INFORMATION LITERACY AS A VALUE:

NEW PERSPECTIVE FOR DEVELOPING A SECONDARY EDUCATION

LIBRARY PROGRAM

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This dissertation was driven by a personal passion for guiding both elementary and secondary education students in the enjoyment of discovery through research. Driven by sharing the concepts of information literacy, known primarily within the library profession, I was able to develop a high school library program that supports and develops student researchers.

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Abstract

High school students require the proficient understanding and execution of information literacy processes and skills in preparation for the challenges of the “information ecosystem” (ACRL, 2015, p. 2) they inhabit. Although teacher-librarians grapple with developing materials, programs, and resources intended to support increases in high school student information literacy knowledge, students continue to enter higher education with limited skills to support the rigor of academic research (Gross & Latham, 2012). Previous research of Kuhlthau (1991), Bruce (2008) and Oakleaf (2009) focused on information literacy development through motivation, varied experiences, and incremental assessments. Essential to the development of a high school student’s information literacy knowledge is the school’s library program (Eisenberg, 2008). A new perspective to view a high school library program will heighten stakeholder shared support, awareness, responsibility, and expectations, for the development of sustainable information literacy processes and skills that can be viewed and utilized in a new context for transferring and recontextualizing into higher education. This semester long case study examined the perspective of stakeholders within Western High School (pseudonym) in Massachusetts to determine whether the existing library program supports the development of student information literacy skills. The study utilized Wiggins’ (1993) assessment for learning theory and Bickman’s (1987) use of a program theory to evaluate student and library program outcomes. The research determined the library program supported student information literacy growth when librarian and educator objectives were intertwined when creating lesson plans, tasks, guides, assessments, and rubrics. Students were able to learn, practice, self-assess, correct, redirect their learning, and individually invest in their information literacy knowledge development.
Chapter 1

“Lack of emphasis on the knowledge base and specific skills needed to be a successful information seeker is also evidenced in the assumption that these are skills everyone has, that growing up with computers provides these skills and that what you need to know can be self-taught” (Gross & Latham, 2009, p. 346).

High school students are expected to successfully transition into academic and career challenges with the ability to utilize research skills in order to use information properly, ethically, and effectively in combination with information and communications technologies (Grafstein, 2002; Gross & Latham, 2009; National Governors Association Center, 2010). Simultaneously, high school students must prepare for the responsibility of managing their own learning (Smith, Given, Julien, Ouellette, & Delong, 2013), which includes becoming a self-sufficient researcher. Research is a problem solving process by which students gain the information literacy skills of locating, evaluating, and using relevant information (Rankin, 1999, p.72). Association of College and Research Libraries has proposed redefining information literacy from a “set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (ACRL, 2001, n.p.) to a “repertoire of understandings, practices, and dispositions focused on flexible engagement with the information ecosystems, underpinned by critical self-reflection” (ACRL, 2015, p. 2). The proposed definition encourages students to become participants within a learning community, contributing to the knowledge of the whole, while utilizing a repertoire of information literacy skills and processes. Library practitioners, steeped in the practices of information science, understand the life implications of developing proficient, information literate students within
secondary education that eventually supports the transition into any continued learning environment.

With all the benefits to learning and self-sufficiency, library practitioners have consistently observed secondary and higher education students maintain a lack of information literacy skills necessary for academic research (Gross & Latham 2012; Gross & Latham, 2009; Kovalik, Jensen, Schloman & Tipton, 2010; Oakleaf, 2009; Smith, Given, Julien, Ouellette, & Delong, 2013). Academic research requires the location and use of information evaluated for authority, currency, and its relevance to the argument being examined. Julien & Barker (2009) determined high school students utilized a skimming technique, which glances for keywords, rather than “critical evaluation criteria such as authority, accuracy, objectivity, currency and coverage for determining the relevancy of a resource (p. 15). Smith, Given, Julien, and Delong (2013) found high school students understood the importance of information literacy, but lacked the ability to know where to locate quality resources (p. 90). High school students also required instructional support for deciphering and citing information resources (Asselin & Lam, 2007, p. 6). Therefore, the underdeveloped information behavior skills of high school students are not adequate to support a successful transition into a higher education learning environment.

Examining undergraduates, O’Brien and Symons (2007) and Stagg and Kimmins (2014) determined students continued using many of the underdeveloped information literacy skills practiced in high school. Students that primarily used and depended on the open web could not distinguish between resource types, and considered the Uniform Resource Locator (URL), page design, and currency adequate evaluation indicators of a resources authenticity and authority (Stagg & Kimmons, 2014, p. 414). Open web searches generate unorganized, unqualified, and confusing information, which a student must evaluate. University professors, who perceived that
undergraduate general web searching would develop information literacy skills, noted students lacked the ability to identify scholarly articles necessary for academic work (Saunders, 2012, p. 229). The overdependence on open web searches coupled with the lack of understanding for determining and evaluating resource types can have damaging results when unqualified information serves as evidence for published or submitted for credit work. Others viewing and absorbing the misinformation as knowledge may perpetuate the transfer of what is offered to another’s knowledge built from incorrect information.

Further complicating the lack of information literacy skills is the self-perceived confidence students have for their own search abilities. Gross & Latham’s (2009) study considered student information literacy skills through the perspective of the perceived self-confidence. Students overconfidently perceived themselves as having proficient information literacy skills, which the researcher correlated with exposure to information and communications technologies and self-taught information seeking since infancy (p. 346). Gross and Latham (2009; 2012) determined that constant access to information communications technologies and information sources leads to the perpetual overconfidence in student self-perception of possessing proficient information literacy skills. Students rush to use information and communication technologies, lack a research plan, and search in a social manner lacking the metacognition necessary to develop information behavior that supports effective research strategies (Asselin & Lam, 2007, p. 6). The overconfident student often feels it is not necessary to reconsider generated findings, self-assess the search query, or reflect upon the overall research process.

Compounding the problem is how students learn the research process; develop ethical and aesthetical information behavior; and acquire information literacy skills. Probert (2009)
determined that high school students were not guided to engage in appropriate research behaviors, but were given webbing software, skimming, scanning, and note taking techniques, which lack information literacy skills guidance (p. 29). The educators studied did not understand the difference between information communication technology and information literacy skills (p. 29). Asselin (2005) found that both content teachers and teacher-librarians determined it was each their responsibility to teach the research process and information literacy, but could not determine how to include developing the skills in an overcrowded curriculum (p. 23). When each teacher and teacher-librarian separately teaches information literacy, there is the potential for inconsistent learning of multiple methods. Multiple research process methods confuse and dilute information literacy development, with the side effect of producing skills and supporting processes that may not be transferable between courses or academic environments.

The American Library Association (1989) recommended to reconceptualize information literacy with new educational methods founded in theory. Webber and Johnston (2000) recommended further research on student experiences and responses for how “information literacy is best learned” (p. 395) beyond inappropriate pedagogic strategies that have narrowed information literacy to a set of tasks (p. 381). Dunham’s (2014) examination of first year student assignments that required information seeking within fourteen colleges and universities in Iowa offers possible reconceptualizing of information literacy instruction for high schools. Professor expectations of information literacy indicated an expectation for students to discover through the inquiry and review of information, know how and where to find and use scholarly resources, and understand how to support a thesis through the synthesis and processing of information (Dunham, 2014, p. 9).
Reconceptualization creates an opportunity for developing a library program that embeds pre-searching for discovery research preparation, information literacy, and pivotal research process assessments, along with 21st century education methodologies and practices, in order to build student understanding and knowledge of any given topic.

**Purpose**

The purpose of this research is to examine whether the library program at Western High School supports the growth of student information literacy skills and processes. The study utilized a qualitative approach to determine student information literacy growth once instructional pedagogy is embedded into a comprehensive program guided by the school library program. Reconceptualization for how information behaviors are acquired requires a pedagogical shift from the research process and information literacy as a set of tasks leading to a product, to metacognitive processes where students interact, inquire, and learn from information while assessing and reflecting upon the search process (Dunham, 2014; Grassian & Kaplowitz, 2009). High school educators and librarians will benefit from this research, as they are responsible for collaborating with each other as students are guided through research processes in preparation for higher education. The data collected will be used to develop an essential goal to reflect upon and guide educational leadership decisions that will incorporate information literacy processes into school culture, curriculum, practices, and assessments, in order to promote the continued development of sustainable, transferable and recontextualized skills. In addition, the data will provide the educators with evidence to change establish barriers that create a hidden culture that traditionally and unknowingly can establish unjust situations by limiting specific groups of students from receiving opportunities in information instruction and engagement. Librarians, educators, administrative leadership, and students have a shared responsibility to collectively
prepare for the “the dynamic and often uncertain information ecosystem in which all of us work and live” (ACRL, 2015, p.2). Information literacy can serve as an essential goal and become a reflection point as the information ecosystem constantly changes.

**Significance of the Research Problem**

A high school library program that incorporates research preparation, information literacy processes and skills development, incremental assessments and self-assessments along with critical and reflective thinking within the research process provides the potential for increased knowledge within its community of educators and students. The high school library program under study was designed to facilitate and validate the research collaboration opportunities between the library practitioner and school educators. This study adds to the scholarship of advancing information behavior instruction by threading preparation, information literacy, processing, inquiry, assessment, and reflection. This study considers how students have been traditionally directed to engage in information behaviors as it introduces possible suggestions for applications for learning within a changing “information ecosystem” (ACRL, 2015, p.2). Important consideration is given to the State of Massachusetts’ emphasis on the development of writing, inquiry, and the use of supportive evidence within the recently adopted Core Curriculum State Standards (NGA Center, 2010).

When asking students to conduct research, educators have often utilized information literacy models, writing composition instruction, and critical thinking methods as forms of instruction. Kuhlthau’s (1999) information literacy model, Information Search Process (ISP) focuses on a researcher’s ability to develop meaning by engaging in inquiry and critical thinking within the cognitive processes associated with continued search choices. Writing composition utilizes inquiry as a method to transform raw data through explanation and analysis (Hillocks,

This study provides implication of practice for how educators guide the mindset of a student researcher to develop individual sustainable and transferable information literacy processes and skills that can be recontextualized. The use of a pre-search guide and research preparation model, unique preparation methods utilized at the onset of the research process within Western High School, offers students information seeking choices that build upon the information known, in order to collect and transform new information into meaning (Grassian & Kapowitz, 2009; Kuhlthau, 1991). Guiding methods for critical reading, organization, and synthesis of information within both individual and collaborative projects emphasizes a student’s information behavior growth. The practice of strategically placed formative assessments within the research process may redirect, correct, and progress a student’s research skills schema development and overall knowledge growth.

Broader implications of the study concern the development of library programming that uses assessment for learning theory (Wiggins, 1993) and a program theory (Bickman, 1987) for the incorporation of a comprehensive library program within a school or school district. Assessments and evaluations offer data that determines if the library program is working. Evidence based changes that improve practice lessen the possibility of educators relying on previously learned individual pedagogy (Probert, 2009, p. 31). This study also supports initiating policies that purchase and replace information and communication technology tools, necessary components of a student’s information inquiry and development of proficient information literacy skills.
Because this study influences setting policy that develops consistency of practice, it also lays the foundation for developing a culture that supports the transfer of information literacy skills (Herring & Bush, 2011, p. 130), where students critically think about how to best manipulate an inquiry that is “purposeful, reasoned, and goal orientated” (Halpern, 1999, p. 70). This study also considers the implications for cultural and policy expectation understanding for the community to build an appreciation for information inquiry, behaviors, practices, and assessments.

**Position Statement**

I come to this work as a second career teacher, combining a passion for developing student researchers with previously practiced marketing and organizational management skills. For the past three years, I have been afforded the opportunity to develop, market, and manage a high school library program. The goal of the library program is to develop information literate students who can sustain, transfer, and recontextualize the processes, skills, thinking, and behaviors necessary when engaged in research. I have been able to consider and implement various aspects and elements of information literacy into a high school’s library program. Now it is time to determine if what was implemented actually works.

Before entering the field of education, I graduated from University of Massachusetts, Isenberg School of Management and was employed in business sales and marketing. My unique path to education offered a rich foundation for steering me away from the entrenched culture of teacher resistance and toward continually seeking improvements for accepted practices. One such pursuit is aggressively advancing how students proficiently master the processes necessary to develop life-long information literacy skills within a school community. My passion for developing information literate students began while earning a Masters of Library Science
degree from Simmons College. Although coined in 1974 by Zurkowski and later researched and modeled by Eisenberg & Berkowitz (1988), Kuhlthau (1991) and others, I recognized the seriousness of the concept that essential information literacy skills must continue to grow exponentially with the impetus of the importance of information and communication technology. As I began to teach information literacy, I noticed a disconnection between the learning objectives of educators and those of teacher-librarians. Educator objectives surrounded growth within the content, while the teacher-librarian wanted students to understand the nuances of information behavior and information and communications technologies. Although fundamentally linked through a student’s need for information, once placed into practice information literacy lessons (i.e. research lessons) became a series of tasks leading toward a single content-based assessment; usually a long paper. Educators expected a step-by-step robotic process for students to be directed quickly through in order to retrieve exact information within print text and online sources. Frustrating was the assumption that one lesson to guide searches would be enough for students to not only gain the necessary knowledge and complex understandings to engage in information behaviors. As a teacher-librarian, I wanted to create a deeper understanding for not only how students located, evaluated, synthesized, and used information, but also for the thinking, processing, and pride a student can possess once information literacy skills are owned.

As I grew in my practice, I noticed three significant opportunities that were not a focus within the information literacy models: first, was the incorporation and understanding of reading strategies into information literacy instruction; second was how students prepared for engaging in research; and third was how students aesthetically value information. It was through my
education experiences that these three opportunities emerged and became the cornerstone for Western High School’s library program.

The first opportunity, reading, grew from my employment in two socioeconomically challenged school districts. Experiencing schools with a student population that entered kindergarten knowing only 2.5 letters of the alphabet and associated sounds, high free and reduced lunch counts, and substantial transiency rates, I learned that poverty had its own priorities. Families made survival choices associated with extreme poverty and not toward education. Before the research process could be considered, students needed to learn how to read, write and communicate, as well as be exposed to experiences their environment did not provide. This realization forced me to admit that my Masters of Library Science was not enough. I needed pedagogical understanding of early literacy, computer technology, and most importantly, I needed to build a foundation in educational philosophy and theory. I especially needed to understand how marginalized populations within challenging socioeconomic conditions approached reading, to better teach, assess, and differentiate effectively.

The second opportunity, research preparation, grew from developing a middle school Information Technology Curriculum for grades 5-8. While earning Masters in Education in Curriculum and Instruction with Technology from Framingham State University, I remained focused on information literacy, but with a deeper understanding for how students learn, read, write, and critically think. Middle school students want guidance and reasoning for “why” the content being taught is necessary. I broke down information literacy pedagogy adding answers to the “why” questions students presented into palatable practices student could understand and educators could mimic. Preparation considers what a student already knows about his or her research and combines it with the organization necessary to create a well-developed thesis with
techniques necessary for Boolean searching. In addition, my interactions with peer educators and administrators grew to focus on the institutional discussions surrounding information literacy as components of technology literacy, critical literacy, information inquiry, and information fluency (Callison & Preddy, 2006). I was now thinking about the school community and was ready for the responsibilities of a librarian to shift from separate class instruction to collaboration and embedded classroom teaching (Loesch, 2010).

The third opportunity, aesthetic value, became apparent as I transferred to a high school community. In order for educators to support a concept, they required a central high school community focus towards information literacy. As I considered the scales of philosophy, theory, pedagogy, and evaluation, I wanted to develop an understanding that would embrace all content disciplines, teaching methods, and learning style differences, while motivating towards information literacy. While ethical values were embedded in the evaluation and formatting of information, students never gained an appreciation for the nuances surrounding a piece of information, nor for their own unique work.

Author to organization background. Simultaneous to the development of the middle school Information and Technology Curriculum, educators in my district were becoming increasingly concerned with the lack of quality in research based student work. Educators reasoned quality was lacking due to the way students were using technology. However, I believe educators did not understand the difference between information literacy and the use of information and communications technology tools. Probert (2009) supported my belief through the research of three secondary education schools in New Zealand which found 25% of educators consider information literacy and use of information and communication technology to be defined the same (p. 28). The findings support a professional challenge to separately define
information literacy, information and communication technology, and their associated skills among educators. Educators in my school constantly reflected on their own assumptions about technology proficiency, information use, and knowledge transfer. This reflection of practice created opportunities for developing a level of understanding and learning in which collaboration between educators and the teacher-librarian could support the learner. Rather than just seeing students as the target for learning the research process and skills, educators and administrators also became learners through professional development. This collaboration and change to practice finds its foundation in cognitive development theory, where learners understand and remember more when presented with a real-life problem that needs to be solved through research, including the engagement of information and communication technology (Loesch, 2010, p. 33).

While we understand secondary education students are offered minimal time for the research process, library services, or seeking additional assistance (Loesch, 2010, p. 33), educators need to practice interdisciplinary collaboration for student research preparation and information literacy. Closing the circle of learning to create sustainable researching processes and skills that transfer between courses and can be recontextualized between situations requires all teachers incorporate information literacy into the curriculum. More work needs to be completed in the area of leadership, distributed between educators, administrators, and students, for understanding the value of collaboration with and content learned from a teacher-librarian.

**Bias challenge.** Often viewed as a librarian outlier, I do not accept the traditional roles of the librarian being a support by request only educator. I take a positive position with regard to librarian-educator collaboration being directly embedded into content preparation and co-teaching. My position has influenced district and school decisions concerning information and communication technology supports, professional development, and research process curriculum.
Serving on several leadership committees, I have advocated for preparing student understanding for proper use of information, developing his or her metacognition within the research process, and assessing for skills gained. The leadership roles and involvement have provided me with an inside perspective into the challenges associated with administrative decisions. I must challenge myself to recognize and record the perspectives and the counter-perspectives of others without placing biased assumptions upon my interpretations. Such would force my thoughts into the research rather than letting the research emerge from the data collected.

Possible bias can develop through the defining of a student’s equal access to information. My position is supported by Fitzgerald (2004) who found equal access to the information was through computer technology, not the computer itself. Connecting students to the information through a variety of computing tools takes into consideration both availability and differentiation of learning. Each student who participates in the library program comes with intersecting cultural characteristics and diversity aspects of ethnicity, gender, and sexual orientation. These perspectives have bearing on how a student approaches the library and reacts within the programming.

Considering my own experience within the current library program, I find bias when secondary educators limit research process projects to only high-performing students who have an assumed aptitude toward learning within traditional school structures and/or those with a home computer. In doing this, educators limit the potential learning for those who learn differently and those without a home computer. Researching enables all students to engage in critical thinking, inquiry, problem solving, and the enjoyment of learning and new discovery. I believe it is the responsibility of all educators, including the teacher-librarian, and administrators
to create an environment where collaboration supports differentiating and accommodating all learners within the research process.

**Preventing bias.** Constant monitoring and evaluating of my relationship to the research will support the prevention of bias (Machi & McEvoy, 2012, p. 18). Understanding the restrictions educators and administrators have with the curriculum will add insight to the research. The research should be constantly monitored in relationship to class, ethnicity, gender, ability, and other group affiliations (Creswell, 2012, p. 277). In addition, this researcher plans to use a program theory, generated from evaluation theory as a lens by which to examine Western High School’s library program. Because the librarian conducting the research has also been the primary leader in implementing the library program, self-reporting is not an acceptable resource for valid measures of data (Bickman, et al, 2009, p. 96). The researcher may state what the program components are, but may offer no opinion of the influence on students or educators. Thus, the researcher kept running notes of activities, in order to insure opinion is not incorporated into the research findings. Finally, due to the paucity of secondary education library program research, there must be a monitoring of terms. Scholarly terms derived from multiple literature sources must be explained and used to create a common language between students and educators (p. 278). Terms and definitions should be transferable to academic environments, which embody the spirit of college and career readiness.

**Research Questions**

A qualitative research case study was conducted to explore whether a library program’s approach toward information behavior positively influences student information literacy skills and processes.
**Research question one.** How does Western High School’s library program support information behavior?

**Research question two.** How do Western High School’s educators and administrators describe their experiences with the library program’s influence on information behavior?

**Research question three.** How do Western High School’s students describe their experiences with the library program’s influence on information behavior?

**Theoretical Framework**

Educators complain that students lack strategic information behavior skills necessary to proficiently retrieve, select, evaluate, and utilize information because of student assumptions that their experience with information and communication technology tools provides adequate scholarly research experience. Recognizing the increasing amounts of information, as well as methods of information delivery, library practitioners have adopted information literacy methods and models to assist with guiding behaviors within the research process. Information literacy sits as a cornerstone of school library programs because through the engagement of information knowledge is gained. Grafstein (2002) posits that the general components of information literacy are (1) designing a focused research question or thesis, (2) formulating hypotheses, (3) locating, evaluating resources, (4) determining resource relevance to the research, (5) synthesizing the resources into a “logical and clearly-written, coherent argument, forming conclusions” and identifying further research (p. 53). These components, once considered, can guide any information search undertaking.

**A foundation for theory.** Shaping a library program within 21st century education requires reconceptualizing of information literacy to correspond with educational methodologies through scholarly research (ALA, 1989; Webber & Johnston, 2000) that is ongoing, as the field
of education is placing significant importance on the research process. Reconceptualization influences the school library program when information literacy is combined with educational methodologies and curriculum planning. Where information literacy may have been primarily followed during a formal research process, reconceptualization considers any information need a student has as an opportunity to hone information behaviors, processes, and skills. The research process occurs when, after a query, students engage in information behavior that utilizes information literacy integrated with inquiry, critical thinking, and educator objectives to generate relevant, credible information necessary for completing tasks (Grassian & Kaplowitz, 2009; NGAC, 2010) and assessments. The reconceptualized research process blends with 21st century educational methodologies and curriculum planning, linking the library practitioner objectives directly with educator objectives.

The research conducted described and analyzed participant perceptions of Western High School’s library program. Participants considered information behavior within the library through their perspective lens. Included are a pre-search guide, a research preparation model, information literacy skills and library practitioner produced resources, as well as the interactions between librarian, educators, and students. The researcher wanted to know how the library program of the high school under study’s influences information behavior, in order to develop student information literacy skills. The library program’s influence on student information behavior was evaluated.

The understanding of information seeking as an important entity for a school library program helps to influence shaping of the theoretical framework to view the phenomena within the study. The theoretical framework begins with an examination of previous research designs and results. There is a paucity of research associated with evaluating a secondary school’s
comprehensive library program. However, publications that outline evaluation steps for school (Everhart, 1998; NEMA, 2010) and public or academic libraries (Hernon & Dugan, 2014) offer insight into current practices for a comprehensive analysis. Current school library scholarly research has focused on aspects of leadership, information literacy, influence on academic achievement, and collection development. These aspects are deeply interwoven into the school library’s culture and value set.

**Value as a foundation.** Western High School’s library program was at the center of the research. The program has been developed over time taking into consideration stakeholder values. Values are “ideas or meanings of what ought to be” (Chen, 1990, p. 57). Values that are “shared by a group or community…can affect what goals or outcomes should be used to judge the worth of a program, what causal process should be investigated” (p. 57). The concept of value becomes a thread that links theory and serves as the foundation for the theoretical framework. Theory “provides not only guidelines for analyzing a phenomenon but also a scheme for understanding the significance of research findings” (Chen, 1990, p. 18). The research threads of Bickman’s (1987) and Chen’s (1990) concepts of a program theory, along with Wiggins’ (1993) assessment for learning theory led to the creation of a theoretical framework to evaluate the library program.

Bickman (1987) and Chen (1990) recognize value as a component of a program theory. A program theory provides the basis for constructing a “plausible and sensible model of how a program is supposed to work” (Bickman, 1987, p. 5). A program theory constructs a logical model that reflects the values of the stakeholders. Wiggins’ (1993) assessment for learning theory is valued by the school district because it serves as the foundation for creating educational curriculum, methodologies, and pedagogy. Wiggins’ (1993) assessment for learning is the
foundation for *backwards design* curriculum planning that focuses instructional design on the learning results sought (Wiggins & McTighe, 2005). Thus, *value* serves as a catalyst for selecting the theories that become the perspective by which the library phenomena is viewed.

The concept of a program theory was developed as a direct result of evaluation theory and evaluation research. A program theory expands the evaluation process by clarifying “the connections between a program’s operations and its effects, and thus helps the evaluator to find either positive or negative effects that otherwise might not be anticipated” (Chen, 1990, p. 29). Simply defined, a program theory “may be nothing more than a few simple assumptions about why the program should work” (Bickman, 1987, p. 6). Chen’s (1990) more complex meaning states a program theory provides “guidelines for identifying which issues are most important in an evaluation, determining what method or methods are most relevant to address these issues, and suggesting how to apply the best methods for dealing with these issues” (p. 28). Thus, a program theory provides the authority for the theory, as a set of assumptions, to be determined and the evaluation process will support the analysis and judgment if the assumptions were actually met.

