group 3 (Total = 7)		
Male 1	White	Sophomore
Male 2	Asian American	Junior
Male 3	White	Sophomore
Female 1	White	Junior
Female 2	White	Sophomore
Female 3	White	Sophomore
Female 4	White	Sophomore
Student Focus Group 4 (Total = 5)		
Male 1	White	Freshman
Female 1	White	Freshman
Female 2	White	Freshman
Female 3	White	Freshman
Female 4	White	Junior

Table 6

Edmodo Poll Participants (n=85)

Poll	Title	Participants
1	Tech Use	29
2	Media in Your Life	29
3	Who are Your Go-To People	10
4	What I Look For	7
5	The Library	10
Total		85

Table 7

Summary of School Librarian Interviews: Open Coding All Responses (n=2,374)

Responses	Raw numbers	Percentages
How-to directions - students need	150	6.32%
Student interactions	80	3.37%
Student learning process	58	2.44%
Testing rules	58	2.44%
Academic work - completing	57	2.40%
Typical student	52	2.19%
Help from SL	46	1.94%
Scheduled library visit	46	1.94%
SL learning from students	43	1.81%
SL expectations of teachers	42	1.77%
Affluence	39	1.64%
Family life expectations	38	1.60%
Filtering - bypassing filter	38	1.60%
Privacy	38	1.60%
Help - technology for academic work	37	1.56%
Tech savvy students	37	1.56%
Assessments	34	1.43%
BV School District - policies	34	1.43%
Academic achievement	33	1.39%
Money	31	1.31%
Student as expert online searcher	30	1.26%
Cell phones	28	1.18%
SL prior relationships with students	28	1.18%
Web 2.0	28	1.18%
Personal information seeking - in SL	27	1.14%
SL forming personal connections w/ students	27	1.14%
Academic work - completing - group work	25	1.05%
Instructional model	25	1.05%
Personal information seeking	25	1.05%
Privilege	25	1.05%
New building	24	1.01%
Access	22	0.93%
Teacher expectations of SL	22	0.93%
Code: Academic work - end product	21	0.88%
New school library	21	0.88%
Typical cases	20	0.84%
BVH	19	0.80%
Prior acquaintances	19	0.80%
Soft qualities	19	0.80%
Cell phone friendly	17	0.72%
Choice - attendance	17	0.72%
Unusual cases	17	0.72%
Family expectations - academic	16	0.67%
Poll Daddy	16	0.67%
Relaxing	16	0.67%
Blocked sites	15	0.63%
Building library program	15	0.63%
Entitlement	15	0.63%
Grade (level)	15	0.63%

Grades - questioning teachers about grades	15	0.63%
How-to directions - students don't need	15	0.63%
SHSD	15	0.63%
Community building	14	0.59%
Code: Multitasking minds	14	0.59%
Senior class	14	0.59%
Situational	14	0.59%
District expectations	13	0.55%
I always say the first five years	13	0.55%
Not exploring	12	0.51%
Regular students	12	0.51%
BVSW	11	0.46%
BVSW location - rural	11	0.46%
BVW	11	0.46%
Facebook	11	0.46%
Checking grades online	10	0.42%
Discomfort	10	0.42%
Grades	10	0.42%
Monitoring blocked sites - library staff does	10	0.42%
Stressors	10	0.42%
Academic work - completing - group work dynamics	9	0.38%
Academic work - completing - Internet	9	0.38%
Drug use	9	0.38%
Help - academic work	9	0.38%
iPads	9	0.38%
Teacher expectations from former exp. with BVSW SL	9	0.38%
Texting allowed	9	0.38%
Desktop computers	8	0.34%
Printing	8	0.34%
Prior relationships with students	8	0.34%
Problem solving	8	0.34%
Rule breaking	8	0.34%
Student expectations - affluent lifestyle	8	0.34%
Talking	8	0.34%
Advanced placement students	7	0.29%
BV school district	7	0.29%
Checking e-mail	7	0.29%
Comfort zone	7	0.29%
Creativity	7	0.29%
Foreign exchange students	7	0.29%
Help - self (students)	7	0.29%
Online games	7	0.29%
Physical proximity	7	0.29%
Random Internet searching	7	0.29%
Using cell phone instead of computer	7	0.29%
Zoning	7	0.29%
Academic work - completing - online images	6	0.25%
Creativity - self	6	0.25%
Eat lunch	6	0.25%
Help - pleasure reading book selection	6	0.25%
How-to directions	6	0.25%
Inferencing	6	0.25%
Music	6	0.25%
Old money	6	0.25%
Rehab (drug)	6	0.25%
Rival schools	6	0.25%
Technology access - students at home	6	0.25%
Wants privacy	6	0.25%

Animoto	5	0.21%
Databases	5	0.21%
Looking up college information	5	0.21%
Non-motivated students	5	0.21%
Online shopping at school - clothes	5	0.21%
Smartphones - access to Internet	5	0.21%
Software - only available in school library – A/F/D	5	0.21%
Texting	5	0.21%
Two parents	5	0.21%
YouTube videos	5	0.21%
Academic work - completing - YouTube	4	0.17%
After school	4	0.17%
Before school	4	0.17%
Behavioral expectations	4	0.17%
BVSWLMC home page	4	0.17%
Cell phone is another screen	4	0.17%
Eating and drinking	4	0.17%
Failing students	4	0.17%
Google Docs	4	0.17%
LibGuides	4	0.17%
New money	4	0.17%
No online games allowed	4	0.17%
Online news - looking for fact verification	4	0.17%
Opportunity	4	0.17%
PowerPoint	4	0.17%
School - not meant for sharing	4	0.17%
School library - visibility	4	0.17%
Teen pregnancy	4	0.17%
Age	3	0.13%
Earbud sharing	3	0.13%
eBooks	3	0.13%
Exploring	3	0.13%
Farm families	3	0.13%
Filtering - dislike	3	0.13%
Grandparents	3	0.13%
Help - book selection	3	0.13%
Images	3	0.13%
Library books - does not check out	3	0.13%
Looking up court records	3	0.13%
Monitoring	3	0.13%
No choice - attendance	3	0.13%
Online travel information	3	0.13%
School library - location	3	0.13%
Texting - preferred over speaking on cell phone	3	0.13%
Wikipedia	3	0.13%
Wikipedia - students told not to use	3	0.13%
A very different breed	2	0.08%
Checking sports scores	2	0.08%
Creative commons	2	0.08%
Educational online games allowed	2	0.08%
ESPN online	2	0.08%
Code: global students	2	0.08%
Code: Help from paraprofessional staff	2	0.08%
Hide out	2	0.08%
iMovie	2	0.08%
iPads - apps	2	0.08%
Jaycut	2	0.08%
Library books - does check out	2	0.08%

Monitoring - constraint	2	0.08%
New homes	2	0.08%
Online shopping -does shop online at school	2	0.08%
Online shopping at school - swimwear (Spring Break)	2	0.08%
Online news	2	0.08%
Online news - does read	2	0.08%
Online shopping at school - cars	2	0.08%
School library policy - library pass	2	0.08%
Web 2.0 - SL use for professional purposes	2	0.08%
Wikipedia - students don't use	2	0.08%
Wikis	2	0.08%
Academic work - completing - music clips online	1	0.04%
Access to information	1	0.04%
Blogs	1	0.04%
BVN	1	0.04%
Cars - online advertising	1	0.04%
Creativity - dies out	1	0.04%
Dance photos for sale online	1	0.04%
Earbuds	1	0.04%
Ex High and Blue Valley West c..	1	0.04%
Filtering - not a hassle	1	0.04%
Free library access	1	0.04%
Geometry Sketch Pad	1	0.04%
Glogster	1	0.04%
Google Images	1	0.04%
Google Reader	1	0.04%
Headphones	1	0.04%
Help - book location	1	0.04%
Help - citing sources	1	0.04%
Help - personal technology devices	1	0.04%
Looking for images for personal use	1	0.04%
Looking for sports photos of local and personal teams	1	0.04%
Music videos	1	0.04%
New school library setting	1	0.04%
Prezi	1	0.04%
Software - only available in library – Geo. Sketch Pad	1	0.04%
StoryBoard	1	0.04%
Twitter	1	
Codes = 203	**2374**	100%