Chen (1990) offers a counter view on atheoretical evaluation, as it primarily focuses “on the overall relationship between the inputs and outputs of a program without concern for the transformation processes in the middle” (p.18). Chen and Rossi (1983) “argue that, at the extreme, an atheoretical approach to evaluation is characterized by adherence to a step-by-step cookbook method of doing evaluations” (as cited in Chen, 1990, p. 18). The Western High School study cannot be evaluated as a set of inputs and outputs, with no purpose for the outcomes. Rather, a program theory must contain a logic model that “uses three components to describe the program: the program activities or inputs, the intended outcomes or outputs, and the
mechanisms through which the intended outcomes are achieved” (Reynolds, 1998; Rogers, 2000; Rogers et al, 2000; Sedani & Sechrest, 1999 as cited in Sharp, 2011, p. 72). The logical model developed for Western High School is comprised of the categories of objectives, activities, outputs, and evaluation of benefits. Organizing details into these four categories describe the library’s program. Thus, this logical model combined the collected phenomenon data for the researcher to reflect upon the research in order to evaluate whether the library program objectives are being met through the intended outcomes.

The application of a program theory has implications for future research, policymaking, and using failure as a positive opportunity. A program theory links directly with the validity of the research, which supports how generalizable the findings can be within another environment (Bickman, 1987, p. 7). Thus, a program theory is valued in future research because the “program evaluation can make important contributions to social science theory if the program (independent variable) and measures of the program process and outcome (dependent variables) are theoretically meaningful” (Bickman, 1987, p. 7).

A program theory’s contribution to policy rests in how generalizable the “results of a particular program indicate that the program or some aspect of the program will work in some other setting” (Bickman, 1987, p. 8). When the construct of the program is understood, policy makers can adjust the program to be operational in a different environment (Bickman, 1987, p. 8). Failure within a program theory benefits the “program evaluation because the theory can be tested in a manner that reveals if program failure is a result of implementation or the theory itself” (Chen, 1990, p. 29). If evidence indicates that objectives have been met then the program theory selected supports the evaluation. If the evaluation indicates that outcomes have not met the objects then either the implementation failed or the theory selected to complete the evaluation
failed. Failure can be connected back to value, as it is an opportunity to recreate or redesign a program theory or program in order to fulfill a given need.

Wiggins’ (1987; 1993) assessment for learning theory also embraces failure and feedback as instruments of assessment for an individual to utilize when determining knowledge growth. The foundation to Wiggins’ (1987) assessment for learning theory rests in the discussion of thoughtfulness as an educational aim. Wiggins (1987) posits that thoughtfulness will engage students to both know and re-think “the moral and intellectual connotations of ‘thoughtlessness’ are thus interconnected” (p. 38). When work does not require good judgment or authentic engagement, the environment is fertile for detachment and unresponsiveness, often resulting in enabling the “student to get high marks for merely using algorithms and doing well on drills” (Wiggins, 1987, p. 38).

Although a relatively modern theory, the philosophical foundations of assessment for learning are found within Dewey’s understanding of developing judgment (Dewey, 1916) and Piaget’s discussions on habits of the mind (Piaget, 1973/1977) Dewey’s philosophy provides a foundation for understanding how individuals gain knowledge within an educational setting. Simply stating that Dewey’s philosophy is learning through experiences limits his argument that “thinking is experimental in that it involves a series of problem-solving episodes that occur as we attempt to survive and grow in an environmental context” (Gutek, 2009, p. 79). Dewey’s (1916) philosophy considers thinking and acting as a “unified flow of ongoing experiences” (Gutek, 2009, p. 81). Thinking and acting are joined because thinking is incomplete until tested by action (Gutek, 2009, p. 81). Dewey’s philosophy supports the initial tenets of Western High School’s library program because students are required to think and act within the experience of a research process to gain knowledge about a specific topic. Assessment for learning expands
Dewey’s philosophy into judgment. Threaded within the research process are many opportunities for individuals to make judgments that will self-assess progress. When an individual is able to transfer his or her information behavior between different environments or situations, then the judgments made have involved “effective adaptation to specific role and situation” (Wiggins, 1993, p. 204), which results in developing confidence as a learner and knowledge that can be recalled.

Wiggins (1993) relies on Piaget’s (1973/1977) development of habits, not as a repetitive drill but as a reflective thought for an individual to become “progressively self-disciplined as a thinker” (p. 204). Wiggins (1987) states that “mastering knowledge in use is not the same as mastering skill in drill; it is the (separate) exercising and maturing of judge how and when to use skill” (p. 47). Furthermore, Wiggins (1987) posits that the “essential failings of the high school stem focus its operational epistemology, its day-to-day definition of what counts as adequate ‘knowing’ and the intellectual conditions (assignments and materials) required for it” (p. 74). Thus, the consideration of habits is well beyond the population, encompassing the entire school community. Understanding assessment for learning requires a shift of thought for how humans learn. Wiggins (1993) states that “we cannot be said to understand something unless we can employ our knowledge wisely, fluently, flexibly and aptly in particular and diverse contexts” (p. 200). Wiggins suggests that the recontextualizing of knowledge requires student actions adjust to meet different phenomena while consistently showing sound judgment. In order to build knowledge, assessment for learning theory supports the multiple uses of varied assessment methods than traditional test taking. Recognizing that “even good teachers seem too prone to operationalize ‘teaching’ as telling and ‘knowing’ as ingestion of summaries of information; so-called ‘skill development’ is often merely a low-level manipulation of ‘givens’ according to
fixed and narrow guidelines” (Wiggins, 1993, p. 74). The assessment for learning theory places
value on the uses of formal, informal, formative and self-assessments, and reflective thinking
within the learning process.

Assessment for learning requires performance aims are known to the teacher and his or
her students (Wiggins, 1987, p. 48). Wiggins (1987) refers to this knowledge of the performance
aims as the essential question. An essential question must (a) go to the historical and logical
heart of the discipline (Wiggins, 1987, p. 54), (b) does not have a right answer (Wiggins, 1987, p. 54), and (c) involves “higher-order capacities of analysis, synthesis and judgment”
(Wiggins, 1987, p. 54). Establishing an essential question that allows an individual to think
through the possibilities towards answering the question allows for active participation of
knowledge acquisition, constant reflection and verification of knowledge gained (Wiggins, 1987, p. 54).

While assessment for learning is relatively modern, library practitioner Oakleaf (2009)
used the theory to ground research in teaching information literacy skills to undergraduate
students. Oakleaf (2009) expands assessment for learning by an individual by layering Popham’s
(2003) concept of “assessment as learning” (as cited in Oakleaf, 2009, p. 504) to become
“assessment as learning to teach” (p. 541). Oakleaf designs an information literacy model, which
is meant to “increase librarian instructional abilities” and improve student information literacy
abilities (p. 539). Important to the proposed research is Oakleaf’s utilization of the “assessment
activity itself as an instructional episode” (p. 540). While the research calls for additional
research to support assessments use as a method for improving library program instructional
design, it also opens the opportunity for library practitioners to design new models embedded
into assessments for learning.
**Conclusion.** This research collected evidence of information behavior and library program supports as possible indicators of student information literacy growth. Bickman’s (1987) offering of a program theory and use of a logical model is linked to Wiggins’ (1993) assessment for learning theory through value. Together they thread reasoning for continued information literacy recontextualized experiences, reflective learning assessments, and evaluation of intended program outcomes. Ultimately, becoming an information literate reflective learner through assessments, emphasized at all levels within the library program, helps students gain and improve information behavior. While the information behaviors connected to proficiently and effectively developing a thesis or hypothesis, locating and retrieving relevant and credible information, and synthesizing resources are necessary for knowledge development, the research presented recognizes these behaviors as becoming increasingly important life skills (Grafstein, 2002, p. 53). The exponential increase of information and information delivery and processing tools can be dizzying to individual searchers. Guiding support, which aids in the research process, reinforces educational efforts to create global and responsible citizens who are ready for an academic or work related career.

**Chapter 2: Literature Review**

First year higher education students struggle to “read reams of difficult text, take comprehensive exams that require analysis not covered in class, and write papers that synthesize ideas from multiple resources” (Fitzgerald, 2004, p. 19). Students enter higher education without the skills to manipulate, evaluate, or proficiently use information skills and thinking habits necessary for academic challenges (Conley, 2007, p.24). While professors are willing to remediate by teaching prerequisite content students did not receive in their secondary education (Conely, 2014, p. 42), we cannot assume this includes how to employ proficient information
literacy skills. Rather, graduating secondary education students are expected to use information to understand evidence, communicate persuasively, and reason and support a position (ACRL, 1989; AASL, 2007; Lenhart, Arafeh, Smith, Macgill, 2008; Newell, Beach, Smith & VanDerHeide, 2011). The nature of student research is changing. Deep close reading, text analysis, and using information as evidence are vital skills for 21st century learning (Purcell et al., 2012, p. 3). Because these skills are not innate, there has been a gradual transformation in the inculcation of research and information inquiry. Purcell et al. (2012) posits that the act of completing research “has shifted from a relatively slow process of intellectual curiosity and discovery to a fast-paced short-term exercise aimed at locating just enough information to complete an assignment” (p. 3). Proficient research skills cannot be assumed to develop within secondary education students despite their continual exposure to information and communication technologies or self-taught search methods. Head and Eisenberg (2009) found that when curious students were given a chance to search for information, there was no difference between course related and casual researching (p. 1). Because of the information inquiry challenges within a K-16 environment, teacher-librarians need to imaginatively and innovatively consider how to constantly improve library programs.

Responding to higher education concerns, 47 states adopted Common Core State Standards, which guides secondary school student learning in the use of evidence to write, “focused arguments on discipline-specific content” (NGA Center, 2010, n.p.), and “write informative/ explanatory texts” (n.p.). The Association of College of Research Libraries (2014) has proposed a shift from information literacy as a “set of standards and learning outcomes” (p. 1) to a framework of six concepts that are interconnected, “with flexible options for implementation” (p. 1). The framework contains not only an explanation of each concept, but
also the *knowledge practices*, which demonstrate the ways students gain information skills and *dispositions* (p. 1), “which describe ways in which the affective, attitudinal or valuing dimension of learning can be addressed” (p. 1). School librarians and educators have the opportunity to apply these standards and frameworks as overarching learning outcomes when designing a “coherent curriculum and assessment system” (McTighe & Wiggins, 2012, p. 6) for guiding the transfer of information from short-term skill acquisition to substantive understanding and permanent knowledge (p. 6).

Developing an argument supported by evidence affirms a student’s ability to engage in information inquiry. Information inquiry is necessary within the research process when students are expected to engage in the information literacy process in order to ethically, efficiently, and effectively locate, evaluate, and use authoritative and relevant evidence to produce a final product that informs others. In addition, the Association of College and Research Libraries (2015) state that student metaliteracy “demands behavioral, affective, cognitive, and metacognitive engagement within the information ecosystem” (p. 2). The term information literacy is more widely known by library science practitioners, with the understanding that inquiry is within the processes. The Association of College and Research Libraries (2015) has redefined information literacy as:

A repertoire of understanding, practice, and dispositions focused on flexible engagement with the information ecosystem, underpinned by critical self-reflection. The repertoire involves finding, evaluating, interpreting, managing, and using information to answer questions and develop new ones; and creating new knowledge through ethical participation in communities of learning scholarship and practice. (p. 2)
While educators, students, and librarians can identify with each aspect of the information literacy definition, their approaches and understanding of proficient information literacy differ. More importantly, the Association of College and Research Libraries definition recognizes the vital relationship each individual develops with information. In addition, as students acquire subject matter knowledge, they are guided to develop information literacy skills that are transferable, sustainable, and can be recontextualized. Because knowledge evolves through the acquisition of information, the transfer of information literacy as a life skill becomes even more vital to a student’s individual growth toward attaining learning outcomes (Dugan & Hernon, 2002; Oakleaf, 2009a; Saunders, 2012).

Purcell et al. (2012) acknowledge that the act of researching is changing, and identify a possible conflict in the information literacy perspectives among librarians, educators, and students. While all three perspectives, librarian, educator, and student, place importance on information literacy, the differences may offer insight as to why students continue to lack these skills in higher education (Gross & Latham, 2012; Meer, Perez-Stable & Sachs, 2012) and if these skills should be part of a K-12 learning experience (Latham & Gross, 2008, p. 13.). The three information literacy perspectives, librarian, educator, and student, are worthy of investigation, as each reveal benefits of and obstacles to the integration of information literacy skills across disciplines and grade levels. Combining the benefits and motivations and removing obstacles from each perspective provides a foundation for developing a school’s library program that utilizes the concepts, processes and skills development of information literacy to transform the support and instruction necessary to prepare and motivate students for the information and knowledge building challenges within both secondary and higher education.
Along with the perspectives, this literature review will explain information literacy and analyze how it can serve as the foundation for a library program. Rather than considering each library objective or event as separate programs, the term program will encompass all that occurs within the secondary education library. A complete library program takes into account the organization’s values, objectives, and cultures, while encouraging educators and students to risk attempting new and challenging activities that require innovative methods of evaluation and reflection (Kaufman, 2007, p. 23). In addition, this literature review will recognize the direct connection between information literacy and information and communications technologies. Information and communications technologies are the devices or applications used to store and transfer both filtered and unfiltered information (Bruce, 2008, p. 16). Students readily use information and communication technology tools to both locate and process information. The connections of devices and applications provide an opportunity for individuals to publish, distribute information, and produce motivational social networks (Ndon, 2010, p. 18). These connections are significant when the skills of information literacy transcend information and communications technology, as learners are able to utilize these tools to move content beyond superficial understanding (p. 211) and work reflectively between formats and devices to develop knowledge (Bruce, 2008, p. 17). While the focus of the literature review is on information literacy within secondary education library programs, the lack of research completed within this population warrants a combination of evidence from both secondary and higher education settings, to identify similar themes for further investigation.

**Conceptualizing Information Literacy**

Before developing a library program grounded in information literacy, conceptualizing these skills requires a view into their inception and understanding the tools by which information
is delivered. Zurkowski (1974) states that information includes the “concepts or ideas, which enter a person’s field of perception, and are evaluated and assimilated, reinforcing or changing the individual’s concept of reality and/or ability to act” (p. 1). This best develops meaning when organized into units of understanding. Zurkowski’s (1974) report to the National Commission on Libraries and Information Science forecasted that an “overabundance of information” (p. 1) would occur “wherever available information exceeds our capacity to evaluate it” (p. 1). Anticipating potential problems with information growth, Zurkowski (1974) sought to offer a platform for managing information by first defining the ability “to find what is known or knowable on any subject” (p. 23) as “information literacy” (p. 6).

Since Zurkowski (1974) defined the need to evaluate information as information literacy, its present importance is evident as secondary education students utilize the various information delivery tools. While traditional print information sources are limited by location, digital information has become globally accessible. Online information is generally accessible using information and communication technology tools, on the open web, or through subscription database products. Purcell et al. (2012) reports that 94% of secondary education students use Google or another search engine to locate information, with 75% using Wikipedia or other online encyclopedias (p. 4). Due to the ease with which information is produced and uploaded to the Internet, much of it is delivered in “unfiltered formats, raising questions about its authenticity, validity and reliability” (ACRL, 2000, p. 4). The complexity by which information is formatted and delivered to users through search engines necessitates that student researchers evaluate each resource for authorship, currency, purpose, bias, and relevance in order to qualify it for use. Online subscription database products, such as EBSCO, JSTOR, and InfoTrac, supply users with information previously filtered for authority. Database resources require the researcher complete
a relevance analysis related to the inquiry. However, the intimate relationship between information literacy and information and communications technology tools is only as strong and beneficial to the growth of knowledge as the user’s willingness to engage in sincere and productive efforts.

**Perspectives of Information Literacy**

Information literacy is not exclusive to the library program. Saunders (2011) offers that information literacy supports the growth of competency areas such as critical thinking and oral and written communication that are necessary beyond academic work (p. 229). Information literacy is important to the growth of a school community. Therefore, it is up to secondary and higher education “institutions, their faculty, and staff to decide on their resources, budgets, and educational practices to ensure that students graduate” with the skills necessary for future challenges (p. 229). Decisions about resources, budgets, and practices to support information literacy can be influenced by group perspectives. Research findings indicate that librarians, educators, and students all have different perspectives in the areas of defining information literacy, determining ownership, curriculum, models, practice, and assessments. Constant assessments of a school community’s information literacy skills and understanding can highlight discrepancies between what a library program would like to offer and what needs remediation (Fitzgerald, 2004, p. 20). In order to develop a library program that places information literacy as a value, the concepts of ownership, curriculum, practice and assessment, and models as above requires examination though the perspective of the librarian, educator, and student.

**Defining information literacy.** Information literacy stakeholders, who include librarians, educators, and students, vary in their definition of information literacy. These varied definitions offer a foundational perspective for developing a more collaborative school library program.
**Librarian perspective.** Librarians refer to information literacy not simply as a set of linear steps but as oscillatory information processes that improve when consistently practiced (ACRL, 2015; 2001; Gross & Latham, 2009a; Marcum, 2002). Marcum (2002) offers that information literacy should be viewed through the lens of cognitive psychology where the processes are “grounded in content and the transfer of information” (p. 10). The Association of College and Research Libraries (2015) includes a metacognition perspective, where “critical self-reflection” (p. 2) supports an individual in becoming “more self-directed” (p. 2). Curriculum content provides students with a meaningful opportunity to practice the processes of information literacy along with specific information from the course work. Because the expectation is that the information learned from content is transferred to other disciplines, librarians make the leap that information literacy skills should also transfer and recontextualize between situations and between disciplines. Thus, the individual who can consistently transfer content information and transfer and recontextualize information literacy skills and knowledge throughout courses, grade levels, information types, and information and communication technology tools are preparing students to be an information literate citizens.

The Association of College and Research Libraries (2015) include in the proposed information literacy definition an appreciation for the information literacy ecosystem (p. 2). The ecosystem surrounds the conversations and questioning of scholarship, authorship, and perspective; formats to create, produce and disseminate information; a willingness to engage in exploratory opportunities to pursue information, strategize alternative methods, and develop new knowledge; and recognize that information has value that respects what has been created and will be created using the work of others (Association of College and Research Libraries, 2015).
Educator perspective. Educators have a slightly different view of information literacy. Educators define information literacy through the lens of their discipline content. Educators focus on “the very process of preparing a piece of written course work” (McGuinness, 2006, p. 577), which makes use of information inquiry without process methodology (p. 577). The educator’s primary goal is the production of a quality product that indicates learning outcomes such as the ability to critically approach scholarly literature or the ability to analyze information and draw conclusions (McGuinness, 2006, p. 577). Saunders (2011) states, “attention to the topic of information literacy outside of the library and information science is relatively recent” (p. 15). While many educators individually understand concepts within information literacy, many of the processes seem foreign. Therefore, educators want students to locate articles with authority and currency, but are unsure how to support students in the processes necessary to achieve these goals.

Student perspective. The student ability to define information literacy on their terms was not found in any of the research examined. Rather, research data offered insight on student self-evaluated or educator evaluation of student information literacy skills proficiency (Asselin, 2005; Gross & Latham, 2009a, 2012; Oakleaf, 2009; Probert, 2009). Head and Eisenberg (2009) examined the “existence and frequency of the different research needs that students have” (p. 11), which generated data indicating students were “curious about and engaged in finding information” through pre-search and complex content searches. Willingness sets a foundation for students to define and understand the value of information literacy skills as a concept through experience. In addition, not having data on how students define information literacy creates an opportunity for examining whether students understand learning outcomes associated with these skills can improve teaching practices and learning processes.
The three perspectives of defining information literacy offer insight into the responsibility and value each has for the landscape surrounding information and information inquiry behaviors. Librarians, having the most invested, reach beyond a set of skills to define information literacy through doing and thinking processes, values, and responsibilities within a community of learners that use information. Educators and students each define information literacy through individual experiences, identities, and cultures, often relying on past understanding. Most importantly, students are ripe with opportunity for understanding information literacy.

**Information literacy ownership.** Badke (2005) states, “scholars argue that information literacy at a high level needs to be the right of every student” (p. 74) no matter the acceptance or resistance by educators (p. 74). Badke recognizes value on each individual having the opportunity to own information literacy skills and understanding of the processes involved. Yet, who is responsible for teaching information literacy has been a source of territorial debate. Asselin (2005) found that educators and teacher-librarians each assert responsibility for separately teaching information literacy to students. Asselin (2005) researched educators and librarians working collaboratively on a secondary education research methods unit. Educators indicated extreme confidence with information literacy and perceived themselves as able to teach the skills to students (Asselin, 2005, p. 23). However, these same educators were not able to define the information literacy skills they intended to teach, indicating they had limited time to collaborate with the librarian (p. 23). Saunders (2011) determined that educators and librarians share responsibility of teaching information literacy skills (p. 234). Educators own content curriculum and “without their support information literacy will be treated as an add-on or after thought” (p. 234).
Shared responsibility is not always a collaboration of similar practices. Rather, it is a mutual recognition that information literacy has value within the school community when taught and reinforced by all those instructing students. Recognizing the shared responsibility requires leadership, not just to support a library program’s use of information literacy but also to sustain the program as a whole. Fullan (2005) defines sustainability as “the capacity of a system to engage in the complexities of the continuous improvement consistent with deep values of human purpose” (as cited in Fullan, 2006, p. ix). Sustaining a value within a program “lies in the fostering and proliferation of a fundamentally new kind of leadership in action” (Fullan, 2006, p. 114). Leadership must not simply consider the long-term value of information literacy within a library program, but information literacy itself as the value that is worthy of being sustained.

**Shared ownership.** The practicality of realizing the value of information literacy requires librarians and educators to take a step back from their individual leadership traits and mindset of ownership. Fullan’s (2011) recognition that making a mistake is not a personal flaw but a learning opportunity (n.p.) is interpreted as recognizing a need for change, which opens possibility. Rather than continued single ownership, where even collaboration must take on the individual mission and vision of librarians and educators, the creation of a shared mission and vision may serve the development of a library program that will meet the needs of student learners. Librarians already struggle with developing a separate curriculum and instruction removed from content instruction; understanding it gives the impression that information literacy is a library only activity (Saunders, 2011, p.234). Current practices in information literacy collaboration have the potential of diluting information literacy when the educator’s content becomes the primary focus. As a result, a new kind of leadership requires librarians and educators to not just focus on the problem, but to consider system challenges within the culture
generating more leaders (Fullan, 2006, p. 121) who place information literacy as a goal and are willing to collaborate with mutual, respectful, and shared ownership that has the potential for benefiting students.

Although researchers have examined who owns the responsibility of teaching information literacy, evidence also shows that administrative leadership, of both secondary and higher education institutions, are unwilling to support library programming or a program. Just because a facility has a library does not mean information literacy instruction occurs. McGuinness (2006) offers that administratively, higher education does not always provide for information literacy instruction, assuming students enter already possessing the skills and utilize course work to increase ability (p. 580). This same philosophy can be turned as students may also “reinforce inappropriate or incorrect execution of” (p. 580) information literacy skills and processes due to lack of instruction. Secondary education schools fair even less as not all of the 17,800 reporting U.S. secondary education school libraries had at least one full-time certified school librarian employed (NCES, 2012b, Table. 478 on n.p.). When examined by student population, one full-time certified librarian was to support up to 1500 students in a single school (NCES, 2012a, Table. 479 on n.p.). Elementary schools, where the foundations of early literacy skills of reading and writing skills begin, are supported by less than a half-time certified librarian (NCES, 2012b, Table. 478 on n.p.). The trajectory of elementary to high school statistics provides no doubt that a majority of United States students will enter higher education never being exposed to how to appreciate and ethically locate, evaluate, and use authoritative quality information. When budget constraints and/or leadership perception of a library program’s importance limit support for developing instruction, students have less potential to develop proficient information literacy skills without the leadership of a certified librarian.
**Student ownership perspective.** Since students are the beneficiaries of an information literacy focused library program, their ownership should also be considered. Rather than claiming ownership of information literacy skills, students shift the paradigm through their reliance on each other as search experts. Purcell, et al. (2012) found that 42% of high school students look to each other as sources to learn search skills. The selection of a peer ranks fourth, behind Google, Wikipedia, and YouTube (p. 34), which makes ownership not claimed, but freely given. Head and Eisenberg (2009) surveyed over 2,318 higher education students and found that librarians were tremendously under utilized… as “eight out of 10 of the respondents reported rarely, if ever, turning to librarians for help with course related research assignments” (p. 3). Purcell, et al. (2012) support Head and Eisenberg (2009), as only 16% of students surveyed utilized a school or public librarian for research assistance (Purcell, et al, 2012, p. 34). These finding directly relate to how secondary education students experience information literacy instruction. While students are generally encouraged in peer collaboration and mutual learning, unless librarians and educators agree upon a community tailored method for information literacy instruction, the development of proficient skills and understanding of processes may not occur. Without practitioner expertise to guide the research process, “students may accept the veracity of online information too easily,” (p. 26) leaving open the proliferation of incorrect information being used as evidence.

**Ownership barriers.** The concept of ownership cannot be discussed without the consideration of barriers. While educators want students to have information literacy skills ready to go in their classes, many are unwilling to give up class time to allow for the scaffolding and consistent practice students need to hone these skills. Although focused on higher education, McGuinness (2006) found that faculty barriers to information literacy development in students
potentially could transcend all educational levels. Findings provide evidence that faculty considered the library a reserve of information students can pluck from, as they absorb information literacy skills through a set of “existing learning situations” provided within a course (p. 576). Confirming previous research Meer, Perez-Stable and Sachs’ (2012) determined that educator reasoning for not taking advantage of library offered information literacy services was because (a) they were unaware, (b) did not want to take away class time dedicated to content, and (c) had deemed the instruction not relevant to the content (p. 113).

Shifting the concept of ownership of information instruction to the assumed ownership of an individual’s proficient information literacy skills could serve as a barrier to offering an equal learning opportunity. McGuinness (2006) indicated faculty perceived students who develop proficient information literacy skills as having “individual motivation and innate ability, rather than on the quality and format of the available instructional opportunities” (p. 577). Thus:

Rather than suggesting that it should be a desired learning outcome of undergraduate programs, a number of participants observed that students can become information literate only if they proactively and independently choose to pursue the opportunities that are available to them during the course of their education. (p. 577)

Considering McGuinness’ (2006) thinking within secondary education, students in tiered courses may be directly affected. Those who are in advanced placement (AP) or high-level courses may have enrolled due to their self-starting nature and willingness to self-engage in learning opportunities. These students may have the opportunity for information literacy instruction due to their own pursuit. However, using McGuinness’ (2006) findings, if faculty self-judges that a certain population is less willing to self-engage based on course enrollment and does not prove information behavior instructional guidance, these students may never develop information
literacy processes and skills. Because AP and higher course level students may have innate information literacy ability, the course instructors justify providing instruction giving these students an opportunity to gain additional information literacy knowledge that all individuals should have.

When faculty uses student ability as a barrier to offering information literacy support instruction, no remediation of inappropriate skills occurs. No remediation perpetuates the transfer of poor information literacy skills into higher education and career choices. This judgment goes against the thinking of differentiating to meet the needs of the learner, because those with low information literacy proficiency may not even recognize the deficiency (Latham & Gross, 2008, p. 13). In addition, when potentially important learning and knowledge is knowingly withheld from a certain population, the school has produced an unjust situation.

*Distributing ownership.* With students redefining information literacy ownership, librarians and educators placing culturally established professional barriers and limiting collaboration opportunities, and educators using academic levels or motivation to determine information literacy learning potential, the opportunity gap for learning and developing knowledge will continue to widen. Darling-Hammond (2010) defines opportunity gap as “the accumulated differences in access to key educational resource-expert teachers, personalized attention, high-quality curriculum opportunities, good educational materials, and plentiful information resources-that support learning at home and at school” (p. 28). Thus, ownership must not be territorial or it will compound the institutionalized inequalities that already exist in the instruction of information literacy. Perhaps it is time for secondary and higher education leaders, in both administration and instruction, to take a hard look at the distributive leadership qualities students’ display when mimicking each others’ willingness to share and engage over
information challenges. Distributive leadership allows for the practice of leadership to be “defined in the interactions of leaders, followers and their situation” (Spillane, 2006, n.p.). Students are leaders and owners of their own education, including the acquisition of information literacy processes and skills. Thus, ownership may mean that educators and librarians offer the information literacy process pedagogy and expertise, while students add the distribution method.

**Information literacy curriculum, practice, and assessment.** Once ownership of information literacy skills is determined, *how* does an institution’s library program plan instruction and assessment? In pursuit of developing information literate students, both secondary and higher education librarians ideal library program would offer collaboration opportunities to educators that consistently embed integrated information literacy skills into curriculum, design assessments that contain information literacy standard based outcomes, and leadership opportunities to consistently evaluate that the values of information literacy are being maintained (Saunders, 2011). School librarians and educators find support for developing information literacy curriculum within the national Common Core State Standards, individual state standards, and library associations’ standards. Common Core State Standards contain different grade level learning outcomes for the scaffolding skills necessary for reading and processing informational text (NGA Center, 2014, n.p.). Massachusetts offers the non-mandated Massachusetts Technology Literacy Standards and Expectations (2008) to school districts as a supportive document for developing information and communications technology skills. The American Association of School Librarians (2007) offers K-12 educators four information literacy guiding principals (1) “inquire, think critically, and gain knowledge;” (p. 3) (2) “draw conclusions, make informed decisions, apply knowledge to new situations, and create new
knowledge;” (p. 3) (3) “share knowledge and participate ethically and productively as members of our democratic society;” (p. 3) and (4) “pursue personal and aesthetic growth” (p. 3).

The Association of College Research Libraries (2014; 2000) has developed two very different information literacy definitions and support publications to be used within secondary and higher education. Past standards supported a set of learning targets to create a common understanding through all disciplines, learning environments, and education levels (ACRL, 2000, p. 2). The recently adopted framework is part of an educational reform that recognizes the previous standards within a set of six concepts that place importance on students having “a greater role and responsibility in creating new knowledge, in understanding the contours and the changing dynamic of the world of information, and in using information, data, and scholarship ethically” (ACRL, 2015, p. 2). All of these state and association resources have similar intent to include information and communications technology tools and practices in the pursuit to locate, process, organize, and produce information ethically, while appreciating the knowledge used and shared. When combined in a curriculum, either stand-alone or in combination with content courses, the standards and framework can guide curriculum planning, practice design and assessment in the continuum of information literacy learning in K-16 education.

**Embedding information literacy.** Yet, with all the standards, framework, association support, and collaboration of instruction, evidence still indicates students are not gaining the skills necessary to become information literate. The question remains: how are established standards and the framework embedded into the practice and assessment of information literacy instruction? Oakleaf (2009a) research investigated the Information Literacy Instructional Cycle, offering insight into the possibility of how a model utilizes assessment to increase librarian instructional ability and improve student information literacy skills (p. 539). Oakleaf (2009a)
grounds the model in the assessment for learning works of Shepard (1989), Stiggins (1991) and Wiggins (1989) (as cited in Oakleaf, 2009a, p. 540). Assessment for learning theorists “believe that assessment and teaching are inseparable, and that students can learn and be assessed simultaneously” (Oakleaf, 2009a, p. 540). Popham (2008) supports this theory using learning progressions, where “step-by-step building blocks students are presumed to need in order to successfully attain a more distant, designated instructional outcome” (p. 24). Thus, the Information Literacy Instruction Cycles offer a sequencing of expected sub-skill outcomes within one overall learning outcome. The overall learning outcome has the potential to be a formalized learning standard. Wiggins and McTighe (2006) offer that designing curriculum, practice, and assessment backwards, begins with sharing learning outcomes, as the relevant goal the instruction will address (p. 22). The concept is performance improves when a student knows what he or she is expected to learn (Wiggins & McTighe, 2006, p.15).

As students progress through a series of designed tasks, assessments will provide evidence of mastery (Oakleaf, 2009a; Oakleaf, 2009b; Popham, 2008; Wiggins & McTighe, 2006). Assessments are evaluated for quality evidence as determined by a well developed rubric that helps a student understand the curriculum and what is suppose to be learned (Oakleaf, 2009b; Popham, 2008). The results of an assessment has the potential to motivate the educator and librarian to adjust instruction, individually differentiate instruction, and/or determine mastery and future progress.

The use of assessments and rubrics within the curriculum design and educator practices assists in determining mastery or a need to reinforce, reteach, and/or adjust instruction. As information literacy practices are developed, the student’s ever changing environment has to be considered. Students are found to have little “patience and want speedy answers, and full
gratification now” (Zimmerman, 2012, p. 181), often “disregarding the instructor of the library and its vast array of data sources” (p. 181) for the open web. In addition, librarians and educators have to be cognizant that students can disengage when traditional methods with print, paper, and pencil are used as the primary method for building knowledge (Zimmerman, 2012, p. 179). Julien and Barker (2009) examined a curriculum in practice, as a diverse population of 1300 secondary education students from different schools were provided with extensive information literacy programming within a biology course. As part of their assessments, students were given information-based tasks to perform to determine information search skills (p. 14). Although not targeted in the research, the link between actual classroom practices, teacher understanding, and attitudes needs to be further examined as a possible influence on the preparations of lessons and assessments (Julien & Barker, 2009, p. 15).

Librarians have a responsibility to determine how their interactions with students contribute to the transfer of information, learning, and knowledge development (Oakleaf, 2009a, p. 234). Interactions are not always practiced within the traditional classroom setting. Kingsley, et al. (2011) offer that practice may mean an “intervention led by an ILS [information literacy skills] librarian specialist may be sufficient to effectively help students” (p. 6) develop skills. Still, because librarians need others to ensure the overlapping of information literacy practice and assessment, librarians solicit educator assistance. In addition, Probert (2009) indicates that secondary educator understanding of information literacy shows that disciplinary differences exist. English and social studies educators demonstrated more advanced information literacy skills than those teaching technical courses (p. 28). Although those who perceived confidence with information literacy noted the use of webbing software (Probert, 2009, p. 29), and skimming, scanning and note taking techniques (p. 30), recognized was the difference between
how organizers utilized an information literacy model. Students would have been supported in
information literacy behaviors while using traditional reading and writing processing models; the
co-use of an information literacy model along with a reading model may have supported
information behavior. To have an inclusive information literacy program, Gross and Latham
(2012) posit, that “in the absence of consistent formal information literacy skills instruction in K-
12 it might be unrealistic to expect students to know that they can and should seek help from
more formal sources” (p. 581), including the school’s librarian.

**Information Literacy Models**

Simply providing access to information delivery tools and offering usage is not enough to
support student knowledge growth. Seeking a method to reach both students and educators and
reduce information search anxiety, librarians began to develop information literacy models
(Kuhlthau, 1990, p. 72). Models set users at ease because they allow one to view a process
before the experience. In addition, models allow for reflection upon a process taken, in order to
determine future adjustments and improvements. Information literacy models provide educators
with a universal view into how information skills can be approached.

The intention of an information literacy model is to guide students within a research
process promoting specific behavior that supports the ethical, effective, and efficient use of
information. While librarians promote the use of information literacy models, educators hesitate
to use them because of the underlying assumption that it attempts “to depict and explain a
sequence of behavior by referring to relevant variables, rather than merely indicates a sequence
of events” (Case, 2012, p.137). Educators may find discomfort with the unknown content of
information literacy or lack of available time to focus on something other than his or her subject.
When a model provides a linear process, it removes an educator from dedicating guidance
necessary for deep information processing. Deep information processing is a part of all information literacy models.

Although the skills of information literacy have been recognized as having importance in a student’s knowledge growth, published research rarely recognizes a specific model used within a secondary school environment. Grafstein (2002) determined information literacy models possess a collective essence of components discussed within library science research. Information literacy components support (1) designing a focused research question or thesis, (2) formulating hypotheses, (3) locating, evaluating resources, (4) determining resource relevance to the research, (5) synthesizing the resources into a “logical and clearly-written, coherent argument, forming conclusions” and identifying further research (p. 53). Model developers adjust and combine these components with a theoretical framework, in order to determine the best method for producing proficient information literacy skills in students.

**Secondary education models.** Kuhlthau, Stripling and Pitts, Eisenberg and Berkowiz, Joyce and Tallman, and Rankin have all contributed to the development of information literacy models intended for, but not limited to, secondary education. Kuhlthau’s (1988) Information Search Process uses Kelly’s personal construct theory to take into consideration a student’s feeling and cognition during the search process. Significant to Kuhlthau’s research is how the stages of exploration and formulation are critical because students are encouraged to go beyond fact finding to engage in the processes of information literacy (Kuhlthau, 1999 as cited in Stripling, 1998, p. 16).

Stripling and Pitts’ Recalling, Explaining, Analyzing, Challenging, and Transforming (REACT) taxonomy is a model focused on critical thinking methods within a ten-step research process (Crow & Franklin, 2011, p. 65). REACT allows for general pre-searching and narrowing
of information until a topic is selected. Similar to the Information Search Process, REACT encourages students to take the time to process the information search, in order to transform and synthesize the information gathered into knowledge (p. 65). Eisenberg and Berkowiz’s Big 6 and Big 3 models differentiate within K-12 to meet the needs of student learning abilities. Grounded in Blooms Taxonomy the Big 6 and Big 3 offer a “straightforward summary of activities related to information seeking and project completion” (Thomas, Crow & Franklin, 2011, p. 64). Joyce and Tallman’s I-Search model is popular among educators whose discipline requires an abundance of writing. I-Search differs from other models because it asks for student investment in the process through the selection of a unique topic. As a student goes through the I-Search steps, there is a series of tasks that expect one to learn and utilize webbing, sharing, citations, reading, drafting and editing within a writing process (Callison, 2003; Thomas, Crow & Franklin, 2011). Educators accept these activities and the metacognition required, because they are within the realm of the familiar writing process. While not containing the general components of an information literacy model, Rankin’s (1992) Pre-Search two-step process prepares a student for researching by directing students to connect with prior knowledge and develop research questions that will guide an information search (Rankin, 1992, p. 168).

Although the pre-searching within Stripling and Pitts’ REACT and Rankin’s Pre-Search models offers initial research behavior support, there is a paucity of research within the information science community on the preparation for information inquiry. Writing teachers commonly use graphic organizers, such as the KWL (Know, What, Learn) to generate what students already know and want to know. Gale’s Infotrac introduced Topic Finder, an option within the databases that assists with pre-searching by generating clustered terms around the user’s initial inquiry. However, none of the resources support the students’ preparation for the
manipulation of keywords or the development of research questions to come to a point of discovery to focus an argument.

**Theory based models.** As previously mentioned, more recent models, researched in higher education, have been developed with a theoretical framework in mind. Oakleaf’s (2009b) Information Literacy Instruction Cycle is grounded in Shepard’s (1989), Stiggins’ (1991) and Wiggins’ (1989) assessment for learning theory. Bruce’s (2008) Six Frames for Informed Learning makes use of variation theory (Marton & Tsui, 2004; Pang & Marton, 2003 as cited in Bruce, Edwards, & Lupton, 2006, p. 6). Variation theory within information literacy proposes that learning occurs when information is experienced differently (Bruce, Edwards, & Lupton, 2006, p. 6). Thus searching for information is learned through the variation of using a subscription database and the open web. Organization of information is learned when a student processes using a graphic organizer or traditional 3x5 note cards. Bruce’s (2008) theory of informed learning posits that students learn from not only the change in environments but also change in experiences. Bruce (2008) and Oakleaf (2009a; 2009b), along with the Grafstein (2002), contend that the tenets of traditional information literacy models provides a foundation for a library program that holds information literacy as a value in the processes of pre-searching, research preparation, and to ethically, effectively, and efficiently locate, evaluate, use and produce information.

**Information and communications technology influence.** Before considering the development of a conceptually different school library program, the influence of information and communications technology in conjunction with models must be considered. Purcell et al. (2012) and Kingsley et al. (2011) conclude there is an undeniable connection between information and communications technologies as the tools for researching and the actual information generated.
As a result, the importance of developing proficient information literacy skills and understanding the processes that are within the sequencing of each skill grows exponentially along with the growth of information and communications technology and information. Purcell et al. (2012) report 77% of secondary education writing teachers state information and communication technologies have a positive impact on student research habits (p. 3). Information and communications technology tools are engaging, as they exist within a students’ realm of experiences. In addition, many software programs have graphic organizer tools, such as numbers and bullets or Microsoft’s Smart Art feature. However, 64% of these teachers also report students are distracted by the same digital technology (p. 2). Without guidance and instruction, students will not learn how to manage and organize the digital information and tools offered in order to engage in information inquiry behavior.

While students experience the research process within an environment rich with information, the tools used to access information distract from the critical thinking necessary for proficient inquiry. This distraction restricts the amount of time students dedicate to inquiry. Newell, Beach, Smith, and VanDerHeide (2011) report that in argumentative writing, due to digital media, students assume “that in formulating claims, they [students] simply need to summarize their claims to achieve the goal of convincing audiences without providing supporting evidence, considering counterarguments, or changing their own or others’ stances on an issue” (p. 274). Students are not conducting the deep information inquiry within the research process necessary to “identify the underlying argument, and its claims, warrants and evidence” (p. 274).

Disengaged and unmotivated students due to educator disconnect with information and communication technology tools leave all at a disadvantage. Fullan (2013) states “the engaged
student is attentive, committed, persistent, and finds meaning and value” in learning (p. 18). Using information and communication technology tools to design new pedagogy that partners with students will only advance quality (p. 31). Fullan (2013) views information and communications technologies as the great accelerator of new innovative methods of teaching within education (p. 31).

**Stakeholders Perspective and Support**

Only through leadership comprised of librarians, educators, administrators, and students can information literacy be recognized for its place of importance in the development of knowledge growth. The combination of perspectives displays a push and pull situation, where stakeholders claim ownership but are unable, due to a host of barriers, to adequately offer information literacy instruction opportunities. The introduction of standards, a framework, graphic organizers, models, and information and communication technology tools have the potential to enhance the research process. If these tools are used inconsistently or without educator and librarian guidance, they offer the student very little benefit. Yet, in the examination of stakeholder perspectives and instructional support, each offers a glimpse into the value of information and information literacy. Both the frameworks of the Association of College and Research Libraries (2015) and the American Association of School Librarians (2007) standards note ethical and aesthetic value. Badke (2005) recognized value within the individual’s right to gain knowledge. Fullan (2006) and Saunders (2011) offer that value must be intentionally selected and supported by stakeholders within an organization if it is to become of importance to student learning. If a school library program considers value as a fulcrum that balances stakeholders, curriculum, practice, assessments, standards, framework, models, and support, it has the potential to guide an entire community.
Information Literacy and Value

Despite association standards, a framework, and educator and librarian support, the genuine problem of students entering higher education not having mastered information literacy behaviors necessary for the rigors of higher education remains. Information science practitioners research how best to guide and build student information literacy skills in order to generate generalizable themes that work. Theories associated with information literacy research offer different perspectives by which to view the problem and possible solutions. Applying Dewey’s (2009) statement that “differences in theory…grows out of conflicting elements in a genuine problem” (Dewey, 2009, p. 104), to information literacy research allows for the concept of value to be introduced. The possibility of generating themes for a “solution comes only by getting away from the meaning of terms that is already fixed upon and coming to see the conditions from another point of view, and hence in a fresh light” (p. 104). Shifting the thinking of information literacy from a set of processes and skills taught by educators and gained by students to a concept of value offers a new perspective, which may lead to possibilities of better preparing student information behaviors. Information literacy through the perspective of value raises the consciousness of understanding and reflection once an individual is engaged in information behaviors. Progressive education realizes “genuine thinking and valuing taking place when the child begins to step back and reflect on the consequences of action” (Gutek, 2009, p. 340). Thus, each experience with information reflects value, no matter if a model, set of practices, or series of processes are utilized.

Simply stating information literacy should be guided through the perspective of value is not enough to generate complex understanding for how this concept trickles down into an educator’s lesson plan. A foundation for understanding value begins with axiology, the
subdivision of philosophy that considers the study of value in an attempt to “prescribe what is good and right conduct” (Gutek, 2009, p. 5). Axiology divides into the subdivisions of ethics, “the philosophical study of moral value and conduct” (p. 5) and aesthetics, the “study of values in the realm of beauty and art” (p. 5). Both ethical and aesthetic values develop in humans by the shaping and molding of behaviors through the experiences their society and culture have deemed important. These experiences develop a set of rules by which a human understands ethical and aesthetic value. However, Dewey (1916) cautions that these rules “are so important as standards to judging the worth of new experiences that parents and instructors are always tending to teach them directly to the young” (p. 274), potentially leading to symbolic teaching rather than what the individual has “specifically appreciated to be deeply significant in concrete situations” (p. 274). For information literacy to include value, experience with information would have to encompass both an understanding for established ethical standards as well as the individual’s deep appreciation for any created work.

**Ethical value.** The education community has a significant role in shaping a student’s ethical and aesthetic values. Value within education is constructed throughout experiences in a classroom, school, and district’s direct rituals and routines or the indirect experimentation, observations, and discovery opportunities (Dewey, 1916, p. 271). Within education, ethical values shape moral belief and behavior expected with learning, especially in the school environment. Hence, a student claims a piece of original work through the routine of using a formatted heading; the raising of a hand indicates a question, order, and fairness; and adopted state curriculum deems certain content as having uniform ethical value within society. Core Curriculum State Standards provide evidence of information literacy as an ethical value. Students are required to “cite strong and thorough textual evidence to support analysis of what
the text says explicitly” (NGA Center, 2010, p. CCSS.ELA-LITERACY.RI.9-10.1) and to “delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning” (p. CCSS.ELA-LITERACY.RI.9-10.8). Ethical values exist within information literacy standards, frameworks, models, processes, and practices, as each establish expected behaviors to insure attribution is given to a creator; that information applied and transferred to others is authoritative, current, objective, and true; and that an individual’s creation has not been plagiarized or stolen. Therefore, the framework for information literacy containing ethical value has been established but lacks educator and student conviction and appreciation to warrant diligent use.

**Aesthetic value.** Aesthetic value is not as recognized when molding behavior because it requires the individual to develop appreciation through the “engagement of imagination” (Dewey, 1916, p. 276). Dewey (1916) states that “the imagination is the medium of appreciation in every field” (p. 276), moving the mechanical process into activities where individuals determine value through their own experiences (p. 276). However, Gutek (2009) states, “aesthetic dimension of life frequently has been neglected in U.S. education” (p. 5). Curriculum standards require students to determine, analyze, integrate, delineate and evaluate, leaving it up to the educator to include experiences to create, design, invent, and originate. Therefore, education often limits aesthetic value to the appreciation of the beauty within subjects such as literature, art, music, and drama. While, “aesthetic values have an obvious place in art, drama, music, and dancing classes: they are also relevant to the cultivation of public taste and style of life” (Gutek, 2009, p. 5). Dewey (1916) states that aesthetic value is not confined to specific education content but “its scope is as comprehensive as the work of education itself” (p. 276). Aesthetic value within
information literacy comes when a student appreciates the designing of an argument, develops unique search strategies for locating evidence, manipulates search tools and recognizes there is beauty in another’s creation as well as in his or her created work. Thus, each piece of work used within the ethical models, practices, and processes of information literacy are appreciated for aesthetic value and what its creator brings to a student’s knowledge development.

**Produce change by combining values.** The subdivisions of value, ethics and aesthetics, complement each other when cohesively focused towards a common purpose. Consequently, aesthetic value can offer reasoning and appreciation for why the ethical practices and processes of information literacy are necessary. However, educators cannot simply direct students to accept value within information literacy without providing guidance. Before educators can offer guidance, they have to change the traditional perception of information literacy to support the concept of value. A “successful system reform usually means that a small number (up to half dozen) of powerful factors are interacting to produce substantial impact,” (Fullan, 2009, p. 108), upon an organization. While Fullan (2009) references educational reform as a whole, the generalizable theme is the understanding that educational change requires the perspective of many stakeholders working toward a common purpose.

Whether realized or not, the information literacy factors of leadership, educators, partnerships, professional development, greater school community and especially students all have a stake in the proliferation of information behavior. Each of these factors has a role in how current information literacy is valued and practiced. More significant is the role these factors will have within the change of value as a significant element of information literacy. Currently information literacy education is disjointed and inconsistent as it relies on educators to select when the teaching of information behavior has a place within class content. For change to occur,
information literacy education must centralize focus through a mission/theory that promotes the interaction between the factors (Fullan, 2009, p. 108), produces imaginative and authentic experimentation experiences for students and educators (Dewey, 1916; Wiggins, 1993), and generates informative evidence (Hargreaves & Fullan, 2011, p. 171) to continually evaluate and build a sustainable library program. The theory or mission that combines ethical and aesthetic information literacy value is simply a jumpstart, while action and practice make change happen (Fullan, 2011). Bridging the gaps of understanding, and working to “reach for partnership, and replace polarization with integration—in ways that make every effort to respect each other’s position without capitulating to them” (Hargreaves & Fullan, 2011, p. 154) open up avenues for conversation towards development. Individually, educators and administrators have to look inward (Hargreaves & Fullan, 2011, p. 154) to determine their current information literacy practices. Administrative leadership must reflect upon the professionalism, culture, and leadership of information literacy within the school, in order to reach beyond traditional practice to lead change (Hargreaves & Fullan, 2011, p. 163). It is only through working together, recognizing the need, and possessing a willingness to try something different, that students will have an opportunity to gain sustainable, transferable and recontextualizable information literacy processes and skills.

While providing educators with a theory or mission and opening up avenues to produce integrations that recognize ethical and aesthetic information literacy value, students still require tangible reasoning for why this path of engagement is personally beneficial. Educators are instrumental in developing student values through not only classroom rituals and routines, but by also appreciating knowledge that is transferred towards adulthood. There is a difference between testing a student for ethical use of information and developing a student who embodies ethical
and aesthetic value for and with information (Gutek, 2009, p. 340). In an effort to develop the
whole child, Wiggins & McTighe (2005) encourage the use of essential questions “made central
to the unit to engender probing inquiry and eventual transfer” (p. 106) of knowledge. Thus, the
essential question is “not just about ‘the answer’ but about learning how to learn” (Wiggins &
McTighe, 2005, p. 108) and building key understanding that can be re-contextualized. Consider
the essential question, how do you ethically and appreciatively use information? The essential
question is phrased for an individual’s life and lifetime of experiences and reflection. The
phrasing opens up the opportunity for imaginative experimentation (Dewey, 1916) with
information opportunities, where thoughtful judgments build understanding throughout a lesson
and towards a lifetime. To engage students, educators “design criteria that can be used to frame
challenges that are psychometrically useful but also more authentic” (Wiggins, 1993, p. 206)
allowing students to respond to the essential question individually while collectively
understanding the concepts. Thus, within the school environment, the transfer of value is
reflected in how a student appreciates then ethically behaves when engaged in information
behaviors. Information value is not driven by a set of rules but by the student’s deep
understanding and appreciation for what one is about to create, using what was already created,
and what will be passed onto others.