Table 8

Summary of School Librarian Interviews: Focused Coding Scheme (n=2,374)

Responses	Raw Numbers	Percentages
Learning Process	518	21.82%
Academic Work	229	9.65%
Typical Student	175	7.37%
Helps	169	7.12%
School District	165	6.95%
Expectations	148	6.23%
Affluence	134	5.64%
Personal Information Seeking	128	5.39%
Inviting School Library	121	5.10%
SL Connections with Students	110	4.63%
Student Behaviors	97	4.09%
Web 2.0 Programs	91	3.83%
Filtering	62	2.61%
Digital Devices	58	2.44%
New School	55	2.32%
Grades	35	1.47%
Attendance	27	1.14%
Monitoring	19	0.80%
Virtual Resources	16	0.67%
Software	12	0.51%
Print Resources	5	0.21%

Table 9

Summary of School Librarian Interviews: Emergent Categories (n=2,374)

Responses	Raw Numbers	Percentages
Student Learning	747	31.47%
Students	272	11.46%
School District	227	9.56%
Resources	182	7.67%
Helps	169	7.12%
Personal Information Seeking	163	6.87%
Expectations	148	6.23%
Affluence	134	5.64%
New School Library	121	5.10%
School Librarians	110	4.63%
New School	101	4.25%

Table 10

Summary of School Librarian Interviews: Core Categories (n=2,374)

Core Categories	Raw Numbers	Percentages
Learning and ELIS	747	31.47%
School Librarian Roles	582	24.52%
21st Century Student Learners	435	18.32%
School Culture	328	13.82%
Family Influences	282	11.88%

Table 11

School Librarian Interviews: Comparison of ELIS Topics Typologies

Urban Teens' ELIS Topics	Suburban Teens' ELIS Topics
Daily life routines	Academics
Social activities	Daily life routines
Creative performance	Fashion
Academics	College
Personal finances	Social activities
Current events	Cars
Goods and services	Gaming
Emotional health	Travel
Friend/romantic/relationships	Current events
Popular culture	Popular culture
Familial relationships	Social/legal norms
Fashion	
College	
Health	
Physical safety	
Self-image	
Job responsibilities	
Social/legal norms	
Philosophical concerns	
Creative consumption	
Career	
School culture	
Sexual safety	
Sexual identity	
Religious practice	
Civic duty	
Heritage/cultural identity	
Self-actualization	

Table 12

Summary of Student Focus Group Sessions: Open Coding All Responses (n=2,025)

Responses	Raw Numbers	Percentages
Filtering	109	5.38%
Personal information seeking occurs in school library	103	5.09%
Smartphones	68	3.36%
Academic work	50	2.47%
Help - self	47	2.32%
Blocked sites	41	2.02%
Academic work - time	38	1.88%
Academic work - completing	37	1.83%
Help - school librarians	36	1.78%
YouTube	35	1.73%
Using cell phone instead of computer	33	1.63%
iPad	32	1.58%
Filtering-dislike	31	1.53%
Filtering - bypassing	31	1.53%
Server overloaded	30	1.48%
Login - time	26	1.28%
Cell phones	25	1.23%
Desktop computers	25	1.23%
District policy	25	1.23%
Filtering - hassle	25	1.23%
Personal information seeking occurs away from school	25	1.23%
No attendance policy	22	1.09%
Mac computers	20	0.99%
Rule breaking	20	0.99%
Desire to be treated like an adult	19	0.94%
Facebook	19	0.94%
Screens - library - CNN	19	0.94%
Library pass policy	18	0.89%
Smartphones - unfiltered	18	0.89%
eBooks- don't prefer	17	0.84%
Driving car to school	16	0.79%
iPad - filtered	16	0.79%
Online news - do read	16	0.79%
Screens - commons - ESPN	16	0.79%
Smartphones - filtered	16	0.79%
Student as expert online searcher	16	0.79%
Does check out library books	15	0.74%
Does not check out library books	15	0.74%
Google Images	15	0.74%
Smartphones - iPhone	15	0.74%
Travel	15	0.74%
Treated like a child	15	0.74%
BVSW - rural location	13	0.64%
Help - friends	13	0.64%
iPad - cool	13	0.64%
Shopping online	13	0.64%
Home computer is Mac computer	12	0.59%
Texting	12	0.59%

Easier to look for personal information at home	11	0.54%
Help - pleasure reading book selection	11	0.54%
Takes work breaks to use cell phone	11	0.54%
Choice - attendance	10	0.49%
Grades- checking	10	0.49%
Images	10	0.49%
Laptop computers	10	0.49%
Print materials	10	0.49%
After-school activities	9	0.44%
e-mail	9	0.44%
eBooks	9	0.44%
Google	9	0.44%
Help - technology	9	0.44%
Library policy	9	0.44%
New operating system	9	0.44%
Online news - CNN	9	0.44%
Privacy	9	0.44%
Shopping online - does shop online at school	9	0.44%
Cruises	8	0.40%
Public library - does not use	8	0.40%
Shopping online - at school - clothes	8	0.40%
TeacherTube	8	0.40%
YouTube - music videos	8	0.40%
Zoning	8	0.40%
BVSW Library deficits - music playing in library	7	0.35%
Class library visit	7	0.35%
Help - academic work	7	0.35%
Magazines - do read	7	0.35%
New operating system - overloaded	7	0.35%
Other technology - newspaper room - Mac computers	7	0.35%
Printer	7	0.35%
Printing	7	0.35%
Relaxing	7	0.35%
Scanners	7	0.35%
Schedules	7	0.35%
Seniors	7	0.35%
Shopping - visits stores in person	7	0.35%
Shopping online - prefers to use computer over smartphone	7	0.35%
Spring Break	7	0.35%
Desktop computers v. Mac computers	6	0.30%
Facebook - uses at school	6	0.30%
iPad - fragile	6	0.30%
Lighting	6	0.30%
New operating system - time	6	0.30%
Off-campus lunch policy	6	0.30%
Online news - current news	6	0.30%
Passing period - time	6	0.30%
Skype not downloaded on school computers	6	0.30%
Smartphones - Android	6	0.30%
Twitter - does not use	6	0.30%
YouTube - How-to videos	6	0.30%
Academic work - YouTube	5	0.25%
BVH	5	0.25%
BVW	5	0.25%
Completes work at last minute	5	0.25%
Help - academic work - locating print resources	5	0.25%

Home computer is desktop PC	5	0.25%
iPod	5	0.25%
Late start privilege	5	0.25%
Library staff does not monitor students on blocked sites	5	0.25%
Prior experiences - desktop and Mac computers	5	0.25%
Privacy - wants	5	0.25%
Twitter	5	0.25%
Book location - can't locate it; does without	4	0.20%
Bussing	4	0.20%
CAPS laptops at school	4	0.20%
CAPS program	4	0.20%
Facebook - disdain	4	0.20%
Filtering - not a hassle	4	0.20%
Help - academic work - citing sources	4	0.20%
Help - academic work - locating online resources	4	0.20%
Kindle - not necessary	4	0.20%
Other technology - yearbook room	4	0.20%
Photocopier	4	0.20%
Pleasure reading - school year	4	0.20%
Prefers to complete work without breaks	4	0.20%
Print selection - wants more	4	0.20%
Projector	4	0.20%
Shopping online - uses smartphone	4	0.20%
Skype	4	0.20%
Sports - time	4	0.20%
Wolf-Bytes	4	0.20%
Before school	3	0.15%
Bing	3	0.15%
College information online - looks for while at home	3	0.15%
Completes work ahead of time	3	0.15%
Databases	3	0.15%
Grades - checking on smartphone	3	0.15%
Help - paraprofessionals	3	0.15%
Home computer - mix of Macs and desktop PCs	3	0.15%
Home computers - Mac computers - laptop	3	0.15%
Internet	3	0.15%
iPad - apps	3	0.15%
iPad - games	3	0.15%
iPad - owns	3	0.15%
Kindle - books cost less	3	0.15%
Kindle - owns - doesn't use	3	0.15%
Lockers - location	3	0.15%
Newspaper	3	0.15%
Newspaper - does read	3	0.15%
Online games	3	0.15%
Online newspapers - do read	3	0.15%
Pleasure reading - summer	3	0.15%
Print materials - not used	3	0.15%
Shopping online - does not do at school	3	0.15%
Skype - uses for IM at home	3	0.15%
Wikipedia - does not use	3	0.15%
Wikipedia - told not to use	3	0.15%
Assessments	2	0.10%
Attendance policy	2	0.10%
BVSW - new school	2	0.10%
BVSW Library deficits - videogaming	2	0.10%

Cars	2	0.10%
College information - online	2	0.10%
Completes work on time if engaged in topic	2	0.10%
Creative	2	0.10%
Creative - sees self as creative	2	0.10%
Desktop computers v. laptop computers	2	0.10%
e-mail - Gmail	2	0.10%
Grades - does not check	2	0.10%
Hacking	2	0.10%
Headphones	2	0.10%
IM - not used on school computers	2	0.10%
iPad - apps - barcode scanner	2	0.10%
iPad - music	2	0.10%
iPad - not cool	2	0.10%
iPad - not necessary	2	0.10%
iTunes	2	0.10%
Other technology - broadcasting room	2	0.10%
Other technology - music room - Mac computers	2	0.10%
Passing period	2	0.10%
Prior experiences - desktop and laptop computers	2	0.10%
Random searching	2	0.10%
Screens in library and commons - Wolf-Bytes - do watch	2	0.10%
Shopping online - at home	2	0.10%
Shopping online - cars	2	0.10%
Shopping online - does shop online at school - Forever 21 (site)	2	0.10%
Smartphones - a "must"	2	0.10%
Sports - ESPN online	2	0.10%
Sports scores	2	0.10%
Twitter - uses	2	0.10%
Videogames	2	0.10%
Windows	2	0.10%
Baseball scores	1	0.05%
Books too heavy to carry	1	0.05%
BVSW	1	0.05%
BVSW Library	1	0.05%
BVSW Library deficits	1	0.05%
BVSW Library deficits - does not want music playing in library	1	0.05%
Craigslist	1	0.05%
Google videos	1	0.05%
Has a job	1	0.05%
Help - parents	1	0.05%
iTouch	1	0.05%
Kindle	1	0.05%
Kindle - owns	1	0.05%
Lunch	1	0.05%
Making up test	1	0.05%
Newspaper - does not read	1	0.05%
Newspaper - sports section	1	0.05%
Online newspapers - do not read	1	0.05%
Other computers in building	1	0.05%
Personal information seeking occurs in rooms other than library	1	0.05%
Prefers print to virtual books	1	0.05%
Public library - rarely uses	1	0.05%
Scanners - don't use	1	0.05%
Smartphones - Blackberry	1	0.05%
Smartphones - Samsung	1	0.05%

Sports - fantasy football	1	0.05%
Teachers monitor students on blocked sites	1	0.05%
Television	1	0.05%
Using cell phone during lunch	1	0.05%
Videogame news	1	0.05%
Videogame updates	1	0.05%
Virtual materials	1	0.05%
Whiteboard	1	0.05%
YouTube - How-to videos - fishtail braiding	1	0.05%
YouTube - How-to videos - fixed videogame	1	0.05%
YouTube - How-to videos - installed mud flaps	1	0.05%
YouTube - How-to videos - juggling	1	0.05%
Codes = 228	**2025**	**100.00%**

Table 13

Student Focus Group Sessions: Focused Coding Scheme (n=2,205)

Responses	Raw Numbers	Percentages
Filtering	272	13.43%
Personal Information Seeking Topics	248	12.25%
Academic Work	153	7.56%
Cell phones/smartphones	152	7.51%
Helps	140	6.91%
Personal Information Seeking	140	6.91%
Policy	107	5.28%
Computers	103	5.09%
iPad tablet devices	84	4.15%
Devices/Machines other than Computers/iPads	82	4.05%
Server/Operating System	78	3.85%
What students do in the Library	76	3.75%
Student Perceptions of Self	74	3.65%
YouTube	61	3.01%
Print Resources	60	2.96%
Shopping online	57	2.81%
New School	52	2.57%
Virtual Resources	29	1.43%
Student responsibilities	14	0.69%
Grades	10	0.49%
Other Schools	10	0.49%
Public Library Use	9	0.44%
Library Windows	8	0.40%
Privacy	6	0.30%

Table 14

Summary of Student Focus Group Sessions: Emergent Categories (n=2,025)

Responses	Raw Numbers	Percentages
Personal Information Seeking	516	25.48%
Filtering	272	13.43%
Hardware	269	13.28%
Student Behaviors	179	8.84%
New School	177	8.74%
Academic Work	153	7.56%
Cell phones/smartphones	152	7.51%
Helps	140	6.91%
Server/Operating System	78	3.85%
Print resources	60	2.96%
Virtual Resources	29	1.43%

Table 15

Student Focus Group Sessions: Core Categories (n=2,025)

Core Categories	Raw Numbers	Percentages
Resource Riches	588	29.04%
21st Century Student Seekers	516	25.48%
21st Century Student Learners	332	16.40%
Filtering Impacts Learning	272	13.43%
School Culture	177	8.74%
School Librarian Roles	140	6.91%

Table 16

Student Focus Group Sessions: Comparison of ELIS Topics Typologies

Urban Teens' ELIS Topics	Suburban Teens' ELIS Topics
Daily life routines	Academics
Social activities	Social activities
Creative performance	Creative consumption
Academics	Current events
Personal finances	Gaming
Current events	Goods and services
Goods and services	Fashion
Emotional health	College
Friend/romantic/relationships	Daily life routine
Popular culture	Cars
Familial relationships	Travel
Fashion	
College	
Health	
Physical safety	
Self-image	
Job responsibilities	
Social/legal norms	
Philosophical concerns	
Creative consumption	
Career	
School culture	
Sexual safety	
Sexual identity	
Religious practice	
Civic duty	
Heritage/cultural identity	
Self-actualization	

Table 17

Student Edmodo Poll 1 Responses: Mobile Devices Sources (n=29)

Mobile Devices Sources	Raw Numbers	Percentages
Cell phone	28	96.55%
Laptop computer	25	86.21%
iPod or other MP3 player	22	75.86%
Videogaming system	8	27.59%
iPad (or other tablet device)	6	20.69%
GPS	4	13.79%
eBook reader (Kindle, Nook, etc.)	3	10.34%
Digital camera	2	6.90%
Netbook (smaller version of laptop)	1	3.45%

Table 18

Student Edmodo Poll 1 Responses: ICT Sources (n=29)