Social justice consideration. Information literacy as a value has the opportunity to tackle
the educational injustices that occur when certain groups of students are selected to learn or not
learn information literacy behaviors based upon an educator’s pre-determined criteria. Dewey
(1916) makes the argument that “experience knows no division between human concern and a
purely mechanical physical world” (p. 333). Therefore, should not all students have the
opportunity to engage information literacy throughout their educational experiences? Previous
research has provided insight into why educators developed personal reasons not to offer information literacy within content areas. Dewey (2009) offers that it is too easy to see conditions both in their separateness and with an adult perspective (p. 104). In doing this, adult educators overlay their own information behavior importance onto a student’s experiences, never allowing the student to deeply understand why the use of information requires ethical and aesthetic value focused behaviors. When information behavior is viewed through separateness, each stakeholder separately makes choices at the expense of others rather than looking at the reality of each other (p. 104). The social injustice falls within the educator’s own decision and reasoning for discriminating why one group over another receives valuable information literacy practice and knowledge and the allowing of misbehavior with information use to perpetuate. Not offering information literacy ethical and aesthetic value experiences as one community leaves holes in knowledge students will reflect upon, use, and transfer between classrooms and into higher education. The loss of continuity indirectly provides permission for an individual student to apply a self-defined information literacy value only when he or she deems it important. Thus, the knowledge from the educator who applies information literacy as a value within a learning unit never translates into reality of practice if not required to do so by other educators. This disjointed practice leaves the potential information literacy knowledge in limbo, as “second handed” (Dewey, 1916, p. 275), generating a “split between a person’s professed standards and his actual one” (p. 275). All students should have information literacy value that represent who they are through their relationship with information.

Without information literacy value, the current inconsistent method for teaching, guiding, and practicing information literacy will remain socially unjust. Librarians will be left to emphasize the importance of information literacy; educators will still teach information process
based upon their own pedagogy, discipline demands, and discrimination, and students will continue to enter higher education without sufficient information literacy preparation. Thus, the educators who are willing to equally offer information literacy through the differentiation of instruction, rather than eliminating it due to preconceived notions of student ability, add value to their community. Leadership should recognize “before us the need of overcoming this separation in education if society is to be truly democratic” (Dewey, 1916, p. 338). Gutek (2009) posits, “values are not the product of imposition from those in power but are the results of the interface and sharing of people, whose voices have an equal right to be heard” (p. 412). Teachers have a responsibility to guide student values. By guiding students to develop the skills needed to make ethical decisions and appreciate the creative person who developed the information and recognize the beauty of the information itself, the school community exhibits a shared value.

**Developing a Library Program**

Libraries traditionally offer individual programs centered on a specific concern or interest generated through patron feedback. Library programs are “essentially an unconnected and non-sequential array of courses in-class sessions” (Saunders, 2011, p. 233). Educators select from a menu offering of librarian created programs that can be taught separately or embedded into class instruction (Loesch, 2010; Saunders, 2011). A disconnect occurs in student learning when library programs do not allow for students to link the processes and understanding of information literacy skills learned within each program. Rather, a new type of library program, which places information literacy skills development as a value to be used as a guiding principal for all that the library offers to students, insures that educators, librarians, and students are consistently considering the proper processes involved with information behavior, while appreciating the information used and new knowledge created. As a new culture for developing information
literate students evolves, leadership must be both transformative and transactional.

Transformative leadership allows for a complete change to the school library’s traditional methods for conducting information literacy instruction (Burke, 2011, p. 216) along with a re-focus on the mission. Transactional leadership allows for the day-to-day management of the library to continue, changing gradually when necessary (p. 216). Within each of these leadership distinctions lies a need for distributive leadership composed of librarians, educators, and students that will bring to the program perspectives, expertise, skills, and willingness to risk, in the pursuit of potentially increasing student learning, achievement and reduction of the opportunity gap. Not only will students be assessed within the process of learning information literacy but they will also know what the intended learning outcome is and how it will influence their lives. Models, rubrics, organizers, and assessments will be used as consistent guides and reflective mechanisms.

Evaluation of the entire library program is essential. The application of a program theory has implications for other school libraries. Applying program theory evaluation, leadership selects a library’s values, objectives, and activities (Bickman, 1987; Chen, 1990). An evaluation of the activities includes a determination if the objectives were met and value maintained (Bickman, 1987; Chen, 1990). Once an evaluation is complete, adjustments can be made. Through a consistent evaluation process, the validity of data by generalizable themes of curriculum, practices, assessments, models, and rubrics that improved information literacy within a library program can be assessed. These themes have the potential to shift how secondary school librarians, educators, administration, and students together change the secondary school library program.

Conclusion
The need to use information and communications technology tools increases simultaneously with the need for information. Educators want students to complete quality work that has been ethically and aesthetically produced. Students want to experience information and communications technology tools and information behaviors on their terms. Librarians want to provide leadership that will motivate students through information literacy models, standards and frameworks that engage with content learning to increase knowledge and build life skills. Joining forces under a combined leadership with a focused goal will propel educators, librarians, and students to develop a sustainable information literacy-based library program that will benefit the entire secondary school community.

Chapter 3: Research Design

Trochim (2001) simply asks whether a researcher is willing to trade detail for generalizability (p. 152). This question, which evokes a seesaw image, reflects the choices between quantitative and qualitative research. Where quantitative research seeks to generate conclusions that can be expanded to generalities, qualitative research offers an opportunity to make sense of a situation or phenomenon. Using inductive reasoning, qualitative research moves “from specific observations to broader generalizations and theories” (Trochim, 2001, p. 17). As data are gathered and analyzed, the researcher will detect emerging “patterns and regularities and formulate some tentative hypothesis” (Trochim, 2001, p. 17) that can later be explored, in order to develop “general conclusions or theories” (Trochim, 2001, p. 17).

Trochim’s (2001) explanation of qualitative research supports the examination of information behavior within Western High School’s library program that educators and students utilize for information literacy support. Through qualitative research, the researcher is able to record data generated by educator, administrator, and student participants who are stakeholders
of Western High School’s library program. The open-ended nature of qualitative research allowed the researcher to examine participant perspectives on information inquiry behavior within a natural setting, utilizing authentic curriculum assignments designed by educators to determine learning (Creswell, 2013, p. 45). This distinction is important, as previous information literacy research has restricted students either by query limitations, artificial settings, or irrelevant content. Qualitative research can convey information on individual educator or student growth mindset as he or she makes decisions and reacts within information literacy processes. A “growth mindset is based on the belief that your basic qualities are things” cultivated through effort and experiences (Dweck, 2008, p. 7). Traditional mindset is a set of established beliefs that have been generated within an individual’s culture (Dweck, 2008, p. 16). Therefore, individuals who embody a growth mindset value and pay “close attention to information that could stretch their knowledge” and learning becomes the priority (Dweck, 2008, p. 18). In addition, the discussion of an individual’s culture can often be sensitive in nature. Qualitative research can offer a structure for the respectful examination of how an individual’s culture, made up of socioeconomic, family beliefs and viewed experiences, establishes values for deeper understanding of information behavior.

**Research Questions**

The research questions developed should mirror the open-ended nature of a qualitative study and reflect the aspects of the chosen paradigm. The qualitative research case study presented explored how stakeholders perceived the Western High School library program’s approach toward information behavior and whether it could lead to student information literacy growth.
**Research question one.** How does Western High School’s library program support information behavior?

**Research question two.** How do Western High School educators and administrators describe their experiences with the library program’s influence on information behavior?

**Research question three.** How do the Western High School students describe their experiences with the library program’s influence on information behavior?

**Research Paradigm**

The development of research questions and selection of a paradigm must be completed simultaneously. Research questions have to honor any philosophy by which the researcher views his or her study while remaining within the scope of a selected paradigm. Ponterotto’s (2005) use of Filstead (1979) and Denzin and Lincoln (2000b) establishes that a qualitative research paradigm provides both a philosophical and conceptual framework as a lens to view the research’s selected methodology components (as cited in Ponterotto, 2005, p. 127). Prior to selecting a research paradigm, the researcher has to determine several possible aspects of the study. First, the research is hermeneutical, limiting the research to specific interpretive paradigms. Second, the researcher’s role, as director of Western High School’s library program, combines both study observer and participant. Within the study, the researcher is able to co-construct findings from both the interactive dialogue and interpretations (Ponterotto, 2005, p. 129). Western High School’s library program contains pre-search guidance, a research preparation model, supportive materials, and educational training developed and utilized by the researcher. In addition, a library culture has developed over time that embodies stakeholder perceptions. Because of the researcher’s role, it is important that the study includes a presentation of her background, to include work and cultural experiences, as well as history and
how each shapes the “interpretation of the information of the study and what” is gained (Creswell, 2013, p. 47). Third, the study embraces the philosophy that “multiple realities are constructed” (p. 36) through participant’s various experiences (Ponterotto, 2005, p. 129). Broad interview questions were used to generate and capture participant’s authentic perspective. This thinking also provides a connection to Dewey’s (1902/2009) philosophy of building knowledge through experiences, Wiggins’ (1993) assessment for learning theory, which directs and redirects learning experiences through the analysis of multiple assessments, and Bickman’s (1987) use of a program theory, which establishes a design for evaluating the existing program.

After applying these philosophies to the study, it was determined that Ponterotto’s (2005) Constructivism-Interpretivism paradigm served as the most appropriate lens by which to view educator and student experiences with information literacy within Western High School’s library program. The researcher was firmly grounded as a necessary participant, where individual student realities are valued, deeper meaning was constructed through these individual experiences, and interpretation is a necessary method for analyzing data collected. In addition, research questions offer guidance for collecting data in methods that best offer interpretation opportunities on multiple levels.

Research Design

Qualitative research explores the nuances of a given phenomenon in a natural setting, in order to generate a narrative for deeper understanding (Creswell, 2013, p. 46). Lincoln and Guba’s (1985) naturalistic inquiry does not focus on methodology but on a new way of considering human behavior. In a natural setting, “the design of a naturalistic inquiry…cannot be given in advance; it must emerge, develop, unfold” (Lincoln & Guba, 1985, p. 225), rather than proceeding through a series of strict steps. The design emerges because meaning is determined
through the multiple realities of participants within a given context (Lincoln & Guba, 1985, p. 208). What is learned develops through interactions between the investigator and context (Lincoln & Guba, 1985, p. 208). Miles, Huberman & Saldaña (2014) contribute to qualitative research through the development of an evaluation criteria. Evaluation criteria offer a series of researcher considerations that act as tests of validity. Evaluation criteria (1) check for representation of all stakeholders, (2) “checks for research effects on the case” (Miles, Huberman & Saldaña, 2014, p. 294), (3) use triangulation across sources and methods, (4) weigh the evidence according to strength, (5) check for outliers that may have meaning, (6) use extreme outlier cases to verify conclusions, (7) follow up on surprises, (8) locate negative evidence, (9) use the If-Then test to focus analysis, (10) rule out “spurious relations” (Miles, Huberman & Saldaña, 2014, p. 294), (11) replicate the study in a new context, and (12) locate counter explanations (Miles, Huberman & Saldaña, 2014, p. 294). Constant diligence towards the validation of data leading to the transferability of theory further legitimizes the efforts of qualitative researchers.

Because the researcher sought to examine the experiences of educators, administrators, and students within the natural setting of Western High School’s library program, with the intention of gaining understanding for how information behavior influences information literacy, the researcher chose a qualitative research design. A qualitative study allows for the examination of educator and student perspectives within their individual information ecosystem experiences. In addition, qualitative research offer the researcher an opportunity to contribute her perspective on and interpretation of educator, administrator, and student experiences leading “to an insightful understanding of a case and its internal as well as external complexity” (Yin, 2014, p. 209).
Following the evaluation criteria may lead to transferability of findings and the possible emergence of new theory to improve information literacy learning in secondary education.

**Research Tradition**

The researcher selected to use an *instrumental case study* to examine how the Western High School library program’s approach to information behavior influenced student information literacy growth. Case study research examines “contemporary events…when the relevant behaviors cannot be manipulated” (Yin, 2014, p. 12). Case study research is defined as an empirical inquiry investigating a contemporary phenomenon, when boundaries between phenomenon and context are not clear, using multiple sources and benefiting from prior theory to “guide data collection and analysis” (Yin, 2014, p. 16). The purpose of using instrumental case study research “is to investigate a particular phenomenon or theory” (Pickard, 2013, p. 102). This instrumental case study provided the researcher “with a holistic account of the case and in-depth knowledge of the specific through rich description situated in context” (Pickard, 2013, p. 102) leading to an understanding of the case (Pickard, 2013, p. 102). Applying instrumental case study research supported the researcher’s ability to examine, describe, and derive data focused on individual student understanding of information literacy. Utilizing a *natural setting* allowed for the examination of participant experiences within an authentic and select environment rather than one with a predetermined outcome (Creswell, 2013, p. 76).

This case study research supports the overall examination of Western High School’s library program. Within the program, multiple resources were used to support educator, administrator, and student motivation, understanding, and knowledge growth surrounding information literacy. Evidence was provided through collected printed documentation and stakeholder interviews (Yin, 2014, p. 106). The descriptions may open consideration for
transferability or theory development involving information literacy within K-16 educational setting. While theory offers new perspective to view phenomena, transferability requires a “similarity between the contexts” (Lincoln & Guba, 1985, p. 124). When two contexts are “sufficiently’ congruent, then working hypotheses from the sending originating context may be applicable in the receiving context” (Lincoln & Guba, 1985, p. 124).

The purpose of the study was to determine whether the library program within Western High School supports the development of student information literacy skills. The research developed in-depth description and analysis within the boundaries of Western High School’s library program (Creswell, 2013, p. 98). While Miles and Huberman’s (1994) pragmatic judgment that any method that “offers clear, verifiable and credible meanings from a set of qualitative data—is grist for our mill, regardless of it’s antecedents” (p. 3), this general inductive approach to qualitative research limits possible insight, specific vocabulary, and research motivation of a possible new theory in student research behavior (Miles and Huberman’s, 1994, p. 3). The selection of instrumental case study research insures rigor was embedded into the overall design, to include the process of sampling, procedures, data collection, data analysis, and the emergence of findings. Selecting instrumental case study research also ensures the study’s boundaries and methodology have been carefully and deliberately reviewed to adjust for threats to the research, including the researcher’s close association with the study. Finally, selecting instrumental case study research places responsibility directly on the researcher to heed Saldaña’s (2013) guidance to “examine individual value, attitude, and belief systems about qualitative inquiry” (p. 2) when selecting a coding system to organize and interpret themes generated.
**Key case study theorist.** The research presented utilizes the methodology approach of instrumental case study. Case study practice is utilized in a professional environment or in the context of everyday living to intensely study a specific context, defined as the case (Creswell, 2013, p. 98). Different from ethnography or grounded theory research traditions, the case study research design uses the “role of theory development, prior to the conduct of any data collection” (Yin, 2014, p. 37). It is through this specific context that a unique aspect of an otherwise typical case may evoke the possibility of the emergence of a new theory or indicate the need for additional research.

The foundation for case study research was initiated by the questioning of deductive and inductive reasoning within science (Mill, 1886/2008, p. 147). Deductive reasoning establishes possible themes or hypotheses that are consistently used to evaluate data (Mill, 1886/2008, p. 45). Deductive reasoning establishes that the theme or hypothesis being tested is correct. Inductive reasoning requires the researcher to work between emerging themes within the data until a comprehensive set is established to support a position (Creswell, 2013, p. 45). Thus, actual proof is not determined but rather the researcher and practitioners within the given field are pointed in a direction. This direction gives support to Mill’s (1886/2008) discussion, which opened future speculation for investigating multiple instances of the same phenomena (Mills, 1886/2008, p. 201). Mill’s (1886/2008) offers that induction can be proof “it is inferring something unobserved from something observed; it requires therefore, an appropriate test of proof and to provide that test is the special purpose of inductive logic” (p. 199). Thus, for inductive reasoning to be considered a method of developing proof it must connect different data types that support a new conception or theme (Mill, 1886/2008, p. 199).
Since Mill (1886/ 2008), researchers have recognized a need for qualitative research to intensely investigate a particular case rather than utilize quantitative research to investigate occurrences during of a single point in time. Researchers such as Yin (2014), Stake (2005, 1995) and Merriam (1998) have all offered insight into case study research. Together their efforts have consistently worked to increase the validity of case study through research design. The case study approach has been utilized in many disciplines including psychology, social sciences, law, medicine, and education. Because these disciplines are constantly shifting, the case study researcher must be cognizant that the research is bound by parameters, such as space, time, project, or program (Creswell, 2013; Yin 2014) rather than a specific analytical format. While Merriam (1998) has made significant contributions to this research through contributions within education, Yin (2014) and Stake (2005) offer important validation points for legitimizing case study methodology.

Merriam’s (1998) work embodies Stake’s (1995) humanistic considerations and Yin’s (2014) emphasis on increasing validity, while layering social justice as an influencing factor within educational research. Yin’s (2014) significance to this case is the quest to legitimize case study research through the consistent emphasis on methodology to ensure understanding for maintaining rigor, ethics, analysis, and reporting (p. 19). Stake’s (2005) contribution to this case study surrounds the focus on humanistic research and the researcher’s role within the study. Stake (1995) acknowledges the focus on human concerns and the objective to seek the intense meaning within each human’s interpretation and construction of knowledge within the case (p. 101). Stake (1995) places great responsibly on the researcher to recognize deliberate or intuitive role choices that influence personal participation, expertise, and analysis of the case (p. 103). Stake (1995) urges the researcher to consider “how much the researcher will be her or himself”
within the study (p. 103). This question should be answered ethically and honestly before the researcher proceeds with the case study (p. 103).

Merriam (1998) contributes specifically to this case study research through the recognition of the constant changes occurring in education. Educational professionals often draw upon psychology, sociology, history, and other disciplines to inform practice. However, it is equally important for educational professionals to complete case study research within their own domain, in order to gather relevant data (p. 45). Merriam (1998) references Carr and Kemmis’s (1986) three forms of educational research, positivists, interpretive, and critical, as the lenses to not only create a research design, but to consider intervention once data is analyzed (as cited in Merriam, 1998, p. 4). Positivist educational research generates knowledge that is observable and measureable (Merriam, 1998, p. 4). Interpretive educational research generates knowledge from “inductive, hypothesis- or theory-generating… mode of inquiry” (Merriam, 1998, p. 4). Critical research generates knowledge from the perspectives of multiple realities emerges depending on a person’s knowledge, experiences and beliefs surrounding “power, privilege and oppression in the areas of educational practice” (Merriam, 1998, p. 4).

**Seminal works.** The selection of seminal works is necessary to both support and firmly ground case study as a method for research. Although the focus of this research is within the information science profession, the case study method has crossed many disciplines. Case studies from the University of Chicago’s Department of Sociology during the 1920’s through the 1950’s have been accredited with beginning the momentum to investigate data on specific issues (Creswell, 2013, p. 97). Yin (2014) specifically offers three examples, which contribute to the generalizability of case study findings. Allison’s (1971) single case study examining the 1962 Cuban missile crisis remains a significant example, which illustrates both explanatory and
descriptive functions (Yin, 2014, p. 7). Whyte (1943/1993) along with Neustadt and Fineberg (1978) have presented case studies that yield specific findings that can be viewed as generalities. Whyte’s (1943/1993) case study of a neighborhood produced findings related to “individual performance, group structures, and the social structures of neighborhoods” (Yin, 2014, p. 8). Neustadt and Fineberg (1978) produced an “exceptionally well-researched case study” that “contemporary policy makers have continued to consult” to understand “the quandaries of health crisis and public actions” (Yin, 2014, p. 8).

Evidence based practice has been a primary motivator for producing quality research in the field of education. Because educators continually search for methods to best approach pedagogy to guide students in the building of knowledge, case study research within education has experienced an increase. Cuban and Usdan (2003) presented a multiple case study examining how six different urban districts “have gone about their work and how they have engaged the support and collaboration of the business and political sectors” (Yin, 2005, p. 233). The significance of this multiple case study is in the organization and interpretation of data. Word tables were used to cover “demographic profiles, political and governance reforms, managerial and instructional strategies and outcomes” (Yin, 2005, p. 234). The analysis presented “equally and without research interpretation”, in order for the reader to draw his or her own conclusions (p. 234). Kidder’s (1989) single case study of a fifth grade class “conveys the richness and complexity of everyday life in a school, in a manner not readily emulated by other social science methods” (Yin, 2005, p. 4). The case study is significant for future researchers to create a design that allows for the researcher’s close proximity as the “unobtrusive observer” in order to create general understanding for how the classroom functions (Yin, 2005, p. 4). Both case studies presented by Cuban and Usdan (2003) and Kidder (1989) display how important the research
design is to generating detailed data that can be subsequently transferred between educational settings.

Significant to this research were the case studies found in information science. Kuhlthau’s (1991; 1990; 1988) five-year seminal case study follows the information literacy learning progress of high school students as they advance toward higher education. The case study provided information science practitioners with a longitudinal example. In addition, having Kuhlthau’s research firmly grounded in Kelly’s (1973) personal construct theory provided information science practitioners insight into how perspective adds to a richer understanding for the acquisition of information literacy skills. Through theory, Kuhlthau’s work also added to the understanding for how feelings, cognition, and action progressed, affected information inquiry, and supported development of the Information Search Process model. Saunders (2011) research of information literacy as a learning outcome within the boundaries of the Middle States Commission’s accreditation process reviewed the documentation of over 60 higher education institutions, from which four were selected for case study research. The significance of Saunders’ (2011) research was how it was used to explain an institution’s self-study documentation, which will allow future practitioners to plan information literacy programs (p.98).

Although seminal case studies come from a variety of disciplines, they are similar in that they design the research with validity, in order for the findings to be transferable to similar locations or situations. Case studies specific to education and information science education must always consider the unique perspectives of the population. Yet, it is through similar themes that emerge, in addition to rich details gathered, which allow educators to consider how best to adjust or change pedagogy.

Participants
This case study required a narrow range sampling strategy where participants had previous experience within the phenomenon being studied (Creswell, 2013, p.155). The study examined Western High School stakeholder perspectives on information within the natural setting of the school’s library program. School stakeholders were comprised of administrators, educators, and students. Because the research utilized the case study method, stratified purposeful (Creswell, 2013), also known as purposive sampling (Pickard, 2013), was conducted to “illustrate subgroups” (Creswell, 2013, p. 158), identifying “key informants who will have a great deal of knowledge about the case” (Pickard, 2013, p. 104), and facilitate comparisons (Creswell, 2013, p. 158). While this case study sought sixteen participants: three administrators, five educators, and eight students only six students were interviewed reducing the participants to fourteen.

Participant descriptor variations of position/role, gender, ethnicity, service years, department association, year of graduation, and class level were maximized within the given population of possible participants. Because of the variation in participant roles, not all descriptors applied to each participant. The researcher understood and considered the influence of how course content and professional decisions by educators may necessitate the differentiation of teaching styles, learning objectives, and course preparation levels, in order to meet the learning abilities of individual students. This enriches the experiences of the participants.

Western High School in Massachusetts was selected to complete the research. Proper permissions were sought and received from the Western School District school committee (see Appendix A for school committee permission letter), superintendent (see Appendix B for superintendent permission letter), and the Western High School principal (see Appendix C for principal permission letter). Western High School was selected because of the researcher’s
relationship to the library program, in which information literacy has been the focal point of management and collaboration. Although the library space was available and reading material could be borrowed, Western High School had no formal library program in place and did not employ a certified school librarian for two years prior to the arrival of the researcher. Findings will be used to improve the current library program and information literacy education.

**Recruitment and Access**

Administrators, educators, and students were asked to participate in this case study. All Institutional Review Board (IRB) guidelines were followed for each population. Sample size recommendation for each of these populations varied depending on the unit of analysis being conducted (Pickard, 2013, p. 104). Pickard (2013) states that when using a purposive sampling strategy, informants may open opportunities to recruit other participants who can offer rich detailed information from different perspectives of the case (p. 104). As an organization tool for recruitment, the research followed Pickard (2013) recommendation to create a detailed list to define profiles, which were used to identify a diverse population of participants (p. 105). In order to reduce possible bias, the researcher developed strict criteria for possible participants within each category. All participants or their parent/guardian signed a consent form establishing voluntary participation, the right to withdraw, the purpose of the study, how the researcher will maintain anonymity, and delineating any risks and benefits (Creswell, 2012, p. 149).

**Administrator recruitment and access.** Administrator participants are employed in Western School District. Administrators must have earned proper Massachusetts State certifications for his or her particular position. Administrators were purposefully recruited based upon their professional positions, knowledge of district and school curriculum direction and supports, as well as the influence of their leadership, both direct and indirect, upon Western High
School’s library program. Western School District has three possible administrative participants. A formal letter (see Appendix D for administrator and educator call-to-participate letter) was mailed directly to the three possible participants. Three affirmative replies were received. A meeting was arranged with each administrator during a non-school time that was convenient to the administrator, in order to present the Informed Consent Form (see Appendix E for administrator informed consent form,) and conduct the interview. Administrators received no incentives or payment to avoid possible conflict with the Massachusetts 2009 Ethic’s Reform Act (State of Massachusetts, 2013).

**Educator recruitment and access.** Educator participants are employed as a full-time employee Western School District, physically teaching within the school, and are Massachusetts State certified for the subject areas they are instructing. The researcher recruited participants by sending a call-to-participate email to educators (see Appendix D for administrator and educator call-to-participate letter). Participating educators had to have had at least one information inquiry lesson or unit with planned performance assessments that were incorporated into at least one first semester class he or she taught during the 2014-2015 school year. From the affirmative replies, five educators were purposefully selected using profile descriptors of gender, ethnicity, department, and class level, with the intent to assure diversity within the participants. This ensured that candidates did not represent one content area or grade level, which potentially would have limited participant perspectives. The researcher arranged a meeting with each educator participant during non-school hours at a time convenient to present the project, the Informed Consent Form (see Appendix F for educator informed consent form) and conduct the interview. Interviews took place within Western High School. Educators did not receive any incentives or payment to avoid possible conflict with the Massachusetts 2009 Ethics Reform Act
(State of Massachusetts, 2013). There were no consequences for educators who choose not to participate in the study.

**Student recruitment and access.** All students recruited were enrolled in and attending classes within Western High School during the first semester of the 2014-2015 school year. Eight students were purposefully recruited from the educator participant courses to ensure their direct participation in information inquiry lessons and use of library program materials. This criterion eliminates those students who have only been engaging in information inquiry for self-interests. Every effort was made to diversify student participants between gender, ethnicity, department (research lesson was conducted), year of graduation, and class levels. A letter of recruitment was sent directly to the selected students’ parents/guardians (see Appendix G for parent letter for child participation). A meeting convenient to the parent or guardian was arranged with the six who positively replied. During the meeting, parents/guardians reviewed the purpose of the case study and sign the Informed Consent Form on behalf of their minor child (see Appendix H for student informed consent form). Student participants were asked for their assent by signing the same consent form.

Western High School’s Director of Guidance remained available during the semester for student debriefing should participation in the research evoke learning, behavioral, social, emotional, or medical concerns. To insure student and researcher safety, a second adult who was known to the students, was present during student interviews. Student participants received a $10 gift certificate to Dunkin Donuts as a thank-you for giving up their time to participate. Each parent or guardian was given a copy of the completed Informed Consent Form.

**Data Collection**
The information literacy as a value case study required data collection from various perspectives in order to triangulate the results for similar themes. The researcher utilized the data collation methods of interviews and printed material collection to complete the study. Because Western High School’s library program is part of the school community, educator assignments were authentic and part of the normal course of studies. Students were not expected to complete additional work for the study.

**Interview data collection.** The researcher conducted a series of responsive interviews with student, educators, and administrator participants (Rubin & Rubin, 2013, p. 36). Responsive interviews were chosen due to the emphasis on relationship and trust, necessary elements when working with students, peer educators, and administrators (p. 36). All interviews included a review of the each participant’s Informed Consent Form followed by the interview protocol as outlined in Creswell (2012) offering a script to describe the purpose of the research and the use of predetermined interview questions (p. 220). The researcher used different scripts and predetermined interview questions for administrators (see Appendix I for administrator script and questions), educators (see Appendix J for educator script and questions), and students (see Appendix K for student script and questions). All participants were asked to complete a 60-minute interview. All interview questions related directly to this study’s research questions concerning perception of information behavior as supported by Western High School’s library program. To insure confidentiality, interview questions were designed to not collect identifying information.

A member check was scheduled at a time that was convenient to the participant in the same location as the initial interview. A member check, lasting no more than 30 minutes, allowed each participant to scrutinize his or her transcript (Lincoln & Guba, 1985, p. 236), to
confirm that the transcript “has captured the data as constructed by the informants, or to correct, amend, or extend it . . . to establish the credibility of the case” (Lincoln & Guba, 1985, p. 236).

Initial interviews were recorded using Quick Time and saved on the researcher’s personal computer. Recording software was tested previously to insure it was in working order. Each participant’s interview data was assigned a corresponding pseudonym.

**Printed material data collection.** Administrative print materials that influence the library program were collected and analyzed. Administrative print materials included, but were not limited to, library budgets, Massachusetts State requirements, curriculum requirements, and other supportive information. All administrator or district names were removed from any print materials.

Educator participant print materials were collected throughout the semester. Educator print materials included, but were not limited to, lesson plans that included information inquiry, library supportive materials and/or resources, a librarian-educator collaboration plan, lesson notes, rubrics, and student assessment requirements. All educator names were removed from any print materials. Each was identified by the educator’s pseudonym.

Library program materials identified by educators or students as valuable were collected. Library program printed materials were readily available to the community prior to the research. Using only materials created prior to the study ensures that materials were not created to influence study outcomes. In addition, the researcher gathered the librarian’s notes and library calendar bookings, which are routinely created in the course of library responsibilities. Notes were taken when interacting with the participating administrators, educators, and students when information inquiry issues, questions, supports, or planning were required. All identifying information was removed from the notes.
Data Storage

Interview data recordings were deleted from the researcher’s personal computer once the interviews were transcribed. The computer and printed materials associated with this case study are stored in a locked cabinet of the researcher’s locked home office. All print materials will remain stored in the same locked cabinet for three years following the conclusion of the study.

Data Analysis

An instrumental case study approach was necessary to gain insight into the Western High School library program’s influence on student information literacy growth. Data analysis revealed how phenomena described within the case has been experienced. To examine the research questions of a) how does Western High School’s library program support information behavior; b) how do Western High School educators and administrators describe their experiences with the library program’s influence on information behavior; and c) how do Western High School students describe their experiences with the library program’s influence on information behavior, fourteen interviews were conducted and educator print materials examined. The researcher placed importance on the ability to triangulate data and analysis to show how Western High School stakeholders perceived information behavior within Western High School’s library program. Analysis of this case study’s data included an examination of “significant statements, meaning units, textual and structural descriptions, and descriptions of essences” (Creswell, 2013, p. 105).

Interview questions were thematically aligned but phrased differently to accommodate participant positions or roles. Administrators were asked seven questions, while educators and students were asked eight (see Appendices I, J, & K script and questions). The initial question for each interview sought a general overview of participant information literacy awareness
through the description of an information behavior experience using Western High School’s library program. Subsequent questions were designed to elicit participant perspectives on information behavior experiences surrounding information literacy support, judgment, responsibility, expectations, leadership, pedagogy, assessment, confidence, and value. To avoid influencing responses, questions specifically naming the library were strategically placed at the end of the interview (see Appendices I, J, & K script and questions).

Analysis began with the researcher listening to all interviews in order to discern any audial patterns of data. The researcher then transcribed all participant interviews. To maintain anonymity, participants were given pseudonyms. The web-based product Dedoose was used to facilitate the data analysis after transcriptions were completed. Dedoose, developed by University of Southern California (UCLA) socio-cultural researchers Eli Lieber, Ph.D. and Thomas S. Weisner, Ph. D., is a for-pay analytic Computer Assisted Qualitative Data Analysis application (CAQDAS) for qualitative and mixed method research. Dedoose allowed uploaded transcribed interview data to be interpreted through both individual and multiple coding of interview excerpts. Overlapping units offer deeper understanding of any relationship among the codes developed, which may indicate possible relationships between aspects of Western High School’s library program. Dedoose required the importing of descriptors and first round codes before the coding could be completed. First round In Vivo codes were developed using a sample of two randomly selected interviews from each participant descriptor position or role. The researcher manually cut and sorted In Vivo coded excerpts of the six transcriptions into twenty-eight first round codes (see Appendix L for first round codes). These first round In Vivo codes were used to code all fourteen interviews, including the transcriptions used as samples. Demographic descriptors used to recruit participants were also uploaded into Dedoose.
In Vivo coding was selected as the first round method for analyzing data generated from interviews and printed materials, since the researcher recognized that each participant might have referenced information behaviors in various ways. In Vivo allowed the researcher to “symbolically assign a salient attribute” (Saldaña, 2011, p. 3). In Vivo coding captured and made use of language variations between participants based upon the actual terms used (Saldaña, 2013, p. 91). In Vivo coding is used especially when it is important to “prioritize and honor the participant’s voice” (Saldaña, 2013, p. 91). Excerpts indicating a relationship to information behavior or the library program resulted in the emergence of twenty-eight first round In Vivo codes (see Appendix L for first round codes). The first round In Vivo codes were defined through participant perceptions of the Western High School library program support of information behaviors as an indicator for information literacy learning. The definitions were created in keeping with three of Conley’s (2014) Four Keys to College Readiness. Keys used included students demonstrating “cognitive strategies”, “content knowledge”, and “learning skills and techniques”, important indicators of student college and career readiness (p. 55). These keys contain aspects of student readiness for thinking strategically, knowing core subject knowledge, (p.55) and acting, in order to build upon previous knowledge and recontextualize into a new setting. The fourth key, “key transition knowledge and skills” represents students’ specialized knowledge necessary to navigate and self-advocate the transitions into college definitions (p.71). Since this research looks for indications of demonstrated and developing information literacy skills, this fourth key was not referenced when defining the initial codes.

Analytic memos were created within Dedoose during the first round In Vivo coding, allowing the researcher to reflect upon excerpts, especially those with multiple associated codes

*Focused* coding was used as a second round code analysis of the interview and printed material data. The purpose of *Focused* coding was to identify “the most salient categories” (Charmaz, as cited by Saldaña, 2013, p. 213), which requires the researcher to “make decisions about which initial round codes make the most analytic sense” (Saldaña, 2013, p. 213). *Focused* coding not only prompted reexamination of the first round *In Vivo* codes, but also further narrowed the data into the five concentrated second round coded themes of information literacy, effective educator choices, outside administrative and agency influences, creating a cognitive environment, and program challenges (see Appendix M for secondary coded theme descriptions). These second round coded themes became the organizational basis for illustrating the research findings.

Printed materials collected consisted of educator lesson plans, rubrics, guides, budgets, and library program support offerings. Only educator lesson plans, rubrics, and guides were manually coded using the study’s themes to avoid introducing prejudice. Printed materials created by the librarian were not coded and were used to conceptualize the library program or support findings. The analysis of printed materials highlighted text indicators that related directly to the twenty-eight first round codes. Coded printed materials were used to triangulate participant perception of information behaviors indicating information literacy.

The completed analysis of the interview data contained not only a review of actual excerpts but quantified the frequencies of first round excerpt occurrences within each second round coded theme. Comparing the frequencies of first round occurrences enumerated possible
collective participant perceptions of administrators, educators, and students and their relationship to each other.

Once the data was analyzed, the researcher applied the findings to a logical model to determine whether the outcomes that emerged from Western High School’s library program activities indicated information literate students (Bickman et al., 2009). The logical model developed consisted of the following categories: objective, activities, outputs, and evaluation of benefits (see Appendix N library program logical model). The objective rose from the central theme of the research. In order to connect back to the research questions, activities were the perceptions of participant actions as they related to student experiences, outcomes were based on the reflection of activities and print materials and evaluation considered whether the Western High School library program’s objectives were met by the outcomes of the various activities. For added insight, the researcher aligned within the logical model first round In Vivo coded information literacy variables established within the study to support the evaluation of the outcomes. The logical model was divided and separately applied to each research question, illustrating whether students, educators, or administrators perceived information literacy growth within Western High School. The completed logical model provides support for recommendations necessary to adjust, design new activities, or meet new objectives within Western High School library program’s intended pursuit of student information literacy growth.

Contrasting Analysis Perspectives

The seminal works of library science information behavior research sought to observe participants experiencing phenomena in different conditions (Kuhlthau, 1991). The contrasting difference between past research and this qualitative research is Kuhlthau’s (1991) use of the quantitative analysis tools of the “t-Test and ANOVA to determine significance” (Kuhlthau,
1991, p.365) and “Pearson product-moment measures to determine degree of correlation and measures of linear regression” (Kuhlthau, 1991, p.365). Within this qualitative research, importance is placed on thought and experiences (Creswell, 2013), which the researcher sought to describe or interpret within the analysis. The study was designed to elicit contrasting perspectives from educators, administrators, and students to provide a comprehensive data analysis. The researcher must be most concerned in the interpretive validity of the data generated through the various collection methods regardless of coding analysis chosen for this case study. Therefore, it is vital that the researcher provide a methodology for collection and analysis that allows the participant to describe an experience as the interviewer probes for further clarity and details (Rubin & Rubin, 2013).

**Trustworthiness**

Qualitative research shifts the quantitative researcher’s understanding of trustworthiness to one that now considers naturalistic work (Shenton, 2004, p.63). Quantitative research methods utilize methods of validity, external validity, objectivity, and the ability to generalize from specific findings to test trustworthiness. To separate themselves, qualitative researchers have presented various research perspectives on trustworthiness and have constructed new terms that align better with qualitative research (Creswell, 2012, p.244). Lincoln and Guba’s (1985) model aligned the terminology of *credibility* (internal validation), *transferability* (external validation), *dependability* (reliability), and *conformability* (objectivity) with quantitative tests of trustworthiness (as cited in Creswell, 2012, p. 244).

**Credibility.** Insuring *credibility* requires that research methods and analyses be grounded in previous qualitative research, with changes relating to only the nature of the topic. To reduce possible threats to the credibility of the study, the researcher adopted specific strategies. The
researcher provided a “thick description of the phenomenon under scrutiny” (Shenton, 2004, p.73), which included previous research and findings for reflective comparisons (p. 73). The researcher also provided her information science background to include influences on current curriculum efforts and reduce possible bias. To reduce bias where background is considered, the researcher followed Shenton’s (2004) recommendations to complete “reflective commentary” which provides continual reflective information on the researcher, his or her understanding of the subject, the research purpose, and the research process being completed (p. 73). The interviews were completed during the semester. The researcher also established visibility within the study’s environment to set administrators, educators, students and parents/guardians at ease, build trust, and potentially decrease hesitation, thus allowing authentic and natural data to be collected.

This case study utilized recognized and documented research and data collection methods. Special focus was on information science studies where methods of interviews and printed materials were used to collect data. Data collected was rich in detail to reduce the possibility of misunderstanding in meanings of both actions and interview responses. The researcher made use of a participant member check of completed interviews to clarify meanings (Shenton, 2004). The variety of data collection methods allowed for triangulation. Triangulation generates corroborating evidence from various data sources, recognizes contradictions (false data), and identifies data that does not fit a pattern (Creswell, 2013, p. 251). This is of special concern when working with teenage populations as there is a need to ensure that authentic and honest data is generated. Participants were purposefully chosen using a suggested profiler of descriptors to ensure that stakeholders with a variety of perspectives were selected. Participants could refuse or end participation at any point in the study. This may have ensured willingness to participate without coercion.
Transferability. Increasing transferability begins with the literature review. A deep description of the previous research, methods, and theory not only serves as a foundation for this research, but for future research. In addition, Lincoln and Guba (1985) stress “transferability depends upon a degree of fittingness” (p. 124). The researcher provided “sufficient information about the context in which an inquiry is carried out so that anyone else interested in transferability has a base of information appropriate to the judgment” (Lincoln and Guba, 1985, p. 124). Transferability differs from generalizable, as it requires the setting where the findings can be reapplied be similar to the original case study.

Dependability. The recording of rich and thick detail in the data supported the dependability of the information literacy as a value case study. Dependability is the degree to which another research study may recreate the research within a situation that cannot depend on maintaining the same phenomenon (Shenton, 2004, p. 71). Because the ability to extrapolate generalities in a qualitative study is not possible, dependability of findings and conclusions may be applicable with other populations. Thus, themed categories that emerge from the data indicating growth of information literacy skills may be applied to another secondary school library program. As a result, a full reporting of the boundaries, including descriptors, length of study, and details of data collection have been detailed for future research (Shenton, 2004). Overlapping methods increase the dependability of the research preparation model study.

Conformability. Conformability required that the information literacy as a value case study methodology steps were reviewed critically to ensure the “work’s findings are the result of the experiences and ideas of the informants, rather than the characteristics and preferences of the researcher” (Shenton, 2004, p. 71). The research method used in the research design included detailed steps for participant selection, data collection, data analysis, role descriptions, and the
purpose of any tool utilized. In addition, the triangulation of data supports conformability.

Finally, a check of the data collected was completed to ensure direct reflection of the research questions as supportive evidence. The research question data check ensures the research remains within the study’s boundaries stated by the researchers.

Once all four areas of qualitative test of trustworthiness have been completed with integrity, then the researcher has contributed to the overall research in the given area. Recognizing that these scaffolded pieces of research have bearing on our lives was both the responsibility and a consideration of the researcher. Not completing steps of trustworthiness can undermine the growth and potential impact of the research findings. Thus, the researcher’s responsibility to the research matters.

**Protection of Human Subjects**

Creswell (2013) asserts that the more detailed data a researcher seeks, the more the study is opened up to ethical risks (p. 174). More importantly, the researcher has an ethical responsibility for minimizing the risks to and protecting human subjects. The researcher sought administrative permission to conduct research within the Western School District. This process required a formal request letter and interview explaining the nature of the research and potential educational benefits to the district’s learning community.

Once permissions were granted, focus was placed on the participating human subjects. The human subjects within the study consist of administrators, educators, and students. All who volunteered were assured ethical consideration. Participation was strictly voluntary. Student participants were treated as a population under the age of 18. Students who are under the age of 18 are considered to be a vulnerable population requiring parent/guardian permission before participation in the study (Rubin & Rubin, 2012, p.100).
Permission specifics. To reiterate, gaining parent/guardian permission for students and student assent, as well as administrator and educator releases, required the researcher to provide letters with clear and comprehensive information describing the research procedure, purpose, collection, insurance of anonymity and future use of findings. The researcher provided a statement within the study indicating informed consent was obtained (Rubin & Rubin, 2012, p. 90).

Confidentiality. Although there is only one primary researcher, those who were indirectly involved completed a review for understanding the importance of maintaining confidentiality, to insure bias was removed, and that students were not at risk. Indirect support personnel were not in direct contact with the selected participant population. Each signed consent form, interview transcript, and printed material notations that identify an individual was assigned a pseudonym that corresponds to a specific participant. While the study was being conducted, materials were locked in the researcher’s home office in locked cabinet. Any mention of specific identities within the interview were altered to protect an individual’s privacy or rendered anonymous any criticisms associated with the school and district. Recorded data was destroyed once transcripts and theme analysis had been completed. All data in this publication has been redacted, removing any possibility for identification of the participant.

Chapter 4: Report of Research Findings

Western High School’s library program was designed in response to ongoing discussions concerning students entering higher education who are not prepared for the rigor of academic research (Gross & Latham, 2012; Kovalik, Jensen, Schloman & Tipton, 2010; Oakleaf, 2009; Smith, Given, Julien, Ouellette, & Delong, 2013). Developing information literate students who can sustain, transfer, and reconextualize information literacy processes and skills has become a
goal of the Western High School’s library program. Realization of this goal required inventoring current practices to determine whether information literacy is present within the current library program (Saunders, 2011). The research questions of a) how does Western High School’s library program support information behavior; b) how do Western High School educators and administrators describe their experiences with the library program’s influence on information behavior; and c) how do Western High School students describe their experiences with the library program’s influence on information behavior, drove the study in determining whether information literacy was present in the Western High School’s library program.

This chapter presents an analysis of the interviews obtained from fourteen purposefully selected Western High School administrators, educators, and students, as well as library program supported printed materials. A pseudonym was assigned to each participant. Administrator participants are “Edward”, “John,” and “Thomas.” Educator participants are “Theresa”, “Drew”, “Louise”, “Charles,” and “Lily.” Finally, student participants are “George”, “Maria”, “David”, “Julie”, “Paul,” and “Vickie.” Interview questions sought each participant’s perspective on information behavior experiences related to his or her position or role within Western High School. The experiences of administrators, educators, and students provided evidence of the library program’s influence on information literacy awareness, support, pedagogy, and knowledge within the Western High School community. Through inductive reasoning, twenty eight first round In Vivo coded excerpts were organized into five second round Focused coded themes of information literacy, educator effectiveness, outside influences, cognitive environment, and program challenges. These focused coded themes emerged through an inductive analysis and were used to organize the data findings. In addition to quoted excerpts, quantified frequencies of
occurrences were used to emphasize possible combined perspectives of participants by positions or role (see Table 4-1).

Perceptions of the Western High School library program’s support and influence on student information behavior varied depending on the participant’s position or role. Participants both identified with and defined information behaviors differently depending on their position or role. Information behaviors described were identified by the researcher as established information literacy variables. Administrators used the term research process interchangeably with information literacy as a term for a single concept focused on a set of information behaviors. While administrators could not specifically name information literacy variables, each understood their response responsibility to educators and students by building the capacity for and creating the conditions for learning growth. Relying on educators and the librarian to collaborate and combine their expertise, administrators expected information literacy processes and skills to be woven into all classes.

Educators identified with the individual information literacy variables of pre-search, research preparation, research tools and sources, resource types, resource evaluation, and research relevance. Depending on the need, educators used the same information literacy variables to represent instructional guidance, performance task, and performance assessment, or learning outcome. Educators collaborated directly with the librarian when developing lesson plans, performance tasks, performance assessments, guides, and rubrics and used library program resources to support students. Educators guided students to develop research thinking and processing that represented the varied information literacy meanings. With guidance from the librarian and educator, students described specific researching techniques and skills necessary when engaged in information behaviors. In addition, students responded positively to educator
performance assessments for building information literacy skills. Students, educators, and administrators recognized the Western High School library program as a resource for developing information literacy skills. Students recognized the library program for instructional and resource support and viewed the librarian as another educator in the classroom. Students especially indicated understanding for appreciating and formatting the intellectual property of another person’s work.

Findings also indicated challenges to information literacy learning. Students and educators both recognized that reading influenced the potential to process and understand information. In addition, the lack of time necessary to fully support student learning was a constant concern of educators and administrators. Finally, educators indicated that even when information literacy instruction, performance tasks and assessments, learning outcomes, and collaborations are utilized, student effort and the desire to learn influenced information literacy growth.

Demographics

Three administrators, five educators, and eight students were recruited for the study. Two recruited students declined participation, reducing the number of student participants to six. Western High School’s diversity based on the descriptors of gender, ethnicity, years of service, graduation year, department, and class learning level was reflected in the participant population (see Table 4-2). Participant gender breakdown was 36% female and 64% male. Ethnicity of the participants is 93% white and 7% African American. Administrator and educator employment within their current position ranged from 3 to 21 years of service.

Other descriptors of the study included graduation year, department, and class learning level. Participants of this study are expected to graduate in 2015, 2016, and 2018. While all four
years are not represented, the range represents the matriculation of three years of information literacy learning within Western High School’s current library program. Three years translates into the class of 2015 beginning information literacy learning in their sophomore year.

Department descriptors of Science, Social Studies and History, and English Language Arts identify the differences between this study and previous research which indicated that technical disciplines, such as science, did not coincide with more advanced information literacy skills (Probert, 2009, p. 28). Class learning level descriptors of honors (highest paced), level 1, multilevel, and level 2 (lowest paced) indicated a course’s instructional speed. Indicating class learning levels was necessary when considering McGuinness’ (2006) claim that a barrier to information literacy may exist when educators rely on a student’s own innate ability or self-starting nature to seek out information literacy process and skills in order to complete a project.

Key Terms

Key terms of the study include sustainability, transferability, recontextualizing, source, resource, library program, information behavior, and information literacy variables. The researcher describes sustainability as the continued support towards the information literacy processes and skills growth; transferability as the ability to transfer information literacy processes and skills grade to grade; and recontextualization as the ability to adjust information literacy skills between varied conditions. The researcher defines understanding for the words source and resource differently. Source is intended to be an entity that contains several resources, while resource is an individually created piece of work. The phrase library program is used to define all that occurs within the library, rather than individual library programming. The phrase information behavior is used for the actions an individual engages in while researching for information. This term is used especially with participants who are not familiar with the term
information literacy. The term information literacy variables, introduced by Case (2012) is expanded beyond a set of behaviors to also represent performance tasks, performance assessments, and learning objectives.

**Theme 1: Information Literacy as a combined set of guiding principals and learning objectives**

Overall, this theme provided awareness that administrator, educator, and student perspectives understood there was a need for identifying student information literacy learning objectives, performance tasks, performance assessments, and critical thinking when engaged in information behaviors. The American Association of School Librarian’s (2007) Standards for the 21st Century Learner, the Association of College and Research Libraries’ (2015) Framework for Information Literacy for Higher Education, and Grafstein’s (2002) information literacy variables were aligned during the second round coding as verification that twelve first round codes contained participant perceptions of information literacy processes and skills. This second round theme captured 481 participant excerpts organized by participant position or role (see Table 4-3).

**Administration and information literacy.** While administrators did not specifically name information literacy variables, each saw their role as influencing student information literacy growth by setting curriculum objectives. John, an administrator, explained how he views the curriculum supporting information literacy, “I think we still have a lot of people who think we have to teach students what happened in the U.S. Civil War and who won, rather than looking at aspects of how and why the U.S. Civil War and the French Revolution were similar and different.” While aware that critical thinking and learning objectives are part of information literacy growth, administrators indicated that the responsibility of setting the learning objective
and circumstances for student critical thinking remains with the educator. John expects educators to understand how and why there are different types of information needs. He wants educators to guide students towards considering that to “analytically think about a situation, simple Google searching does not always apply. People have to think about information in two ways. Is it a fill-in-the-blanks question for Google or is there a need to find evidence for some hypothesis. I don’t think students delineate this way without guidance.” Thomas, another administrator expects students to develop “the ability to ask the next question or the ability to think about the next question; it goes back to what the standards have asked kids to do, which is to think more critically, asking not only an initial question but the second and third tiered questions around a topic a student is interested in researching and being able to access the resources.” While not being able to target exact information literacy skills and processes, these administrators have laid the foundation of expectations for educators to guide students when engaging in information behavior.