ICT Sources	Raw Numbers	Percentages
Television	27	93.10
Desktop computer	16	55.17%
Radio	16	55.17%
Printer	13	44.83%
Camcorder	1	3.45%

Table 19

Student Edmodo Poll 2 Responses: Media Device/ICT Activity (n=29)

Media Device/ICT Activity	Raw Numbers	Percentages
Text Messages	28	96.55%
iPod or Other MP3 Player	25	86.21%
Television	23	79.31%
Computers - Desktop	23	79.31%
Computers - Laptop	21	72.41%
Telephone	19	65.52%
Cell Phone - Regular	19	65.52%
Radio	19	65.52%
Videogaming System	17	58.62%
Online School Materials	16	55.17%
Books	16	55.17%
Television Viewed Online	16	55.17%
Printed School Material	15	51.72%
Cell phone - Smartphone	13	44.83%
Instructional Video	13	44.83%
Magazines	12	41.38%
iPad or Other Computer Tablet	9	31.03%
Newspapers	7	24.14%
Product Packaging	5	17.24%
Product Catalogs	4	13.79%
Phonebooks	1	3.45%

Table 20

Student Edmodo Poll 3Responses: People Sources (n=10)

People Sources	Raw Numbers	Percentages
Friends	9	90.00%
Parents	8	80.00%
Teacher	7	70.00%
School librarian	6	60.00%
Guidance counselor	4	40.00%
Other relatives	1	10.00%
Retail help (person at a store)	1	10.00%
Friends' parents	1	10.00%
Doctor	1	10.00%

Table 21

Student Edmodo Poll 5 Responses: Virtual Library Resources (n=10)

Virtual Library Resources	Raw Numbers	Percentages
Library Site	9	90.00%
LibGuides	8	80.00%
Library on Google Docs	4	40.00%
Poll Daddy	3	30.00%
Library on Twitter	2	20.00%
Library Databases	2	20.00%
Library on Facebook	1	10.00%
Library on Viddler	1	10.00%
Library on Flickr	1	10.00%
Library iPhone App	1	10.00%

Table 22

Student Edmodo Poll 5: Open-Ended Question Responses (n=10)

Student #	Response
1	It has books
2	It's pretty and everyone is helpful
3	The computers
4	I like how the resources are very easy to access
5	The staff is helpful
6	How many computers are available
7	The open space
8	The website is really organized and helpful when doing research projects
9	The windows and the sunlight
10	All

Table 23

Student Edmodo Polls: Mobile Devices Sources Typology

Mobile Devices Sources
Text Messaging
iPod or other MP3 Player
Laptop Computers
Cell Phones
Telephone
Smartphones
iPads
Videogaming System

Table 24

Student Edmodo Polls: ICT Sources Typology

Other Media Sources
Television
Radio
Online School Materials
Television Viewed Online

Table 25

Student Edmodo Polls: Other Media Sources Typology

Other Media Sources
Books
Printed School Material
Magazines
Product Packaging
Catalogs
Phonebook

Table 26

Student Edmodo Polls: People Sources Typology

People Sources
Other School Employees
Friends
Parents
School Librarian
Other Relatives
Retail Help (person at a store)
Friends' Parents
Doctor

Table 27

Comparisons of Suburban Teens' and Urban Teens' ELIS Typologies

Suburban Teens

1. **People sources/channels**
   - 1.1 Friends
   - 1.2 Self *
   - 1.3 School librarians
   - 1.4 Other school employees
   - 1.5 Parents
   - 1.6 Other relatives
   - 1.7 Retail help
   - 1.8 Friends' parents*
   - 1.9 Doctor
2. **Media Devices Sources**
   - 2.1 Smartphones *
   - 2.2 Cell phones *
   - 2.3 iPad (tablet device) *
   - 2.4 Text messaging *
   - 2.5 Laptop computers *
   - 2.6 iPod *
   - 2.7 Videogaming systems *
   - 2.8 eBooks *
   - 2.9 Kindle (eBook reader) *
   - 2.10 iTouch device *
   - 2.11 USB drive *
3. **ICT Media Sources**
   - 3.1 Desktop Windows OS Computers*
   - 3.2 Desktop Macintosh OS Computers*
   - 3.3 Telephone
   - 3,4 Television
   - 3,5 Radio
   - 3,6 Online school materials *
   - 3,7 Online television *
   - 3.8 School-produced television
4. **Other Media Sources**
   - 4.1 Books
   - 4.2 Magazines
   - 4.3 Printed school materials
   - 4.4 Newspapers
   - 4.5 Product packaging*
   - 4.6 Product catalogs*
   - 4.7 Phonebook
   - 4.8 School television channel
5. **Information Needs Topics**
   - 5.1 Academics
   - 5.2 Social activities
   - 5.3 Daily life routine
   - 5.4 Current events
   - 5.5 Fashion
   - 5.6 College
   - 5.7 Creative consumption
   - 5.8 Gaming*
   - 5.9 Goods and services
   - 5.10 Cars*
   - 5.11 Travel*
   - 5.12 Pop Culture
   - 5.13 Social/legal norms

*Represents a new item in comparison to the Urban Teens' ELIS Typology

Urban Teens

1. **People sources/channels**
   - 1.1 Friends/family
   - 1.2 School employees
   - 1.3 Mentors
   - 1.4 Customer service staff
   - 1.5 Other teen (not friend)
   - 1.6 Librarians
   - 1.7 Passers-by
2. **Communication media**
   - 2.1 Face-to-face
   - 2.2 Telephone
   - 2.3 Computer
3. **Media Sources**
   - 3.1 Computer
   - 3.2 Television
   - 3.3 Book
   - 3.4 Print ephemera
   - 3.5 Newspaper
   - 3.6 Magazine
   - 3.7 Radio/CD player
   - 3.8 Telephone (automated)
   - 3.9 School notebook
4. **Information Needs Topics**
   - 4.1 Daily life routine
   - 4.2 Social activities
   - 4.3 Creative performance
   - 4.4 Academics
   - 4.5 Personal finances
   - 4.6 Current events
   - 4.7 Goods and services
   - 4.8 Emotional health
   - 4.9 Friend/peer/romantic relationships
   - 4.10 Popular culture
   - 4.11 Familial relationships
   - 4.12 Fashion
   - 4.13 College
   - 4.14 Health
   - 4.15 Physical safety
   - 4.16 Self-image
   - 4.17 Job responsibilities
   - 4.18 Social/legal norms
   - 4.19 Philosophical concerns
   - 4.20 Creative consumption
   - 4.21 Career
   - 4.22 School culture
   - 4.23 Sexual safety
   - 4.24 Sexual identity
   - 4.25 Religious practice
   - 4.26 Civic duty
   - 4.27 Heritage/cultural identity
   - 4.28 Self-actualization