**Educators and information literacy.** Educator coded occurrences indicated perspectives on how their role influenced student information literacy growth. Educators indicated that information literacy variables were represented in learning objectives, performance tasks, and performance assessments leading towards students learning how to critically think when engaged in information behaviors. Encompassing how the combined information literacy variables of research preparation, resource synthesis, research tools and sources and resource evaluation became vital to his lesson, Charles stated that through his collaboration with the library program:

- Students were exposed to research organization and the process is set up so that by the end result, the final paper and presentation, students were able to analyze and apply.
- From setting up notes, keywords and search strings, to looking at what databases were
available and what sources were going to be used, what area of the web will be identified as credible.

Encouraging the thinking and processing of information of her students, Louise’s information literacy expectations included, “reading through and tearing apart the resource and extracting notes and information that directly connect to the research questions written about a subtopic.” Students were guided using the tangible steps to read, create notes, and make connections to research questions, which facilitated critical thinking and processing within the research process.

Responding to administrator curriculum expectations for student information behavior, all educators required students to select a topic he or she would be interested in investigating. Theresa, a science educator, explained that allowing students to pick a topic rather than assigning a topic was a hard concept for students to understand. She offered that “students in the past have been told to ‘look up Harriet Tubman’, so they go to Wikipedia and look up Harriet Tubman.” This topic-only focused research is a very different process than what is expected. Theresa explained that educators at Western High School are expected to guide students in first finding and reading, “a wide variety of research that has been done on a topic. Students are to find one thing within the reading that they are interested, in order to focus on how exciting research can truly be.” Theresa expected students to learn the content of the class, as well as how information literacy process and skills could generate excitement about research itself, in addition to discoveries within aspects of the original topic. This supports the thinking behind Grassian & Kaplowitz (2009) and National Governors Association Center for Best Practices (2010), which recognizes the link between critical thinking and educator learning objectives.

Educators created the circumstances for students to complete and conceptually understand pre-search, research preparation, research tools and sources, and resource evaluation.
Four educators incorporated pre-search steps. Students were directed to conduct a pre-search before a thesis statement was developed with the expectation of gaining background knowledge about a specific topic. These four educators required students to develop and investigate research questions to facilitate background knowledge understanding before a thesis statement was developed (Rankin, 1992). Charles offered, “the pre-search method gives students a comfortable environment that they can get used to. Students use that comfort to guide themselves to a more specific place. Students ‘cast a wide net’ which gives them more information to move to a smaller netting to focus their information search on.” Beginning with a pre-search is less focused, examining several points of a topic while facilitating each student’s self-guidance towards a single discovery point. Drew stated that for students to understand pre-searching they “have to get comfortable with being uncomfortable because there is a part at the beginning of the research where students feel like they know less then they know more, then they have to work through the information, especially if they want to work authentically at this age.” Getting past the uncomfortable stage of not knowing enough required students become motivated by their own self-discovery point used for further research.

Educators used research preparation steps to organize and encourage thinking and processing necessary with information behavior. Louise reinforced, “students needed to go through the process of establishing research questions and pulling out keywords, in order to search effectively to find information.” Additionally, Louise offered that the “collaboration with the librarian teaches students to prepare for research, getting them ready to develop a thesis, research questions, keywords, search strings and how to use each.” All educator participants guided their students to organize content and thinking in preparation for more in-depth information searches. This differs from current research indicating students use each other for
information seeking assistance or student innate research abilities (Purcell et al, 2012; McGuinness, 2006).

Supporting research preparation of four educator printed materials (lesson plans, associated guides, and rubrics) were found to have related language (Table 4-4). The most frequent occurrences were found in learning level 2 classes, offering specific guidance and assessment opportunities.

While students have been exposed to research tools and sources, educators recognized specific lesson criteria and educator and librarian guidance that led students to the most legitimate resources. Lily expressed concern that students “do not see databases as portals of information and are overwhelmed by the idea of searching.” She was perplexed noticing that students are comfortable, “going to Google, generating another type of access and hundreds of choices.” Similarly, Drew found his students who used Google generated more biased information. He stated that “next time I will structure the lesson in a way to provide more instruction on what a legitimate source looks like and what is reliable.”

Because of the need to ensure a resource’s credibility, reliability, and relationship to the student research questions, educators used resource evaluation techniques. Louise required “information be scholarly, coming from an academic place, published in a database, or an avenue that was scholarly.” When using an open Google search Louise required, “students use a library program worksheet to evaluate for resources that could not be used.” Louise stated:

When students used the worksheet to evaluate, they realized resources they could not use. Many students wanted to use websites but found they were not authoritative. This was hard to understand. Some students determined a resource should not be used but wanted to use it anyways. Students did not understand the consequences of what using that
information did to their paper.

Similarly, Drew offered, “that it is about your argument within the assignment, and the student’s reputation because when you use the information you have to be able to say this was put together by, and name the author.” It is through resource evaluation that students have to make a connection with the outside world and the consequences of using poor information and having it reflect upon their individual work.

Charles and Theresa required students use databases for the pre-search or until a thesis was developed. Additionally, Charles wanted to build student confidence within the research process, by “insuring information of subtopics were within the databases.” This meant students found aspects of their chosen topic within the databases, possibly removing the need for an open web search. Permission to use a web resource was granted only after a web evaluation was completed. Charles’ directions after the pre-search was completed were, “no simple searching. Use Google’s advanced search, filtering out for .edu, and .org, etc. We dropped .com completely.” Only Louise, an educator of a learning level 2 class, collected formal website evaluations as a graded assessment. Theresa and Lilly, educators of class level 1 and honors, graded for resource credibility and reliability using the citation page associated with a student’s work.

Educators identified reading and writing application in addition to recognized information literacy variables. Reading and writing application were of concern to educators. Educator’s recognized students lacked experience with reading, limiting the thinking about the information presented and the possibility of linking to new information. Without reading ability, learning level 2 class educators found students needed more guidance when organizing and understanding information for deepening the search. Louise posits that without reading,
“students have a hard time even processing alternative words. I think students have not read enough to formulate new alternative words for the search. Students don’t think in these ways yet; they have not been exposed to information text reading.” Equally, Louise found writing was incomplete when a student limited him or herself to “citing resources and restating their thesis but not connecting the evidence to the thesis.” Louise, Charles, and Lily all required students go organize resources and recognize the association between reading and writing by creating an outline and making notes. Lily stated, “students were able to see what their paper was going to look like at an early stage and see how information connects.”

**Students and information literacy.** Metacognition was evident as students thought through unique combinations of information literacy variables that pertained specifically to their individual assignments (Case, 2012; Flavell, 1979). Students were able to critically think through and manipulate a search, react to search results, and work between database and search engine tools. Rather than simply stating an information literacy variable as a task, students described the processes and the purpose for each process, indicating awareness of their increased knowledge gain and the value of having that knowledge. David, a sophomore stated,

I thought of other links that were connected to my original search and plugged these in, finding more information. I found that my research sparked new ideas for subtopics to look further into. Some research questions I narrowed down even more to have sub-questions underneath them, which I used to answer the over arching question.

Paul, a freshman student, experienced thinking and processing information by using research questions. Paul stated, “I linked topics. I found facts using research questions and putting them in different orders because maybe there was a subtopic between each that may show up.”
All students indicated understanding how research sources and tools supported their critical thinking. All used various search and advanced search options within databases, Google Scholar, Google Books, Google, and governmental websites to narrow down information retrieved. Vickie, a freshman student, understood the link between research thinking and processing with research sources and tools. She stated, “advanced search and InfoTrac’s Topic Finder was helpful because it brought down the topic one more layer that was needed to find information on and about.” Vickie was able to select and manipulate the sources and tools for locating information, in order to refine a wide topic into arguable points. Using different variables, Maria, a senior student stated, “I would use Science Direct to search using keywords. Many times I would find reviews. I would go to the references of those reviews to find the references off other things.” Again, this student indicated how to think and process using the relationships between a specific information source (Science Direct), how to use keywords within the source’s search tools, and could link to more information using the resource’s reference page. Finally, George, another senior student linked additional information through direct quotes. George stated, “one of the things I really looked for was a good quote that when I read it, it blew my mind out of the water. I would take that quote and try to build around it then lead into the quote and explain that quote and say how it would tie into the general idea of things.” While this student did not mention the exact search for information, the information gathered to discover a point of research and completing a written analysis indicates research thinking and processing was necessary to build a structure of supportive evidence.

Student confidence in his or her ability to act as a researcher grew when students were able to reinforce the processes and skills of discovering something new through their experiences with information (Bruce, 2008). David, enrolled in both Louise’s and Charles’ classes, found
“both did not have me develop a thesis statement until I learned more about the topic in general. I started to really like my topics. I would look up one thing then it would lead me to another topic, which I would look up. That lead me to a whole bunch of other things.” Through the experiences of repeatedly seeking information and using retrieved resources, David was able to build confidence as a researcher.

Students were able to confidently name various search engines, “InfoTrac,” “Science Direct” and “Ebsco” and understand the reasoning for using specific tools and sources which supported their self-perception of possessing proficient and confident information and communications technology skills (Gross & Latham, 2009; 2012). Paul reflected, “the databases were a lot more thorough and to the point. The databases did not try to add words to the search to make the hits bigger, just facts were returned in the search. My impression of websites is that while a lot of it may be true, I don’t know what is really true.”

Students indicated an understanding for making connection for how to select the most relevant and supportive evidence. Maria stated, “I started off thinking some of the articles were original research. However, as I read more I realized these articles did not actually say anything. This was heartbreaking.” Nevertheless, Maria continued to critically think about not only the information but also how the author came to that information. Maria described how determining the relevance of an article required her to develop a process; “with each article I read the abstract, then the discussion. If these matched what I had to say about my research, I would look over the methods section.” Maria processed articles to determined whether there was a connection between the information and her developed research questions.

Using a different strategy, Paul indicated his process to determine the relevance of a resource depended upon when the thesis statement was developed. When the thesis statement
was developed without pre-searching, “all the research focused on one thing and I knew exactly what I needed. But this meant information was overlooked because I knew exactly what was really important to this thesis.” With a pre-search Paul offered that:

I was trying to narrow it down, I kind of need to observe more information because I was trying to intake more to figure out what I was going to argue. There are many possibilities of what I could argue so I needed to find as much information as I could that was relevant to the topic.

Students made the connection between how relevant information stems from the pre-search and a research preparation process and how both of these information literacy variables influenced when in the research process a thesis statement was developed.

**Theme 2: Effectiveness of educator choices to apply information literacy teaching and learning**

Educators contributed the highest frequency of first round codes to this theme (see Table 4-5). Each first round code within this theme represented educator choices for applying information literacy to lessons from the perspective of educators, administrators, and students. Supporting educator choices, an analysis of printed materials indicated frequencies for information literacy variable entries divided by class learning levels (see Table 4-6).

**Effectiveness of educator: Educator perspective.** Educators within this study indicated different information literacy processes and skills within the pedagogical planning and guidance offered to students. Educators offered their different perspectives for how students experience information literacy. Theresa described the information literacy objectives she wanted her students to experience by stating:
Skills the educator and librarian clearly wanted students to obtain included how to search a database; how to find an original article; what a primary source is in science; what a review article is in science; the purpose of the primary article and the review article; how to follow research threads; how to find more information on a topic of interest that came forward in one article; how to collect articles that will somehow add to the overall 15 page paper; how to sort for relevance; how to determine if the articles are credible; how to let the students’ interests that are provoked by an article read guide the student to a topic for the paper.

Both Theresa and the librarian collaborated on student learning objectives not as a linear set of tasks but rather competencies and skills students should develop (Bruce, 2008). Theresa’s content and guidance allowed the librarian to weave information literacy processes and skills into the lesson’s objectives, performance tasks, performance assessments, and rubric.

Theresa’s choice to weave information literacy into the lesson gave her students the opportunity to learn and practice information literacy through the perspective of a problem each wanted to discover more about (Bruce, 2008, p. 28).

Frequent performance assessments indicated whether information literacy variables learning objectives woven into instruction needed instructional adjustment. Charles stated “I am trying to scaffold the lesson so that I can intercept at a place I am seeing concerns. When there is a concern, for example incomplete notes, I give the notes back to the student adjusting for additional days to complete the work.” Varied and frequent assessments allowed educators to redirect, correct, and assess for information literacy understanding rather than base student growth on the performance of a single evaluation (Wiggins & McTighe, 2005). Charles offered that his “students have to do a complete outline that is assessed. Notes are assessed because notes
are an indication of students completing the work and locating credible information. The thesis statement and introduction paragraph are assessed.” Students were able use educator feedback from these small assessments to determine their performance and make adjustments. These small assessments built confidence with information literacy adding up to a larger evaluation, the final paper (Wiggins & McTighe, 2005).

In addition to supporting information literacy learning at the point of instruction, Charles applied what he learned from previous student assessments to his instructional approach for teaching research. Charles offered “lessons and outcomes were adjusted based on the needs of the students from another information literacy project. I realized students did not have enough information prior to researching that allows them to develop an arguable thesis.” Charles began to emphasize the information literacy variable of pre-searching, in order for students to build background knowledge necessary when creating an arguable thesis statement. Charles’ examples both illustrate how assessments can influence information literacy growth to make adjustments for an individual student’s learning or to improve instructional practices for future classes.

Student information literacy assessments were not limited to applications from educators or the librarian. Educators also set the stage using assessments to have students evaluate their own work. The ability for an individual to assess his or her performance supports a life-long learning ability (Wiggins & McTighe, 2005, p.215). Louise was able to promote not only student self-assessment but also peer, educator, and librarian assessments of information literacy and content work learning through round-robin activities. Louise divided students into peer-edit groups, and the online tool Turnitin.com were used over a series of days for students to edit and assess work without a grade consequence. Students self-assessed their performance after reading the anonymous critical feedback of peers who used both the online tool Turnitin.com and group
discussions. In addition, the librarian assessed students individually for “formatting and checking the validity of sources and order. Students needed to also see where a citation was needed.” The educator assessed for content and flow of the work. Louise stated, “by the librarian and me focusing on two different aspects of the paper we did not overwhelm the students. Students were able to fix each thing and repeat the process with the next edit.” Students were also able to reflect upon individual performance, using the perspective of their peer editor and Turnitin.com. As part of their homework, Louise had students decide whether to add more evidence should it be necessary to support the thesis, whether writing had to be adjusted or cited and whether formatting required improvement. With assessments, educators set the capacity for students to internalize critical points within a research process and apply them to their own works.

Educators recognized time was a factor when students engaged in information literacy learning objectives. All educators were concerned about information literacy instruction taking away from content learning (Loesch, 2010; Meer, Perez-Stable and Sachs, 2012). While class learning level honors and level 1 were able to have students use after school time to practice information literacy process and skills, class learning level 2 students were guided primarily during school hours. In addition, students in learning level 2 were provided with more printed material as a support for information literacy learning than either learning level 1 or honors (see Table 4-6). Theresa, an educator, offered the importance of “building into the instructional time opportunities to practice what was taught and after the educator and librarian told students the objectives. For example, we taught them about databases and we allowed them to look there.” This reflective and guided learning opportunity allowed for each student to practice, ask questions of educators and peers, while deeply absorbing aspects of information literacy and curriculum content (Bruce, 2008).
Print material analysis previously presented in Table 4-4 supported that educators not only provided written guidance for information literacy processes but also reported to students how and when they were going to be assessed. While all educators indicated frequent assessment points, not all were graded. Rather, non-graded assessments were used as a “dip stick” check-in for student progress. Louise stated that the objective of providing detailed lesson objectives, assessment opportunities, dates, as well as guides was “because these small assessments help students to fix what was wrong, which causes the realization that they won’t do that wrong thing again.” Assessments opened avenues of consideration for students to think through and understand consequences related to their information behavior choices (Flavell, 1979).

**Effectiveness of educator: Administrator perspective.** All three administrator coded occurrences indicated expectations for educators to use information literacy objectives with educational content. Thomas stated, “I expect it, information literacy, is woven into all our classrooms.” Focused on educator pedagogy, Thomas continued that for students to become information literate, “it starts with the teachers. To talk about the skills our students need to have, we need a process in place to determined when research is taught, how it is taught, the resources that are taught and after reflecting, develop some sort of metric to evaluate student skills.” Thomas would like educators to share “model lessons, getting teachers of similar courses, and building that small group of experts in one discipline to conduct peer observations to not only teach best practices but to show best practices.” While reflecting on best practices John, another administrator, recognized a need to build professional development that supports educators to “embed information and research skills into all instruction, to answer how the school does research across all disciplines.” John wants information literacy woven into educator lessons, stating, “students should not be given task-based research projects in the middle of the semester.
I am offering instructional leadership in looking at how we use assessments and grades looking at how we run our classes, and how will students be able to demonstrate research processes and skills learning.” He wants leadership to build both a mechanism and a constituency to deliver and educate faculty about the concepts and methods for weaving information literacy into lessons.

The administrators understood the need for information literacy to be taught in conjunction with class content. However, John used the word *woven*, while the others used *embed*. There was no detail offered by any administrator to indicate a difference of meaning between *woven* and *embed*. By definition, these two terms offer an opportunity for information literacy instruction differences. In addition, the lack of definition of either term is reasoning for why information literacy vocabulary should be more clearly defined for district understanding.

**Effectiveness of educator: Students perspective.** Student perspectives for the effectiveness of educator choices was found within student reactions to the information literacy decisions made by educators. Students reacted positively to the multiple assessment educators included in their lessons as opportunities for evaluating learning. Table 4-5 indicated that students reacted to assessments offered within an educator’s lesson plan. George, a senior honors learning level student, understood that his final grade evaluation was based on a research paper that combined a variety of research performance assessments completed throughout the semester. George stated, “Before the final paper we had to complete journal article reviews and an annotated bibliography of all the articles.” Each of these assessments had associated instructions and a rubric, which included information literacy variables as tasks and learning outcomes. Julie, a sophomore learning level 1 student, noted how scaffolding assessments became an indication for deepening the information search. Julie stated, “we were allowed to do more research if we needed to fill anything in our outline. When we are doing our outline we have topics and sub-
topics and I realized if I did not know or have enough information, then I needed to do more research.” The educators who worked with Julie and George made decisions that influenced how each student’s information literacy skills grew. Allowing students to learn through their own work using multiple assessments created opportunities for self-correction and continued learning and understanding.

Educators developed various methods for balancing learning objectives with the preexisting student comfort with the use of search engines generating broad results. Responding to an educator’s assessment choice, George had to consider where to best invest his search-for-information efforts. George’s educator required 20 scholarly original study resources for the assignment. Understanding that students were uncomfortable about *not* using Google and lacked confidence in finding information in the databases, the educator compromised on comfort and behavior but not quality. The educator understood students needed to be met on their own terms and allowed Google searches. However, if a student wanted to use a website, he or she could, with the condition that the citation would not be counted as part of the 20 scholarly original study articles. If Google was used, students had the potential to exceed the 20 required resources. By changing the conditions, the educator placed the effort and efficiency choice of looking for information in the hands of each student. The student realized how tethered to simple Google searches they were as opposed to placing effort into retrieving the 20 scholarly original study articles. After making his choice, George offered, “the educators change to allow Google was very fair, other wise this could be a Wikipedia paper. But not by me…” The teacher gave the requirements, offered an adjustment for students to consider that met with their comfort and gave free choice to evaluate and use an open web resource.
Overall, all six students indicated an appreciation for the educators who scaffold learning objectives, assessments, and allowed for adjustments until the content and information literacy processes were mastered. David stated, “I like this process better because you break researching down into steps and I feel confident in how to go through the research process and put together information, formulate a thesis, and put it into an essay.” All recognized information literacy not as a separate piece offered by the librarian or the educator but by both instructors, together.

Vickie, a freshman student felt:

This was a good experience and I understand why research papers have to be written. I am very happy that the librarian and teacher were teaching us how to write a research paper, not just giving it up to us to do on our own. I like guidance. The valuable part of this process was having the guidance.

Each student was given the opportunity to make his or her own learning and values choices while being guided and assessed for the information literacy learning and knowledge growth (Wiggins & McTighe, 2006). How an educator chose to instruct and assess became valuable feedback that a student chose to apply or not apply in order to learn and gain information literacy knowledge.

**Theme 3: Outside administrative and agency influences on information literacy teaching and learning**

Administrators accounted for 90% of the coded occurrences within this theme (see Table 4-7). All administrators considered district and State budgets, Federal and State mandates, curriculum objectives, learning standards, and the district’s greater community as having an influence on information literacy learning. All administrators recognized it is their responsibility to balance these points to support educators and create opportunities for striving toward student academic achievement (Darling-Hammond, 2009). Edward, an administrator, stated his
“responsibility is the planning and setting of goals. A goal for the district is to allocate resources, and personnel, and equipment so that students could be engaged in information literacy processes and develop those skills.” Balancing these points also requires educators to consider the curriculum. Thomas, another administrator whose focus is curriculum, considered the question “research itself is changing, especially at the college level the expectations of research, so are we doing the job of maintaining what colleges feel are best practices? Do our students have the right researching skills?” While administrators were not steeped in the language of information literacy or individual class practices, each has an educator background and realizes the importance of developing student research skills. Administrator excerpts indicated support for the development of student information literacy skills if balanced with Massachusetts State requirements, and educator knowledge, willingness, and confidence, with yearly district assets. Each administrator expressed perspectives through the level of his district leadership lens acknowledging that through discussions and educator evaluation walk-throughs, the Western High School’s library program has supported educators in their approach to student research practices.

**Outside influences: District library ambitions.** If funding was available, all three administrators were inclined to move the library program beyond high school, toward developing a K-12 district information literacy curriculum. Thomas expressed, “what needs to happen is to expand our certified librarians in the areas of middle school, and to insure they have the skills set to developmentally engage students and teachers in best practices around research.” Thomas made the point that by not having librarians “at the middle schools and elementary schools basically the district is sending a message that true research skills development starts at the high school.” While this is not an administrative intent, Thomas recognized that choices made
delivered an unintended message to the greater community. John supported Thomas stating, “it does no good to have a really strong research program at the high school if the 7th grade teacher does a research project and is doing it a different way. Students should be taught how to develop a topic in a similar way all though K-12, creating a district culture.” The administrators grappled with what they want to support and what they can support. While administrators realize certified librarians within a K-12 library program are elements necessary to developing a district library program, continued budget restrictions limit this vision. However, the concepts of information literacy within a library program can be reflected upon by the current culture of Western High School and can be shared with the educators, students, and parents, in order to get the community thinking about student researching (Hargreaves & Fullan, 2011).

**Outside influences: Creating the conditions.** All administrators touched upon how the library program should be part of curriculum planning. Administrators interchanged the terms embed, integrated, woven, and collaborate to represent a desire to have the librarian and educator work together. While administrators do not want to dictate a step-by-step list of prescribed information literacy tasks for educators to follow, they do recognize focus points that have emerged from Western High School’s library program that improve student research. Recognizing he offers indirect support, Edward stated:

> Administrators created the conditions for students to develop information literacy skills, partnering with a librarian, the principal, and others to make sure we set up extended hours, adequate staffing, again in an area where we could do more. We wanted to make sure there was enough collaboration space, that there were opportunities for kids to access computers for databases. We wanted projection space. We wanted to make the space inviting and comfortable, making sure it was a light and airy space, inviting.
Administrators supported the development of central library space with extended student access for before and after school, with professional support and adequate funding. Administrators recognized that their decisions supported opportunities for professional development training and resources, and database and print sources. Thomas reasoned that information literacy professional development is necessary because he was “not positive that every teacher has the skill set to instruct at the level necessary to embed information and research skills into instruction.” The district, including the school committee, has supported the Western High School library program with the understanding and trust that educators and librarian will work together to develop the lessons within the existing curriculum that will build information literacy processes and skills knowledge within students and educators.

All administrators had a keen sense of how Western High School funding supported information literacy development. All administrators discussed the school’s database collection as necessary information and communication tools for researching. John expressed “that the design of the programming means less books, more electronic databases, and offering resources for students so they are learning in multiple places, with a structure to use in the process.” Because the school employs a full time certified librarian, the Massachusetts Board of Library Commissioners’ funded databases are available at no cost to the district for student and employee use. To supplement these, database products from EBSCO, Elsevier, Infobase Learning, Nature America, Rosen Publishing Group, Gale eBooks, and print books have also been purchased using part of the library program’s $13,876 budget for the 2014-2015 school year (see Appendix O Western High School’s library budget). Thus, creating the conditions for students to acquire information literacy skills includes budgeting adequate funding and finding economical ways to bring sources to the Western High School Library. John stressed that for information literacy to
take root, the certified librarian has to respond to curriculum needs of educators and share her knowledge. John offered, “the knowledge of our current librarian has shared about databases combined with listening to the needs of the faculty has resulted in an larger audience who have access to sources.” Again this is a method of looking inward, in order to begin the conversations within district stakeholders to build partnerships necessary to sustain an information literate community (Hargreaves & Fullan, 2011).

**Outside influences: Standards, evaluation, and professional development.**

Administrators are well aware that the adopted Core Curriculum State Standards have had an impact on how students engage with informational text. Thomas, focusing on curriculum, stated that the new standards “have a place in that they are driving research in a larger way. I see this ramping up particularly in how research skills with our new standards are going to challenge our students not just in ELA but science and other disciplines.” To be prepared for the changes, administrators placed a high value on the relationship between the standards, the educator evaluation system, and district supplied professional development. Thomas, recognizing that information literacy professional development is necessary offered “after the professional development we need to certainly, in a developmentally appropriate way, embed information and research skills into all instruction, answering how we as a district do research across all disciplines.” In addition to information literacy learning, administrators made an automatic connection to information and communication technologies as a method to support the learning process. The concept of gaining knowledge with information and communications technologies is in keeping with Fullan’s (2013) assessment that technology can serve as an accelerator of innovation and discovery in learning for both the educator and student.
Administrators understood information and communications technologies could be both exciting and daunting for educators. John stated, “teaching educators the process of research is a big thing. I think sometimes educators are afraid of utilizing databases because they are not sure how to make it work.” The fear of using information and communications technology is real.

Considering educator fear, Thomas reasoned:

These are probably the teachers who do not come to the library because they do not want to show fear of their own skill set. So how do we support these teachers in professional development? I think what we really have to do is look at a professional development model around research that starts at the very basic that reaches everybody and not make assumptions about what people know.

Administrators are sympathetic to educator fears when new learning is necessary. Each participant contributed to the body of ideas to build training and support for educator learning.

Administrators considered the educator evaluation system as another vehicle to facilitate educators learning and practicing how to include information literacy into lesson plans. John offered:

I think training educators could be done with the teacher evaluation system, considering planning, assessment, and teaching all kids. Having student research becomes a thematic discussion point between the vice principals and me. During evaluations, we ask teachers if they are going to use research in his or her classes. We would also ask how the teacher is expecting to use research in his or her classroom.

By asking an educator the methodology for teaching and embedding research into his or her classes, the administrator distributes the responsibility and the creativity to answer how the goal of including student research will be completed. More importantly, the educator evaluation
system then becomes a vehicle for cultivating information literacy process and skill conversations between school administrators. Thus, administrators keep school goals constant, allowing educators, with support from the librarian, to define the methods for student research implementation and evaluation. This builds respect between the classroom educator and the librarian opening conversations toward progress (Hargreaves & Fullan, 2011).

**Outside influences: Advocacy expectations.** All administrators expressed clear expectation for the librarian to act as an advocate and leader for the library program. Thomas expressed, “it is important to the librarian to put information literacy and the library program on the front burner. Unfortunately this seems like part of the profession.” This administrator’s comments support the thinking that the onus of sustained outreach for the library program is on the librarian (Saunders, 2012, p.232). John stated that another type of advocacy is having the “librarian as part of leadership committees with department chairs, as a participant and encouraging teachers to use the library as a support.” Administrators all understood that their role is continually redirected to their individual big-picture perspective, which detracts from library program goals. Each administrator admitted that the library program is a small part of his or her big picture. However, all expect the librarian’s leadership role to include reminding them to renew their focus on the library program. Thomas wants the librarian to “encourage people to push the administration, principals, and central offices, recognizing that advocacy for library program support is an ongoing battle.”

**Theme 4: Creating a cognitive environment where information literacy can grow**

This theme represents educator, student, and administrator perspectives for supporting an information literate community where deep thinking, reflection, and collaboration can thrive.
This theme contained 24% of the total coded occurrences for the first round codes of school culture, learning opportunity, value, and collaboration with librarian (see Table 4-2). These four first round initial codes were grouped in this theme because of the community spirit each invoked when a participant spoke about their information literacy experiences with a sentiment that expanded to others. The excerpts for representing these initial themes made connections with previous codes and among participants within the Western High School community. The connections offered insight into how information literacy learning transpires within Western High School’s structure and systems.

**School culture.** Collectively the perspectives of administrators, educators, and students contain a respect for the library program as a supportive entity within the school community’s culture. Administrators especially grappled with how to build a culture where information literacy can be supported. Thomas stated, “with the current library programming, confidence in researching is high.” However, he recognized that building an information-literate school community requires educators to understand their fears surrounding research, examine their own abilities, and trust opportunities and learn from peers to develop best practices. Understanding more work needs to be completed, Thomas asked the question, “how do you get teachers and students to understand how to conduct research? Teachers are either afraid of research or may be overconfident with their research skills, in a similar manner as students are with technology. This goes back to building capacity with people the teachers trust.” Similarly, John considered how school culture supports information literacy growth at the student level. He stated, “we are trying to change the culture at Western High School from only thinking the library is a place to get a book through investing in subscription databases to support the idea of students conducting research.” Knowing that there is a shift towards improving student information literacy skills,
John asked “how do we filter all Western High School students through the library? How do we, as a school, get to the point of saying ‘welcome to our school, this is how we do research? We need an effective, not necessarily efficient way to influence many populations.” Long term, both Thomas and John expressed a desire to expand an information literacy curriculum to the entire Western School District.

Educator perceptions of school culture in relation to information literacy related directly to the transfer of student skills expectations between grade levels. Educators recognized their role is insuring consistent and transferable information literacy skills, as well as their expectations of what skills students should have before entering their class. Louise stated, “students who take my class as seniors may remember my process from a previous class I taught. These students seem to know right away, to bring out a thesis, research questions, keywords and to perhaps use the organizational methods learned in other classes.” Drew recognized not only the transfer of information literacy skills but that students feel confident when they gain knowledge and understanding of the research process. Drew stated, “intelligence and understanding spans grades and learning levels we place on students. What is fascinating is that once students have guidance and excitement they move at a quicker rate, develop things that are interesting and become confident and creative.” All educators recognized they have a responsibility to guide student information literacy learning as these developed process and skills will transfer with the student to the next class. When information literacy spans levels of achievement, it opens possibilities of bringing a community together under a single focus (McGuiness, 2006). No educator within the study stated that educators required information literacy professional development. The need for professional development was only indicated by administrators.
Student perspective of school culture was limited to how the library program became a safe physical space to find resources and work quietly. George stated, “the library is my go to place because it has less distractions, the theme of the library seems to be focused on comfort. You are not going to be disturbed unless it is something to benefit you.”

**Learning opportunity.** Administrators, educators, and students all contributed to the initial learning opportunity code. Table 4-8 presents the occurrences of participant perspectives for recognizing information literacy knowledge within an individual or the greater school community. While both educators and administrators offered significant learning opportunities from their perspective position, students contributed concrete self-learning from the existing library program.

Students indicated that possible fragments of information literacy learning had transferred into a “big idea” knowledge concept (Wiggins & McTighe, 2005). The “big idea” is a learning opportunity because what is learned can be repeated in a person’s life (Wiggins & McTighe, 2005). Student learning opportunities were indicated through the information literacy process and skills. Senior Maria stated, “I am definitely more confident than when I started researching. I know how to navigate databases better and can find information better. I know I can find something that fills in the gaps.” Maria’s use of the word “gaps” indicated she is aware that building knowledge is a process where previous understanding requires the addition of new information. In addition, Maria learned to use the databases effectively to target more specific “gap” information to support her learning.

Maria’s understanding of information was heightened by appreciating how an author’s credibility can be used to with other credible resources. Maria expressed:
I appreciate information more. I guess I did not know the vast extent that was out there. I did not know that Science Direct existed. The author connections that could be drawn were exciting and really impressed and surprised me. I can track all the different things one person has written or done. This was exciting. I do appreciate information but also all the tools that exist to help find the information. I think that if I did not have this experience in high school of writing a research paper or trying to find information then I would probably struggle a lot in college so the value of the techniques I learned and the thinking like using original research or finding references of one thing, like trying to find reputable things than just something like a blog someone wrote. I cited everything in APA.

Maria grasped the value of connections between resources. Maria also understood how she will be able to recontextualize her information literacy skills into an academic setting after graduation from high school.

Sophomores Julie and David indicated they were able to make personal choices as to which information literacy processes worked best for them. Julie stated, “if I was doing another research paper in any other class, I would probably do exactly what I did in this history class. I probably would not do what I learned in English class.” Julie recognized and made choices for how she learns and wants to conduct research. The understanding that different information literacy processes can be chosen and applied enables students to recontextualize information literacy skills into other classes and experiences (Bruce, 2008; Wiggins & McTighe, 2005). David went beyond valuing the transfer of information literacy processes and skills between classes by sharing with a younger brother at home. David stated,
In history taking notes was a lot easier after the librarian and the English teacher showed us how to have the three columns of notes that included the citation. That was helpful. I took this idea from my English class and used it in my history class. It helped because I could put facts in places and being able to go back to it easily, instead of rereading the articles I began to be more organized. I took what I did home and told my younger brother about it for his work.

Learning opportunities become part of a cultures identity as often they are the values the community places upon itself (Gutek, 2009).

**Value.** All participants contributed to the first round *value* code within this theme with students having highest frequency of excerpts. Individuals who engaged in information literacy instruction, processing, and skills development came to appreciate the scope of the work rather than the content within the work (Dewey, 1916). *Value* was indicated when a participant’s excerpt demonstrated an appreciation for an information literacy variable, the research process, a resource, proper formatting, and crediting for intellectual property. Appreciation for another’s scope of work indicated knowledge that the person can select and transfer appreciation into his or her own value system as something to follow or practice (Dewey 1916).

Students indicated appreciating their own work after experience with the research process, peer contributions, educator and librarian guidance, library program printable guides, the works created by others, and opportunities for displaying knowledge learned through frequent assessments (Wiggins, 1993). Appreciating how information is processed Maria offered, “I used information by summarizing and using direct quotes. I would put most of the summarizing at the end, using my own thoughts but not as an opinion, but as evidence. I come away with thinking how valuable this type of thinking or this way to do research is very valuable.” Having a similar
experience Julie stated, “I took notes. Most of it I reworded but some I quoted. By the time the information was in my paper, it was all reworded unless I absolutely needed a quote. I used in-text citations for quotes and paraphrasing and listed citations in MLA format.” Maria and Julie’s proper processing of the information indicated valuing the work of others and how the information supported their individual work. Value for any author’s work, including the students, became a center point on which the educators, students, and librarian focused.

Students indicated valuing the work they created and shared by determining resource credibility. Julie stated, “you have to get reliable information for the research paper to actually be good. Reliable information is important because you do not want to put wrong information into your paper. You cannot have a good paper from false information. The paper has to be reliable because it is a research paper.” Julie internalized valuing credible information and the pressure of eventually presenting to her peers and reacted by developing a strong work ethic. She continued, “I do not want to sound stupid in front of the class so I work harder. If my work is bad, I will know because the other students will obviously tell and show me. I thought getting feedback was good.” Students came to understand the use of citations as a way to honor authors rather than for plagiarism violations. Paul noted that with practice and support, “citations themselves, once you learned how to do them, were easy. To do them I used the library program templates.” David used “in-text citations on a few quotes but liked to put things in my own words and cite it. I used a quote or paraphrase because it really explained my thesis.”

Appreciating research support George stated, “I would ask my teacher and librarian about APA accuracy styling and get feedback on properly what to do. Whenever I had research questions I would also go to them. With all the feedback I received I am pretty confident in how I am doing the process.” As students came to value their information choices for selecting, processing and
sharing as well as the guidance offered, they grew more confident trusting not only the information literacy variables but also their own skills.

Student participants indicated an appreciation for information literacy processes and skills never mentioning plagiarism. Yet in juxtaposition, educators and administrators indicated a student’s realization of consequences developed value (Gutek, 2009). Educators and administrators indicated that Western High School’s appreciation for information literacy and researching has shifted from being driven by plagiarism and punishment to combining organization of information, engaging in critical thinking, and evaluating information. John offered that he has not had many cases of plagiarism since the library program has been supporting information literacy learning. John commented that Western High School used to, “teach a value to research through consequences.” John stated he used to be invited to classes to speak to students who “were about to do research and talk to the class about ethical research before you get to the point of consequences.” John noted there have been no requests for him to speak about plagiarism consequences in three years.

All five educators stressed the value of recognizing and treating another person’s work with respect, selecting evaluated resources and formatting. Four educators had clear criteria for the formatting of student work embedded into their lesson plans and rubrics. Charles offered students frequent assessments that layered information literacy learning and content, which gave students many opportunities to correct their work. Charles found students did get confused. He stated, “I certainly express value in the kind of information students are thinking about and finding but this usually falls to a silent room. I don’t know if this is because students don’t understand or that they don’t agree about valuing the information they want to use. Students who did not have a citation page did not do the work. This was a personal choice.” John offered
students many opportunities for corrections, which indicated the student’s value of his or her own work. After providing multiple opportunities to correct small assessments, John then dedicated 30% of the final paper’s grade to formatting. John made the argument that at any point in the overall assignment students could correct their work based upon the feedback he offered with each assessment. When a student chose not to correct formatting, find credible and reliable information, or seek additional supportive evidence, it was a choice that had consequences. The choices each student made reflected upon their individual adopted value system.

Printed materials offered insight into educator expectations of student values, including information literacy variables. Four of the educator lesson plans guided citation organization and evaluation of resources as practiced tasks. Educators offered methods for processing information including three column notes, note cards, online notes, and the development of a Works Cited page used to not only record information but also keep track of the authority that produced the work. Educators kept the consideration for another person’s work in front of the student by consistent practice. Responding to educator and librarian support student Paul offered:

I guess the more valuable articles are the ones cited in the actual essay and where direct quotes are from. I did a good job with citing and selecting quotes. I can go back to the research I did and understand how valuable it was and what I did to prepare myself to do the essay and presentation. When I was doing the presentation, I was kind of thinking what was most important. Because I felt that the most important information was something I was sharing with my class.

Paul indicated many levels of respect and appreciation for the information literacy process and variables, knowledge gained and shared, and the ethical treatment of information produced by another human being.
Educators came to value their role in the research process through the experiences of their students. Educators indicated that students began to choose whether or not to identify themselves as a researcher. Theresa, an educator, stated:

That a person cannot get to an answer to a question that is raised by what she or he knows. So it makes a person value the previous research, leading to the realization that there was no answer to the question. I am not quite sure if the students value the experience yet, but students that always do their best work have said to me that they are enjoying this process.

Louise expressed how her students within the library program’s system of information literacy support have been given the choice to act ethically, stating:

Students do come away with understanding for the value of information. Those students who wanted to use the invalid source, I question but they made the choice. However, most students understood when they used valid sources and argued a point. Students also learned about a person who is an expert and one that just has an opinion. And I don't think they can walk away without gaining a sense of appreciation for another’s work because the students are writing an opinion and backing it up the same way someone else did.

Educators offered students every opportunity to learn, be assessed, respond to feedback, and gain knowledge within the lesson with the understanding that for valuing information literacy variables and allowing students to make the final choices of what to internalize, react to, and commit to their own value structure.

**Collaboration with librarian.** First round *In Vivo* coded excerpts of collaboration with the librarian offered insight into elements of building a cognitive environment that supports
information literacy growth (see Table 4-8). Administrators considered collaboration as a method for guiding information literacy learning within the library program. Thomas and Edward recognized the importance of educators collaborating directly with the librarian, while Thomas and John recognized the importance of the librarian working directly with students. Students recognized collaboration through the lesson plans educators developed with the librarian. Paul, a sophomore student, stated “just having the time to research with the two teachers helps. When the teacher and the librarian are in the same room, it helps to bounce ideas between them.” Paul identifies the librarian with the role of an educator, equal to the content area educator.

All students indicated valuing the lessons and time dedicated to teaching about databases, online examples and guides, and formatting. Vicki offered, “I would go to my teacher and the librarian just because they have experiences, but the organizational skills I got from the librarian are helpful.” John divided the purposes of educator and librarian by stating, “I think my librarian and teacher helped a lot. The teacher leads you in the direction you want to go, but the librarian shows you how to get into that direction better than a teacher. I guess the teacher is looking for the final products but the librarian helps you get through.”

Library program and educator printed material indicated occurrences of educator and librarian collaboration (see Table 4-9). Evidence was gathered from the library program’s calendar of bookings, educator lesson plans, and guides. The calendar offered dates educators met to plan a lesson and bookings for co-teaching a class between the librarian and educator. There were 32 collaborative co-taught lessons between the librarian and educator participants during the fall semester. Educators who co-taught determined the scheduling date, amount of class collaboration visits, and the content, and included information literacy processes, skills, and tools, as lesson objectives. Giving students advanced expectations and objectives, two educators
of class learning level 2 students notified students within their lesson plans of upcoming collaborations with the librarian, in addition to assessments and benchmarks. Charles summed up the relationships necessary for researching by stating, “I think there is a lot of collaboration to get students to the analysis point. Collaboration between teacher and students, student and student, teacher and librarian, and librarian and students has to happen.” Louise recognized that the collaboration and the transfer of skills to other classes reinforce information literacy learning and “important to the process was the time spent with the librarian in the library. Every year we have students who say they have already done the process in another class. Students need this guidance. The instruction is reinforced when described by me and then the librarian and how they overlap.”

Theme 5: Program Challenges

Challenges must be a consideration if school and district leadership are to recognize adjustments, improvements, and changes necessary for a library program to flourish. This initial code transferred directly to a theme containing 122 occurrences. Since education is a constantly changing entity that requires research, the associated challenges are also constantly changing (Merriam, 1998).

Reading. One student and four educators recognized a need for additional reading support. Support included reading to understand meaning and concepts, locate keywords or alternative words, organizing facts, encouragement to read, and processing and organizing what was read. As an initial code within the theme of information literacy, administrators, educators, and students recognized reading has a place in the research process. Maria, recognizing her own difficulty with reading perseverance, stated, “the real issue was reading and how I was reading. At first, I was looking at the article title and beginning and there would be nothing really in it.
Then I began to read through the whole article and figured out the end has a good part.”

Recognizing the reading difficulties in her class Louise stated:

> Reading was a struggle for a lot of the sophomores. And when you look at the criteria for a level 1 class and consider the students, reading is a piece that students need to work on and do, that is an expectation of the course. This research assignment shows that some of the students need to increase their literacy skills. Reading for understanding when you are trying to connect information is something you need to improve.

Louise opens the possibility for reading remediation in high school, not for how to read but learning close reading techniques, which are changing the way students conduct research and engage in information literacy (Purcell et al., 2012).

**Time influencing student skills.** All educators were challenged by how many students struggled though the research process because of the variation of student information literacy understanding and skills. No educator or student offered class learning levels as a reason for the variation of information literacy skills. Rather, Charles, an educator who correlated the variation of information literacy skills with the time other educators allowed for the lesson, stated:

> There are a lot of teachers who believe student ability, freshmen and sophomores are not ready to do a research paper at this level, and I disagree with this. Setting up how to find information and what to do with the information, I had to build and tie this into the curriculum, Ya, and I am behind. But, I do not want students to just read and write but to read and write in a certain way, through the project. I have made this a keystone in my own classes.”

All the educators and administrators recognized time dedicated to researching and taken from the curriculum is a problem (Meer, Perez-Stable and Sachs’ 2012).
Administrators also struggled with time. Administrators have to respect past practices and existing cultures before committing to a change due to challenges to the library program (Hargreaves & Fullan, 2011). John stated, “teachers have been comfortable with past practices. Now they require depth of understanding, that is new.” Therefore, change is not immediate even if the administrator recognizes what should be done. John who wanted educators to take ownership for facilitating information literacy development, stated:

It should not be seen as someone else’s responsibility. We do not want teachers saying, ‘its not my job to teach research,’ ‘its not by job to teach a child to use a database,’ or ‘its not my job to each a kid how to properly cite or build a bibliography’ I have always leaned towards making sure these are integrated into the curriculum.

However, understanding and ownership cannot be developed when financial constraints limit the number of certified librarians in the district. Thomas offered that each time schools are asked to wait for information literacy support and training, a new norm is established. This new norm reduces the perceived importance of the library program and further delays the development of processes and skills associated with research in both educators and students. Without support for information literacy, Thomas recognized “we have done a lousy job of professional development or even determining what the skills set of research are.” Edward wondered “if the district has done a good job of pushing the message of teaching research and learning information literacy out to teachers, making sure teachers understand my expectations. I probably have not in, terms of marketing, sent researching expectations to the teachers.”

Administrators and educators understand when teaching information literacy within a standards based curriculum, students need more time processing. Administrators want to offer students the opportunity to work independently during unscheduled time, but John stated the
feelings of all by saying, “kids don't have that time during the school day. We talked about creating the conditions to develop the skills, I don’t think we allow for adequate time for independent learning and practice so it is dependent on teachers to bring classes to the library.” Louise, an educator questioned:

If we may be expecting too much from our students. I say this because when you consider that they have only had three hours of researching introduction and it is continuous, and we don’t waste a second, with the continuous flow of information written, verbal, and visual from us to them on how to research, that there may not have been enough processing time built into the plan and we maybe thinking we conveyed the information clearly and well that students do not get yet because they do not have enough background and enough use.”

Louise struggles with the balance between students mastering specific learning objectives and with their learning capacity.

**Student effort.** One the most frustrating challenges to educators are the students who show a lack of effort. Lack of effort caused by either not wanting to complete the research process or by those students who perceive themselves as having proficient information literacy skills (Purcell, et al., 2012). Students’ initial attitude towards information and information literacy processes and skills as perceived by educators is often unappreciative and impatient. Charles found that although students perceived themselves as knowing how to research he noticed:

How many students at the sophomore level did not understand how to use the search engine options correctly. Students know how to open up Google’s simple search and type in words, but so many students type in the actual question. Students do not understand
how Google works. I think that blew me away that they did not know how to use keywords or even figure out what the keywords are.

Thomas, an administrator, offered the idea that this student attitude is based on their overconfidence with technology, which is often supported by educators, “the assumption is because kids have an iPad or iPod or another device that they possess a fundamental set of skills that makes us assume they do not need instruction in the research area.” John, another administrator, stated students “think they are better with the skills they have…would be over confident with not only using information but presenting information.” While we know all the challenges, it is time to work through each, in order to achieve the goal of creating an information literate Western High School community.

**Chapter 5: Discussion**

An instrumental case study was used to evaluate whether Western High School’s library program supported student information literacy growth, the fundamental purpose for this research. While other research studies provided data for analyzing a specific information literacy skill or process within a learning environment, this study examined students without content or process restrictions. The study asked three driving questions to identify how administrators, educators, and students perceive the library program’s support of information behavior within Western High School. Information behavior language was then interpreted into information literacy concepts generated within the study. While the term information literacy is known primarily within the library science field as a set of concepts and behaviors that transcend educational boundaries, enabling educators, librarians, and administrators to work towards building information literate students ready for the challenges of college and career, it took on other roles within the research (Conley, 2014; Saunders, 2011; Wiggins & McTighe 2005). In
addition, the research indicated information literacy was referenced as a set of behaviors, tasks, variables, and learning objectives, as well as concepts. These five information literacy understandings were interchangeable depending on the perspective and need of the administrator, educator, or student. Behaviors, tasks, and learning objectives were used with lesson planning, instruction, and assessment. Variables and concepts were referenced when consideration beyond the lesson and into life-long understanding was the focus.

The study drew upon Bickman’s (1987) concepts of a program theory and Wiggins (1993) assessment for learning theory to determine how the Western High School library program supported information literacy growth. Evaluating Western High School’s library program required the establishment of a logical model to evaluate whether the library’s goal is being achieved through the planned activities and associated outcomes (Bickman, 1987; Chen, 1990). Planned activities included not only how students were assessed for information literacy growth, but also for how educators taught for understanding based on educator indications of “desired results” (Wiggins & McTighe, 2005). Since the larger concept of developing information literate students who sustain, transfer, and recontextualize information literacy processes and skills reaches into life long learning, these theories are able to work in conjunction with each other. The logical model contains the library program’s contributions to educator open-ended authentic performance tasks and projects that students are assessed on as they engage in information behavior (Wiggins & McTighe, 2005). Presented is how providing the conditions for both learning and assessing information literacy emerges from the library program, passes through administrators and educators and into supporting students knowledge growth.

Logical Model
The study utilized a logical model comprised of Western High School library program’s overall goal, activities, objectives, and evaluation of the objectives met to answer the study’s driving questions (see Appendix P library program logical model determining student information literacy growth). To insure data placed from the study was reflected in the logical model, information literacy initial codes were placed adjacent to the evaluation of objectives. The logical model offered a view into how the library program is functioning, if the evaluation of outputs satisfies the goal, and a tool for determining if change or adjustments are required.

Western High School’s logical model was developed to analyze the library program’s influence on student information literacy growth. In the context of understanding student information behaviors, actions, and reactions, perceptions of information literacy activities, what was learned, and benefits gleaned from the perspective of students, educators, and administrators, were recorded. Logical model activities were determined through analysis of the data. Information literacy activities described by students, educators, and administrators having library program or librarian influences were identified. While the activities do not initially indicate information literacy growth, it is important to keep in mind “information literacy is about using information to learn…drawing on information use or information practices to help secure the learning outcomes that we seek” (Bruce, 2008, p. 15). Thus, instruction for pre-searching, research preparation, research organization, databases, search engines, evaluation, relevancy and formatting may be reflected in tasks, practices, and assessments when the educator’s primary goal was to provide students with opportunities to become proficient in varied information literacy learning objectives.