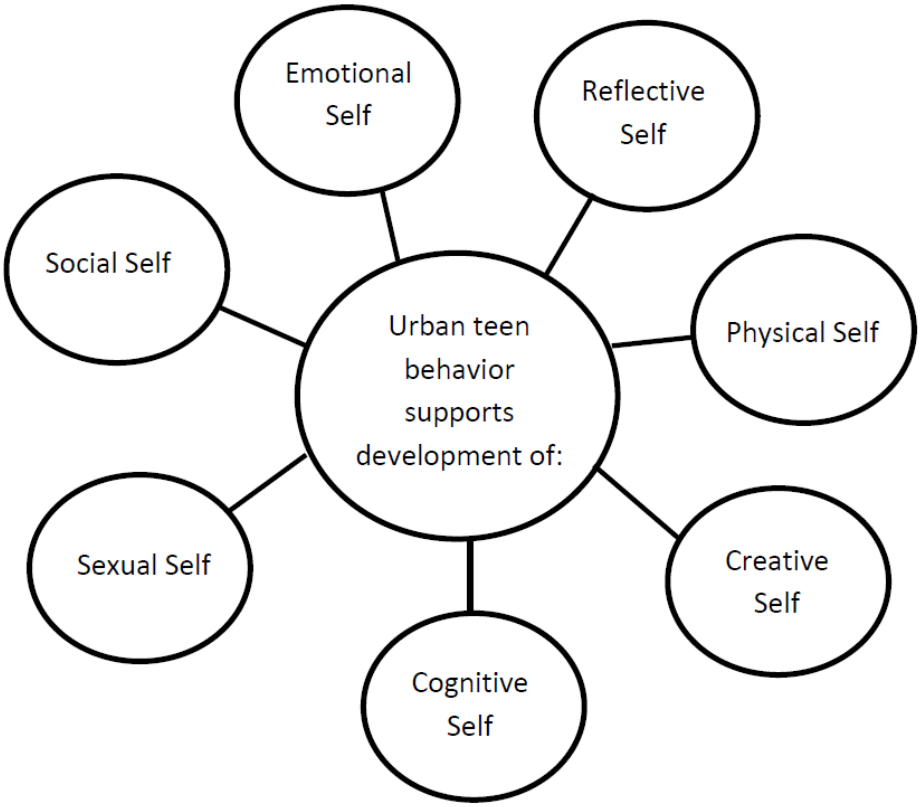


Figure 1. Theoretical Model of Urban Teen Development (Agosto & Hughes-Hassell, 2006a)

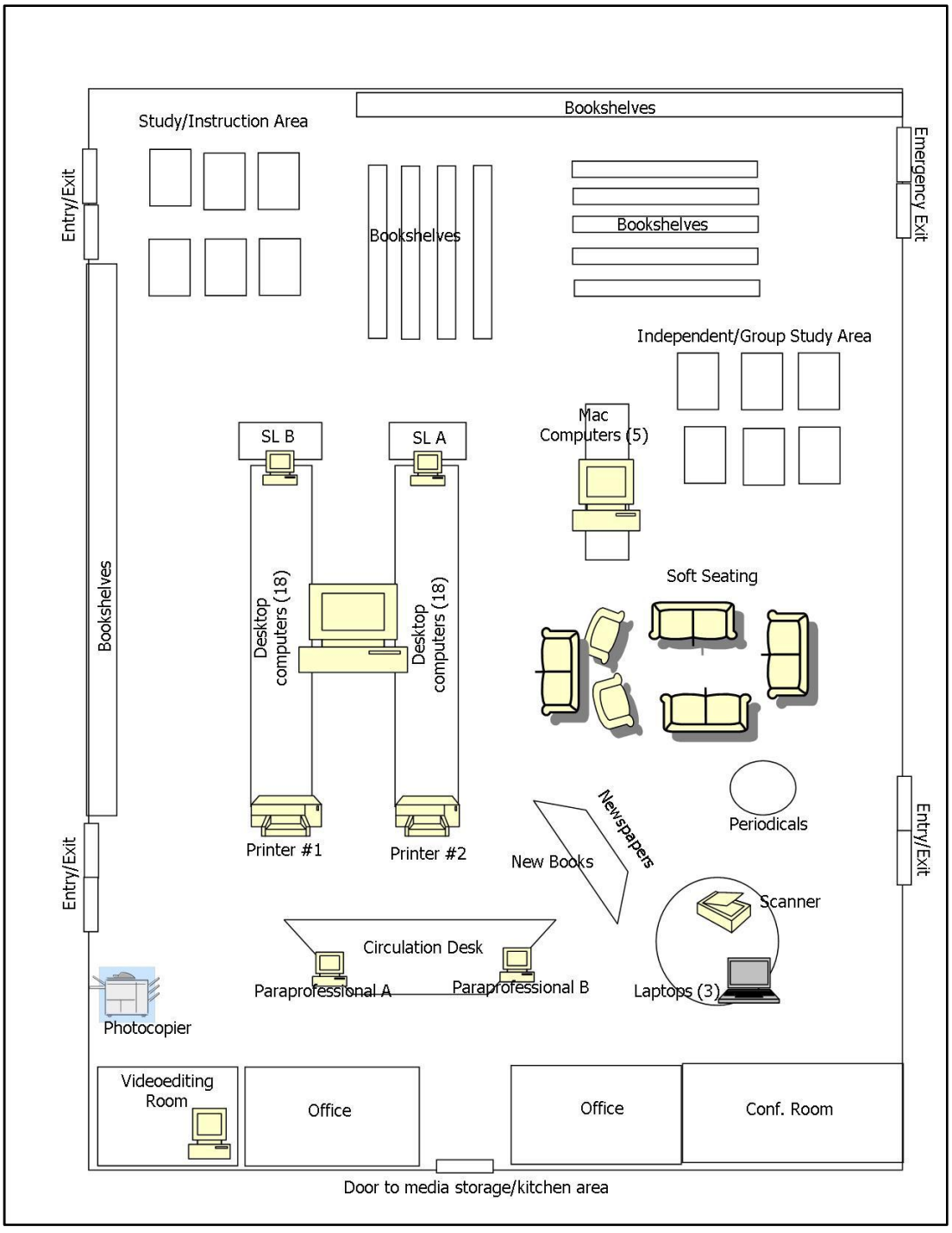


Figure 2. Map of Study Site School Library

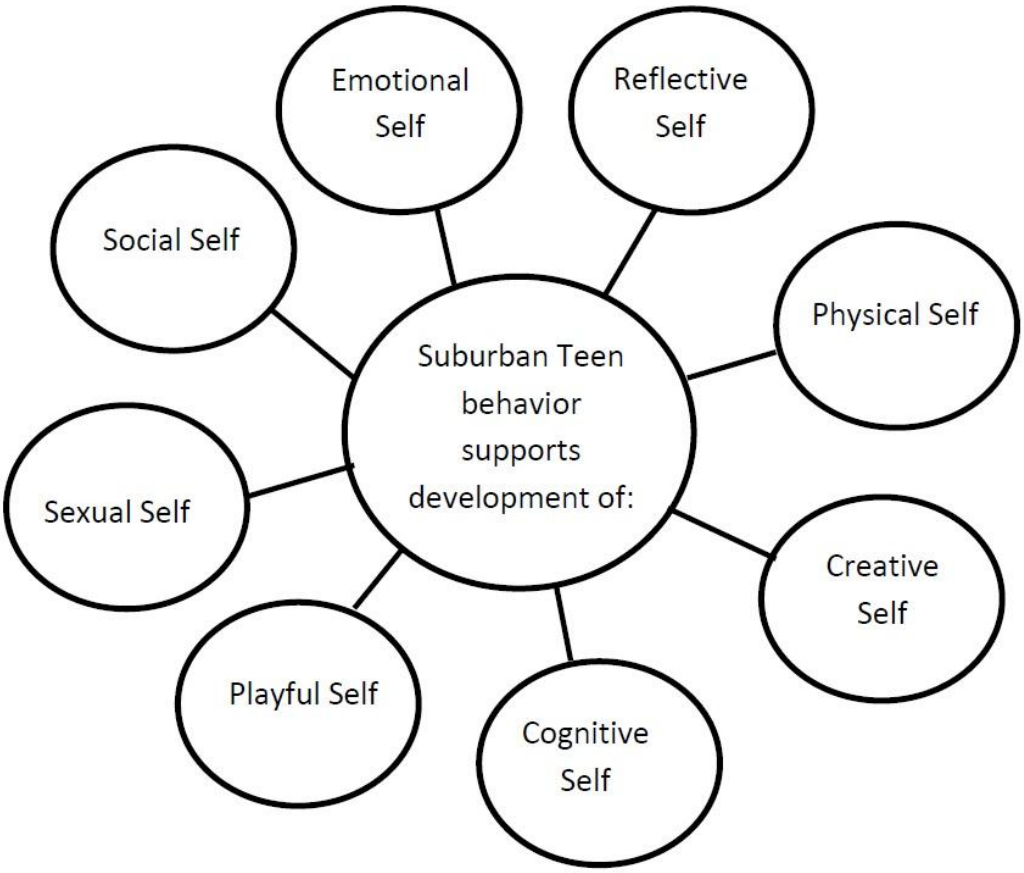


Figure 3. Theoretical Model of Suburban Teen Development

Appendix A

Observation Protocol

Date: **Location:** **Observer:**

Time	Events	Impressions

*Use the space below make any special notes regarding interruptions, items requiring additional explanation, or other potential uses outside of the observation notes table above, such as designating initials or descriptions for identification of participants when creating the context map for this observation.

Appendix B

School Librarians' Interview Guide

1. Can you provide me with a description of your typical students?
2. Why do you think students come into your library?
3. What types or kinds of information do you see students looking for?
4. Describe some typical interactions you have with students during day-to-day library operations.
5. How do you use Web 2.0 or virtual technologies in your work with students?
6. What have students taught you about digital age technologies and their place in the school library?
7. How do you see students interacting with one another when they come to your library to find information?
8. Can you close your eyes for me for a moment, and think back to a time when a student came to you for everyday life information? How did it go?
9. Tell me about an experience you can remember when you interacted with a student or a group of students and later wished the interaction had gone differently.
10. If you were to describe the students at your school to a visiting educational team from another country, how would you describe them? What would be important for the visiting team to know about your adolescent population?

Appendix C

School Librarian Interview Informed Consent

My name is Lori L. Franklin, and I am a graduate student at Emporia State University's School of Library and Information Management and am currently conducting research for a dissertation. The study I am conducting involves learning about the everyday life information seeking behaviors of adolescent students in a digital age school library setting, as well as the interactions between school librarians and students working together in the BVSW library. As part of this research, I will be conducting a school librarian interview.

In this interview activity, I will meet with the school librarian (you) in the school library setting, after school hours, for approximately one hour to one and one half hours. I will ask you several questions, and will expect honest answers.

I appreciate your willingness to participate in this project. It is hoped that information uncovered during the interview session will help school librarians as they go about working with students in school libraries. It is also expected that your answers will help me to learn more about the types of everyday information students look for in school libraries.

Before I start the interview, you should know that you have explicit rights. They include:

- Your participation in this interview is voluntary;
- You are free to refuse to answer any question at any time;
- You are free to withdraw from the interview at any time;
- You will not be penalized for withdrawing from the interview or refusing to answer a question.

If you are uncomfortable at any time during the interview, either physically (such as if you are too cold or too warm), or emotionally (if you are asked a question that makes you uneasy) please let me know and I will do my best to change the circumstances to make you more comfortable.

Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation arising from this focus group interview. The contents of the focus group interview will remain confidential.

Any information from the interview will be available only for teaching and research purposes. Any digital recording/note taking occurring during the interview will be permanently erased or destroyed at the conclusion of the project.

***I have read (or heard) the above statements and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I have concerning the procedures and potential risks involved. I understand the possible risks involved and I assume them voluntarily. I also understand that I can withdraw from the study at any time without being subjected to reproach.**

_____ _____

School Librarian Date

If you have any further questions, or if you sustain a research-related injury, please contact Lori L. Franklin at 913.780.7130 or lfrankli@emporia.edu.

Appendix D

Student Focus Group Interview Guide

Go over study purpose and informed consent.

1. Why do you come to the library?
2. What types of information do you need? Can you tell me what you are looking for when you come here to find information?
3. Who helps you find information when you need it?
4. What technology do you use when you are in the library?
5. What technology is missing in the library?
6. Can you close your eyes for a moment, and recall a time when you came to the school library to find personal information (not school related)? Thinking back, how did this experience go?

Appendix E

Informed Consent for Student Focus Group Interview

My name is Lori L. Franklin, and I am a graduate student at Emporia State University's School of Library and Information Management and am currently conducting research for a dissertation. The study I am conducting involves learning about the everyday life information seeking behaviors of adolescent students in a digital age school library setting. As part of this research, I will be conducting a student focus group interview.

In this focus group interview activity, I will meet with students who are scheduled to attend a weekly Advisory class session in the school library. I will ask students in this group a few questions, and will expect honest answers. The focus group interview should take approximately 30-45 minutes.

I appreciate your willingness to participate in this project. It is hoped that information uncovered during the focus group interview session will help school librarians as they go about working with you in the school library. It is also expected that your answers will help me to learn more about the types of information you are looking for in your everyday life.

Before I start the interview, you should know that you have explicit rights. They include:

- Your participation in this focus group interview is voluntary;
- You are free to refuse to answer any question at any time;
- You are free to withdraw from the focus group interview at any time;
- You will not be penalized for withdrawing from the focus group interview or refusing to answer a question.

If you are uncomfortable at any time during the focus group interview, either physically (such as if you are too cold or too warm), or emotionally (if you are asked a question that makes you uneasy) please let me know and I will do my best to change the circumstances to make you more comfortable.

Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation arising from this focus group interview. The contents of the focus group interview will remain confidential, except in the case where information comes to light that may lead to your harm or the harm of others. In such cases, the informant (you), the researcher (I), and the adult guardian (the school librarian) will decide upon the best course of action.

Any information from the interview will be available only for teaching and research purposes. Any digital recording/note taking occurring during the focus group interview will be permanently erased or destroyed at the conclusion of the project.

***I have read (or heard) the above statements and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I have concerning the procedures and potential risks involved. I understand the possible risks involved and I assume them voluntarily. I also understand that I can withdraw from the study at any time without being subjected to reproach.**

_____ _____

Student Date

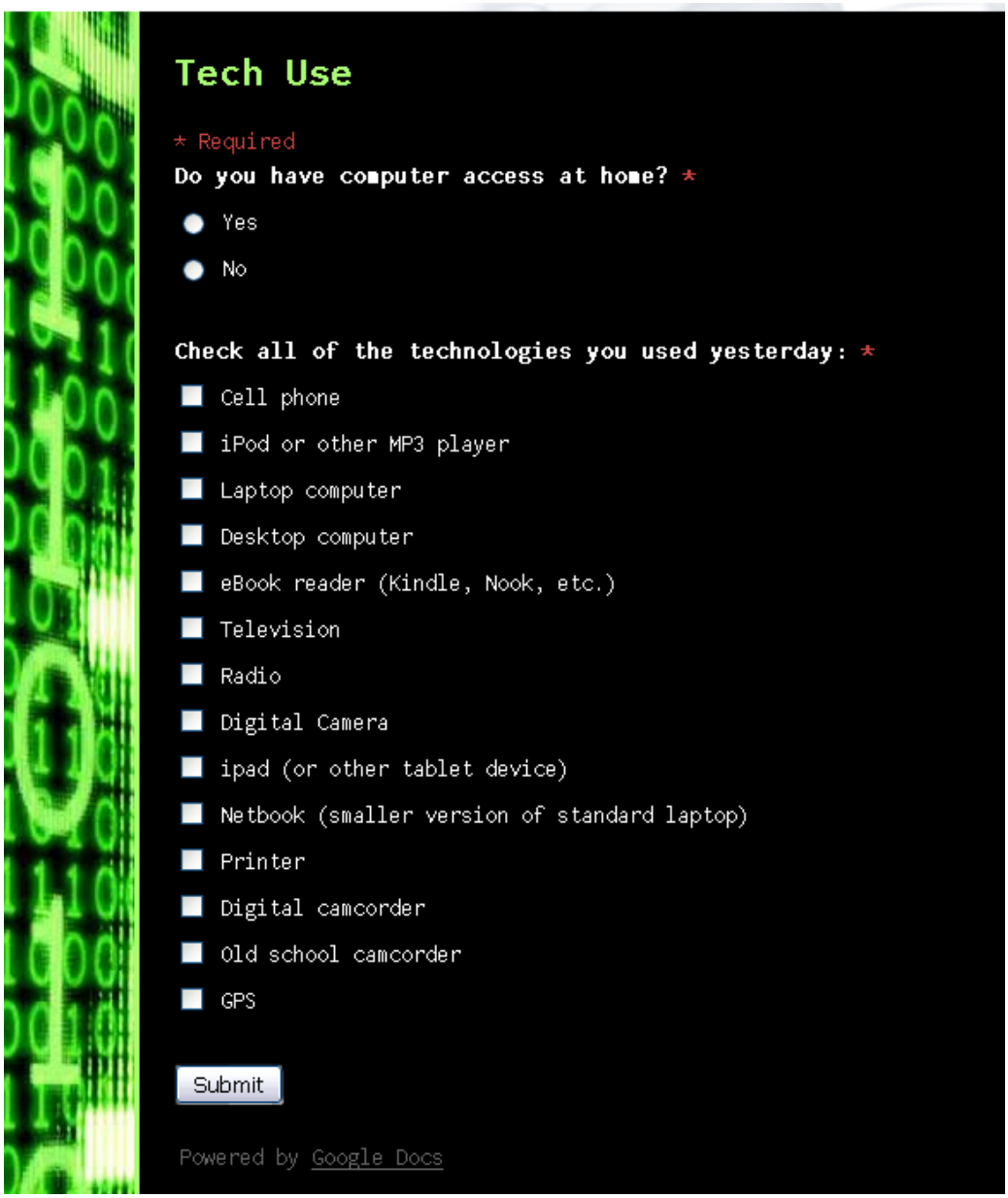
_____ _____

Parent (if required) Date

If you have any further questions, or if you sustain a research-related injury, please contact Lori L. Franklin at 913.780.7130 or lfrankli@emporia.edu.

Appendix F

Edmodo Advisory Class Poll #1 – Tech Use



Appendix G

Edmodo Advisory Class Poll #2 – What I Look For

What I Look For

You will be answering this question to tell me what you are looking for when you need personal information. In other words, this question is not about a class assignment, but about what you yourself need. Social networking sites (Facebook, MySpace, etc.) and e-mail providers are not included in this poll.

* Required

When I go online, I usually search for: *

Check the choices that apply to you - as many as you need

- ◯ Shopping sites (Amazon, Zappos, and other retail online shopping sites)
- ◯ Personal Health Information
- ◯ Automobiles (either shopping, repair, or just looking)
- ◯ Music (downloading, file sharing)
- ◯ Celebrities (sites that tell me more about music, film, and TV stars)
- ◯ Wikipedia (and other encyclopedia-type sites that have general information)
- ◯ Weather (TWC, Accuweather, etc.)
- ◯ News (CNN, USAToday, Fox News, etc.)
- ◯ Online Newspapers (The Kansas City Star, The New York Times, etc.)
- ◯ Travel
- ◯ Craigslist
- ◯ Humor (Cracked, College Humor, etc.)
- ◯ Hobbies
- ◯ College Searches
- ◯ Careers
- ◯ Entertainment (YouTube, Google Videos, etc.)
- ◯ Library Sites (school library, public library, college library)
- ◯ Religious Sites (information, churches, etc.)
- ◯ Instructional Sites (Blackboard, Moodle, or other online sites associated with learning or classes)
- ◯ Other:

If none of the above... *

If none of the selections listed above describe what you search for when you go online, please share your own answer here.

Appendix H

Edmodo Advisory Class Poll #3 – Who Are Your Go-To People?

Who Are Your Go-To People?

Who are the people you go to when you need information?

* Required

Choose the selections that describe who you seek out when you need information for yourself: *

You may pick more than one. Your answer refers to when you need personal information and not for a school assignment.

- [ ] Friends
- [ ] Parents
- [ ] Other relatives
- [ ] School librarian
- [ ] Public librarian
- [ ] Guidance counselor
- [ ] Retail help (person at a store)
- [ ] Teacher
- [ ] Other school employee
- [ ] Friends' parent(s)
- [ ] Neighbor
- [ ] Tutor
- [ ] Doctor
- [ ] Boss
- [ ] Other:

Submit

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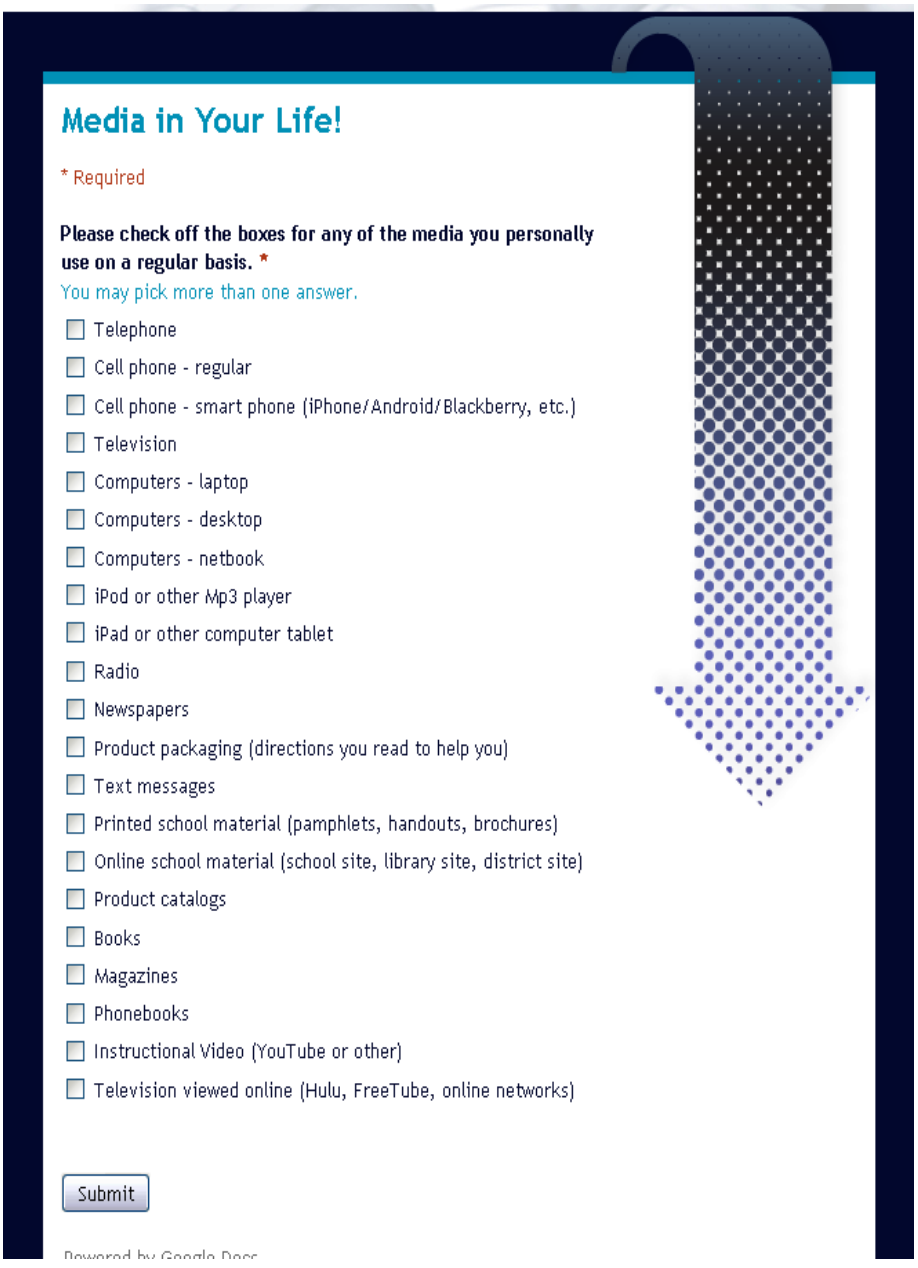
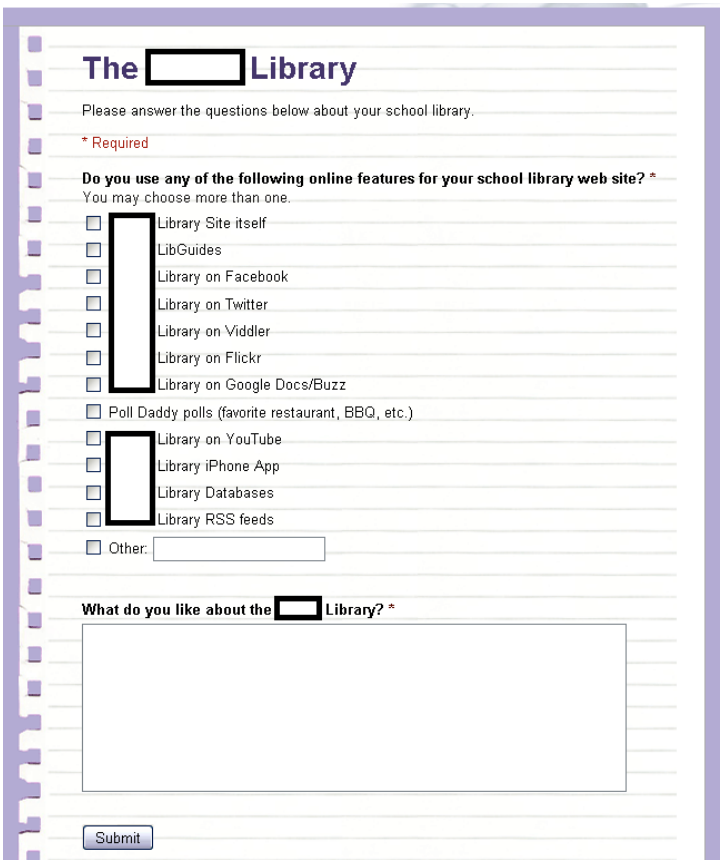
Appendix I

Edmodo Advisory Class Poll #4 – Media in Your Life



Appendix J

Edmodo Advisory Class Poll #5 – The Library

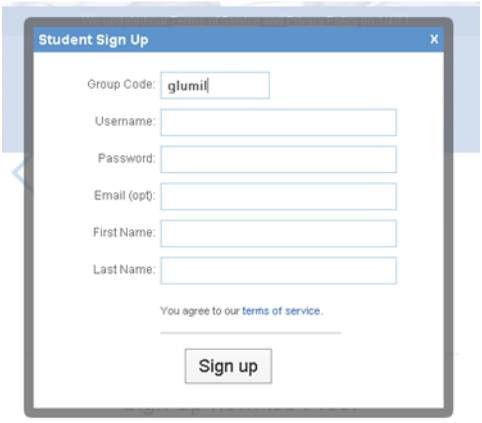


Appendix K

Instructions - Student Login for Edmodo Advisory Class Account

Directions for Creating Your Edmodo Student Account

1. Please visit: http://www.edmodo.com
2. Scroll down and click on: **I'm a Student**.
3. A box requesting information will appear on your screen. Use the code: **glumil** to begin filling out your information. Here is what you should see:



4. You do not have to provide your email address – it is up to you.
5. Create a username and password that you will easily remember, because you will sign into this account five times to fill out different polls.
6. Once you have logged in, you will see that you are now a member of the class: BVSW Advisory.
7. Your information will be kept strictly confidential. After this project is completed, all records of the communications we share will be deleted.
8. Please remember to be as honest as possible in your answers – the feedback you give me will help me to learn more about how adults might work with students your age in school libraries!
9. Thank you!
10. Questions? Feel free to contact me at: lfrankli@emporia.edu

Appendix L

Edmodo Advisory Class Informed Consent

My name is Lori L. Franklin, and I am a graduate student at Emporia State University's School of Library and Information Management and am currently conducting research for a dissertation. The study I am conducting involves learning about the everyday life information seeking behaviors of adolescent students in a digital age school library setting. As part of this research, I will solicit student input through poll questions provided on an online, educational site created for teachers working with students.

In the polling activity, students will create an Edmodo account, and will log in on five separate occasions to answer questions relating to their uses of technologies and their everyday life information seeking actions. Students will use their weekly Advisory Class time in the BVSW library to create their student accounts (with librarian supervision) and will answer poll questions on five separate dates between March 30, 2011 and May 18, 2011. The polls are designed to be answered within a 15 minute time frame.

I appreciate your willingness to participate in this project. It is hoped that information uncovered during the focus group interview session will help school librarians as they go about working with you in the school library. It is also expected that your answers will help me to learn more about the types of information you are looking for in your everyday life.

Before you begin this project, you should know that you have explicit rights. They include:

- Your participation in the online Edmodo Advisory class activity is voluntary;
- You are free to refuse to answer any question at any time;
- You are free to withdraw from the online Edmodo Advisory class activity at any time;
- You will not be penalized for withdrawing from Edmodo Advisory class activity or refusing to answer a question.

If you are uncomfortable at any time during the activity, either physically (because you may not be able to use a computer or have an injury that prevents you using a keyboard) or emotionally (if you are asked a question that makes you uneasy), please let me know and I will do my best to change the circumstances to make you more comfortable.

Under no circumstances will your name or personal identifying characteristics be included in the dissertation or any other report or presentation arising from the Edmodo Advisory Class activity. The contents of the Edmodo poll results will remain confidential. Any information from the Edmodo activity will be available only for teaching and research purposes. Any electronic information produced during the Edmodo Advisory Class activity will be permanently deleted at the conclusion of the project.

***I have read (or heard) the above statements and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I have concerning the procedures and potential risks involved. I understand the possible risks involved and I assume them voluntarily. I also understand that I can withdraw from the study at any time without being subjected to reproach.**

_____ _____

Student Date

_____ _____

Parent (if required) Date

If you have any further questions, or if you sustain a research-related injury, please contact Lori L. Franklin at 913.780.7130 or lfrankli@emporia.edu.

I, _____, hereby submit this dissertation to Emporia State University as partial fulfillment of the requirements for a doctoral degree. I agree that the Library of the University may make it available for use in accordance with the regulations governing materials of this type. I further agree that quoting, photocopying, or other reproduction of this document is allowed for private study, scholarship (including teaching) and research purposes of a nonprofit nature. No copying which involves potential financial gain will be allowed without written permission of the author. I also agree to permit the Graduate School at Emporia State University to digitize and place this dissertation in the ESU institutional repository.

_____

Signature of the Author

_____

Date

Everyday Life Information Seeking (ELIS) Practices of Suburban Teens in a Highly Technological High School Library: A Case Study

Title of Dissertation

_____

Signature of Graduate School Staff

_____

Date Received