Library program student activities. The logical model points to students having positive experiences with activities leading to the benefit of learning information literacy
concepts. Recorded student experiences with pre-search methods, preparation for understanding and using keywords, organizing outlines, data, and information from a variety of potential resources, as well as evaluating and selecting authoritative and relevant resources were included in the logical model’s activities. These library program activities are connected as oscillatory variables that students needed to critically think through. Because the activities are connected, the outputs students experienced were also connected. For example, when a pre-search or research preparation activity was created, a student applied what was constructed to an information technology and communications tool. The intimate connection between the pre-search, research preparation, and information and communications tools required the threaded connection of oscillatory thinking and processing for how and what type of information could be retrieved and if these processes should be adjusted and repeated with different results. Students not only experienced information literacy processes and gained understanding during the performance tasks but were also able to reason why the differences in information behavior choices can influence consequences (Flavell, 1979). Confidence grew when students were able to select their own information literacy variables and understand the transferring and recontextualizing of information literacy knowledge to new phenomena (Bruce, 2008; Case, 2009).

The evaluation of student development of understanding and confidence in information literacy included a connection to values. Outputs indicated students completed the evaluation of websites and selected relevant information not only when directed by an educator or librarian but when the desire for producing an assessment that contained quality superseded the desire for speed or the actual grade itself. While not fully developed, the steps and assessments the librarian and educators provided led to students identifying themselves as researchers with actual
researcher responsibilities. Students identifying as a researcher indicated evidence of dedication to writing format, completing citations, understanding a creator or author should be given credit for a published work, and appreciating and taking pride in their own personal work by developing something credible others can learn from.

**Library program educator and administrator activities.** Library program activities with educators and administrators did not directly link to information literacy growth within students. Rather, the outputs based on library program collaborations created opportunities for student information behavior experiences. Students experienced and responded to lesson plans, calendars, guides, rubrics, assessments, and access to information and communications tools provided through educator and administrator activities within the library program. These resources offered a level of transparency to the students, replacing the fear of research with guidance for organizing information and self-learning information processes. Lesson materials provided direction for the overall assignment and guidance for specific practices and assessment expectations. Students interpreted the transparency of an educator’s lesson material as reassurance they could concentrate on making individual decisions concerning the information content rather than the consequences of correctly engaging with information. Removing fear of consequences based on grade or plagiarism allowed students to learn from their mistakes and corrections.

**Program evaluation and goal.** Western High School’s library program’s logical model was created to determine whether the evaluation of student benefits reflected the goal of developing information literate students who can sustain, transfer and recontextualize information literacy skills. The library program exhibited support for positively influencing student information literacy growth. Most importantly, students showed a propensity for
applying ethical and aesthetic value when thinking and processing information related to the specific activities of pre-searching, research preparation, selection of research tools and sources, resource evaluation and choosing relevant information. Further consideration for how an evaluation of student outputs mirror the goals is discussed in conjunction with the driving research questions. The research questions become the vehicle by which the library program is not only evaluated but where implications for change would be generated.

**Western High School’s library program supports information behavior**

A logical model was used to determine a baseline for whether the Western High School’s library program supported information literacy growth. For a library program to evolve, it is important to determine if information literacy is present (Saunders, 2011). Evidence pointed to Western High School’s library program as containing information literacy instruction where students were able to experience formalized assistance (Gross & Latham, 2012). Administrators, educators, and students came to understand information literacy instruction was intertwined into course instruction, guides, rubrics, and individual student assistance provided by the library program. *Intertwining*, rather than embedding, is a weaving of information literacy with course content. Embedding information literacy into courses insinuates instruction is dropped separately into educators lesson content. Educators who used the library program adopted intertwining where co-planning, co-teaching, and at times co-assessing with the librarian spiraled information literacy teaching and learning with content teaching and learning. In addition, the librarian was present for individual student guidance and reflection. The intertwining of information literacy, with course instruction directly influenced student experiences and perspectives of the library program. Without the library program and the intertwining of information literacy concepts with
course content, students would be more likely to define their own information behaviors measured against individual values (Purcell, et al., 2012).

Students were surprised by the differences between library program information literacy instruction as a stand alone and what each have come to practice with intertwined instruction. Students found the intertwined information literacy instruction into content learning offered efficient, effective, and authoritative methods for supporting information behaviors. The library program offered centralized understandings of values educators applied when creating opportunities for students to practice and critically think through information literacy processes and skills. Educator participants who intertwined information literacy instruction into pedagogy understood that information behaviors surrounding information literacy as concepts, tasks, learning objectives, and values mattered both to the student and student’s knowledge growth.

**Considerations for intertwining information literacy.** In order for the library program to influence student information behavior, the study provided evidence of two considerations if information literacy and content teaching and learning are to be intertwined. First, educators and the librarian must consider their understanding differences for the learning outputs shown in the logical model. The differences are a result of the perspective of their respective professions and ownership claims to information literacy. Seven of the twelve information literacy learning objectives were present when compared with the evaluation results of Western High School’s library program’s logical model (see Appendix N library program logical model). Participants indicted the library program provided direct support for the instruction, concepts, and associated values with research techniques and skills, research thinking and processing, pre-search, research preparation, resource evaluation and resource relevance. These information literacy concepts are important components of recognized library association standards and frameworks.
The first round codes of research process, reading analysis, resource types, resource synthesis, and writing application that emerged though the coding process were not determined by educators to be part of the library program, but rather part of their responsibility for instructing synthesis, resource types, writing, and reading. Therefore, there is a value difference concerning points of instruction between the educator and the librarian that needed to be discussed. For this to work there can be no clear ownership line of demarcation. Rather, the educator and librarian, as components of the library program, need to share understanding, learning objectives, and instructional practices to understand each others perspective to create opportunities for student information literacy growth. Within this study the sharing between the librarian and the educator displayed how closely tied the content and assessments are to an educator’s indicators of student learning (Saunders, 2011). The sharing was especially necessary when teaching and assessing student learning between class learning levels. The educator and librarian kept the information learning levels constant no matter the changes to methodology and assessment. By focusing on the learning objectives but changing methodology and assessments, all students had the opportunity to gain information literacy knowledge.

The second consideration for intertwining information literacy and content was for how each participant perceived his or her roles within the school. Administrators acknowledged their role as capacity builders for educators and students to deeply understand, process, and practice information literacy learning. Building capacity meant financial support and communicated curriculum expectations for how the library program brought together printed materials, purchased sources, and utilized personnel. While administrators offered clear expectations and budgetary support for the library program, they recognized a void in communicating their information literacy expectations to educators and students. Without district level information
literacy expectations, the library program struggles upwardly to gain educator support for intertwining information literacy concepts into instruction. Administrators recognized that their support offers downward momentum for the district level information literacy expectations.

As a primary instructor of a class, each educator recognized his or her responsibility for instructing students how to properly research. Educators had the responsibility of setting learning objectives, guiding student instruction, and assessing growth. However, educators within this study understood they needed information literacy support and reached out to the library program. Although the educator and student excerpts do not continually indicate points of the library program, there is an implied perception that the librarian was part of the planning process.

Intertwining of information literacy variables into instruction influenced student growth through learning how to support each other’s knowledge development. Initially students were in the role of the learner with the potential for moving toward the role of instructor. Students used the library program’s librarian for information literacy instruction and individual guidance for specific searches and formatting. The people who students go to for information help can be categorized into three distinct roles: informants, agents, and trainers (Gross & Latham, 2009, p. 343). While informants have the information ready to distribute, agents know where to find information, and trainers are used to gain the skills necessary to locate information (Gross & Latham, 2009, p. 344). Students who used Western High School’s library program identified the librarian in these three roles. However, as students developed information literacy skills, they also could identify themselves as becoming an informer, agent, or trainer. As student information literacy skills grew, they began to rely on each other (Gross & Latham, 2009). When a student’s role changed from learner to instructor, it was driven by his or her desire to learn and share
experiences with peers. The role changes, as well as the motivation behind the change, may potentially inspire students to persevere through the research process.

**Educator and administrator: Library program information behavior influence**

Educator and administrator perspectives on how the library program influenced information behavior relied primarily on the willingness of educators to intertwine information literacy into their lessons. Current educational constructs do not celebrate educator-librarian collaboration nor create the mechanism to collaborate (Saunders, 2011). Educators are focused on content, while librarians are aware of the range of sources and methods for embedding processes and skills, information behaviors, thinking and processing, and information and communications tools into educator lesson objectives (Saunders, 2011, p. 145). Three of the educators within the study collaborated with the librarian to develop lessons, rubrics, assessments, and calendar bookings. Others selected the aspect of information literacy he or she wanted the students to learn, expecting the librarian to intertwine this instruction into the lesson.

Intertwining information literacy into content lessons required collaboration between the educator and the librarian. A mutual trust and appreciation for each other’s knowledge had to exist between the educator and the librarian for successful collaboration to occur. Trust required that the educator and librarian learn from each other. Trust was evident when the librarian was asked to edit student work and participate in developing student article analysis criteria and guides. Similarly, trust was evident when educators published within lesson plans specific librarian created information literacy guides or used information literacy objectives within rubrics and assessments.

Combining collaboration with the information literacy variables makes the educator perspective of the library program more cohesive. The library program thrives when educators
and the librarian collaborate with their professional knowledge and skills set intertwining at information literacy points. When the sharing of knowledge, skills, and responsibilities occurs, rather than the educator or librarian claiming single ownership, Western High School’s students experienced information literacy growth.

**Performance tasks, assessments, and goal.** Educators considered the library program as a resource for developing assessments linked to learning both content and information literacy processes and skills. While only one educator did not frequently assess within his lesson, all realized that the goal of the lesson was not the success of each individual performance task but rather the sum of the tasks and assessments as they become fulfilled learning objectives. All educators understood the accumulation of each performance task within the lesson leads the library program’s goal of developing information literate students. Wiggins and McTighe (2005) ask educators to challenge the validity of evidence that assesses students. Four educators collected various notes and note cards, information analysis, citation works, rough drafts, thesis statements, initial paragraphs and outlines as formal and informal assessments leading up to the final assignment. Opportunities to use feedback to learn from and adjust work were valuable and led to student’s information literacy learning within the extent of the data collected (Wiggins & McTighe, 2005).

**Class learning levels.** A deeper look into educator performance assessments noted that correlation existed between class learning levels and time dedicated to the lesson. Class learning level 2 educators collaborated with the librarian on 20 occasions (see Table 4-9) and completed 15 assessments (see Table 4-6), giving students many opportunities for successful learning of content as well as information literacy processes and skills. Class learning level 2 educators described how they provided a variety of assessment to engage, check, redirect, and support
student learning. Although class learning levels of honors and learning level 1 met with the librarians less and contained fewer assignments, more was expected concerning out-of-class independent work. While educators expressed that time at home allowed more time in the classroom to dedicate to the curriculum, it is “complicated because the teacher has to verify that all work produced is the student’s own” (Conley, 2014, p. 223). Educators and the librarian working directly with class learning level 2 students wanted more control to not only ensure work was being authentically completed but that the skills and processes of information literacy were understood. With the librarian and educator having a presence during all learning level classes, students were able to receive direct support. This supports Badke’s (2005) statement that information literacy is the right of every student (p. 74). Educators of class learning level 1, 2, and honors provided information literacy instruction tailored to the student learning levels. Although limited to these four educators, the differentiation challenged McGuiness’s (2006) findings that educators self-select who is eligible to learn and acquire information literacy knowledge.

The outlier to consider is the multilevel class that provided only one assessment but visited the library to collaborate five times. The multilevel class contained a variety of learners where the educator have to differentiate between additional time, innate ability, the motivated and unmotivated, as well as other differences. While the time dedicated to the collaboration of information literacy learning was embedded, not intertwined, students were only given one chance to show skills acquired. With only one assessment, information literacy takes a back-seat to content (McGuiness, 2006; Saunders, 2011). Unfortunately, there were no students from this multilevel class to offer perspective of information literacy processes and skills learned.
Value. Both educator and administrators saw value emerge though the Western High School library program’s influence on information behaviors. The discussion of value took on three facets: considerations surrounding plagiarism, educator and librarian emphasis for student to identifying as a researcher, and creating a community that encourages thinking about researching through ethical and appreciative lenses. Plagiarism was not discussed as an educator focus, only administrators had this focus. One educator considered the potential for plagiarism as an opportunity for teaching and learning information literacy values and redirecting behaviors. During the peer editing process, this educator let students comment on each other’s work, noting his experience as “what was interesting is that the other students in class understood right away what the person wanted to plagiarize and what was wrong with this method.” Rather than delivering punishment, the educator allowed for self-correction within the performance assessments provided. Students were part of the assessment as comments concerning potential plagiarism came through student feedback. The educator noticed an opportunity for students to influence each other without grade consequences in a respectful manner. While the students discussed may or may not have applied self-corrections, the opportunity to think about consequences, actions, and adjustments for learning through value were available.

Part of the students’ understanding of value was driven by consequences. The importance for appreciating another person’s intellectual property was used to illustrate how students should value information literacy. All educators indicated some type of citation and formatting requirement on their rubrics. More importantly, we can infer by student comments that the instruction received concerning the value of another person’s work led to specific information behaviors. Students emphasized source credibility rather than completing citations, excitement when linking authors, and selection of the best information to represent their work. These
research characteristics led them to use information properly. For this type of understanding to occur, students placed the value of information above their own personal needs. Educators created the opportunity and conditions for students to use information literacy variables to reflect, act, make mistakes, and react until the process had been completed. The library program’s place within this learning process existed through co-teaching, developing rubrics, individual instruction, and printed material guides. Together, the educator and librarian found ways for students to identify as a researcher. When students indicated they were concerned about presenting to the class or peer editing, they were thinking not out of fear but towards building a quality product based on credibility and relevance. While the study only represents six of the school’s students, educator perspectives concerned entire classes. Therefore, when educator perspectives are considered, there is potential for building capacity for information literacy as a value in all classes through intertwined instruction and assessment.

**Students: Library program’s information behavior influence**

Students who participated in the study demonstrated various degrees of information literacy understanding. Similar to the finding of Kuhlthau (1991), the research moved beyond the articulated common activities of students to the considerations of more than information behavior cognition (p. 370). Rather than determining degrees of growth in student information literacy skills, the research uncovered commonalities that laid the foundation for student information literacy to flourish. Two overarching concepts, critical thinking and making independent choices, emerged as common threads among student information behavior experiences within the Western High School library program. These concepts were developed through direct activities containing indirect educator and librarian overarching purposes for intertwining information literacy into lessons. Critical thinking, through individual information
behavior choices, meant information literacy concepts were dependent on each other for students to learn the processes and skills. More importantly, students supplied glimpses into their value structure that was used to contemplate each of the information literacy concepts. Students did not just think about the choice to go to a database, or use specific keywords, indicating cognition. Rather, students employed metacognition, where there is a combination of information literacy variables (Case, 2012; Flavell, 1979, p. 907). One of the variables is the behavior of choosing a consequence. Genuine thinking happens when a student is able to reflect upon consequences before acting (Gutek, 2009, p. 340). Thus, students within this study critically thought through the right or wrong of each information literacy concept before acting, reflected upon the consequences, and used their individual value structure to choose an action (see Appendix Q information literacy value model). Once the action was evaluated, the student determined if a repeat of the action was necessary or to move on to the next information literacy concept.

The overlapping of individual value structures with the concepts of critical thinking and making independent choices evolved simultaneously with student information literacy processes and skills. Students in the study experienced the logical model listed activities of pre-searching, research preparation, database and search engine instruction, evaluating websites, and selecting relevant information. Each activity was a point of information literacy that the educator and librarian instructed and built performance tasks and assessments intended to showcase student progress. While excerpts could quantify these activities through coding, indications of metacognition, reasoning, and value associated with actual choices were contained within the wording of each excerpt. Student excerpts that offered reasoning for information literacy action choices gave the educator and librarian a foundation for shaping future student information
behavior. This shaping then became more than teaching information literacy skills and processes, it came to encompass the development of ethical and aesthetic values by the students.

**Information literacy and value.** Students who participated in this study came with different information literacy value structures developed from previous experiences. Yet, when guided by the study’s educators and the librarian, students displayed a tendency to make choices based on values absorbed from the class instruction. A student offered, “I value learning. I did not want to write a paper for the grade, I wanted to learn something in the process, something new.” This single sentiment is the overarching idea of education, as it leads to constant learning and an increase in knowledge. When viewed through the lens of the library program, this excerpt indicates more than learning information literacy process and skills; it communicates the student’s perceived value of information literacy.

The librarian within this study shared information literacy understanding with educators to shape interactions with students. This sharing contributed to the transfer of information and an increase in knowledge, in addition to the development of values expressed within the research process (Oakleaf, 2009). The activities of pre-searching, research preparation, and using information and communications tools facilitated the development of student confidence when guided to openly investigate a topic until a single point of discovery was targeted. Students were then able to shape and direct a single discovery point they determined into a unique, arguable thesis. The students’ thesis statements were systematically unraveled and placed into a query, in order to locate supportive evidence. While directly guiding students to develop a thesis, create research questions, select keywords, formulate search strings, and manipulate information and communications technology tools to narrow down retrieved information, the educator and librarian trusted students to make choices within each of these information literacy concept areas.
Within the research study, students had a series of critical points where the appreciation of another’s work or their own work required ethical behavior choices.

Where previous studies indicated students lacked the ability to know where to locate quality resources (Smith, Given, Julien, & Delong, 2013), Western High School students indicated exact databases, web searching domains, and the uses for Google Scholar citations and Google Books. Applying critical thinking to these choices built both student knowledge and confidence by engaging in the search, being assessed, and correcting errors without consequences. Critical thinking choices led to actions and reactions concerning keywords and alternative word use to generate better resources, manipulating search tools to target specific types of credible sources, maneuvering through content within a resource to deepen the query, and giving credit for another’s intellectual contributions.

Yet, throughout these choices, actions, and reactions, with the exception of occasional specific guidance from the educator and/or librarian, each student was guided by his or her own value system that included a desire to learn, to develop a well thought out researching structure, to complete a thorough search that rendered the best possible credible and relevant resources to support an argumentative thesis, and to give credit. Students questioned and made judgments such as, “I don’t want to use this information because I don’t know who wrote it.” Or “I want to use information in my essay written by someone who is an expert.” Where previous studies indicated trouble with deciphering information and citing (Asselin & Lam, 2007), students within this study linked authors between additional and/or contributing works, linked journal publications, and formatted in either APA or MLA styles. Western High School students absorbed educator and librarian guidance to eventually weave new information literacy knowledge into their own individual value structure.
Students came to understand that the overlapping skills of the educator and librarian together make a powerful combination for placing the learning responsibility on the student (Kingsley et al., 2011). As one student indicated, educators offered the framework of the content, but the librarian guided the student through the research. All the students within this study expressed the desire to learn as a motivating factor for completing the research process, not fully realizing that they were gaining necessary information literacy process and skills to support future information behavior challenges.

**Implications**

The research presented has implications for current library program instruction, school cultural changes, and future research within the school library science field.

**Implications for practice.** This research has implications for school library teacher practices depending on the library program’s current environment. Practice implications include the *intertwining* rather than embedding of instruction, the value of multiple performance assessments, improving student reading and writing, and understanding how time is a factor in student information literacy growth.

**Intertwining.** The research provided evidence for intertwining of educator content with information literacy concepts and learning objectives during the collaborative development of lesson plans, tasks, guides, assessments, and rubrics by the educator and librarian. Intertwining is different than embedding. Embedding offers the librarian an opportunity to teach an information literacy process within a specific point of an already established lesson. Intertwining, which coils and connects multiple educator and librarian learning objectives, was shown to build student confidence as a researcher able to critically think through and utilize combinations of information literacy variables, weigh choices against consequences, and transfer and
recontextualize processes and skills to other phenomena. Intertwining offered students of all class learning levels the opportunity to gain the same information literacy skills at their own pace.

Intertwining influenced how the term information literacy was experienced: as a set of tasks, concepts, learning objectives, or variables, each having implications for intertwining information literacy into an educator’s course content. Similar to the presented research, intertwining required librarians to share responsibility for and be ever present in a student’s information literacy learning. The study determined that while the librarian contributed and collaborated with the educator, the educator is ultimately responsible for the lesson plans, tasks, assessments, and evaluation of student growth. Intertwining allows the concept of information literacy to emerge, allowing educators and students to focus on both content and tangible information literacy tasks and learning objectives. Information literacy as tasks and learning objectives supports educators and students on their terms. Librarians can concentrate on building awareness of information literacy as a set of concepts and/or spaced variables beyond individual classes and into the community’s value set. Information literacy variable combinations reflect a student’s individual choices weighed against the consequences of misusing information. Together, individual choices become a shared value set.

**Performance assessments.** Educators within the study applied multiple assessments to provide students with practice information literacy performance tasks which led to the understanding of information literacy concepts. The research process can feel overwhelming. Providing opportunities for students to practice, assess, correct, and redirect sent a message to the student that educators and the librarian respected how each one developed knowledge. It also provided the student with the independence to make his or her own choices, which could influence the overall performance evaluation of a student’s combined assessments.
Reading. Both educators and students indicated a need for instructional support and practice with informational text reading, synthesis of information understanding, and writing. Students indicated a desire to learn how to read a research study, while others wanted graphic organizers for locating and recording facts in preparation for synthesis and writing. While not all research, reading, and writing are the same, developing tools students can select from and educators can offer may support the close reading of informational text. Information literacy can become a pathway for competency areas such as critical thinking, reading, and written communication (Saunders, 2011, p. 229).

Time. The use of time was a concern of every educator who introduced research into his or her curriculum. It is frustrating to high school educators that there is a need to remediate research processes and skills to assist students with completion of a rigorous task. Consideration of the development of scaffolded information literacy learning objectives between grades K-12, fostered through collaboration between educators and librarians, will reduce the stress caused by time constraints felt by high school educators. As indicated by one administrator, the district places both the responsibility and pressure for student research instruction on high school educators indirectly by not supporting information literacy K-12. The responsibility should be shared, where students learn to cite in all grade levels that use informational text, select keywords, understand different grade level search tools and databases, and learn to use advanced search options. Today’s economy and school budgets require school districts to find a way to make information literacy a priority. Intertwining educator content and information literacy objectives can support information use with any information behavior demand.

Implications for cultural change. For schools to graduate information literate students, information literacy has to become a significant goal within a school’s current culture. In order to
accomplish this, library professionals must respectfully approach change in a way that will develop a common perspective and approach to information literacy instruction. Information literacy can no longer remain hidden in the library and only taught by the librarian. Rather, information literacy should become part of the school culture’s philosophical value set. Administrator, educator, and librarian leadership has to develop a shared information literacy vision the community can continually reflect upon. The consideration of value presents possibilities for all lesson plans, performance tasks, assessments, guides, and rubrics to reflect the ethical and aesthetical value the school’s culture places on information literacy.

Developing a constituency for the intertwining of information literacy into all disciplines begins with listening, without bias, to the voices of the students, educators, and administrators concerning past research practices, expectations, and fears. Because educators, students, and the librarian have a stake in the ownership of information literacy, the information gleaned from listening will generate important common themes that the community can agree upon. Through listening, a school can take inventory of their current library program, understand educator and student needs, develop school goals surrounding information behavior, and plan with individuals who want to lead the change.

**Implications for research.** Future research that specifically concentrates on K-12 information behavior is vital to understanding the growing demand for information use in education. Within this research study, student participants were freshmen, sophomores, and seniors. This aspect of the research is important because much of the data surrounding student information behavior has been primarily generated in academic settings. If information literacy research continues to indicate students at these academic levels are still entering colleges and universities requiring information literacy remediation, then future research has no choice but to
look into the K-12 educational setting for support. Educators at the K-12 level need to apply research-based pedagogy that allows for the intertwining of librarian and educator skills. This opportunity is not currently available in the academic setting, where embedding of information literacy or separate information literacy classes have historically occurred. Recognizing the differences in settings is a new way of considering information literacy research. Stating information literacy processes and skills are lacking in students is not sufficient, so researching how to build these skills before students are academically challenged and remediation is necessary should be the focus of further research.

In addition, K-12 research should expanding the information literacy concepts of pre-search and research preparation. Both were found to shape the way students came to choose a topic and aspects of the topic and developed an argumentative thesis statement. This early investment by the participating students encouraged the continued dedication toward valuing researching and the information literacy concepts understood.

Finally, Thomas, an administrator, discussed how pre-service educators are being introduced to information literacy. If intertwining of information literacy is introduced into pre-service educator training, researching possible student growth after placement may be an opportunity for further research.

**Limitations of the study**

Because the research is bound to Western High School’s library program, there were some limitations. Although the researcher made efforts to purposely select a diverse population of participants using the previously stated descriptors, there is no guarantee that the sample represents the school’s population. Another limitation is the researcher’s relationship to the library program. As both the researcher and the librarian, reflective notes assisted in ensuring
that the researcher perspective was not biased. The application of a logical model supported this separation by recording only the information behavior perspective of participants, rather than reflections of the librarian/researcher. Finally, terminology, definitions, and understanding for information literacy are commonly known within the library profession. Administrators, educators, and students used different terminology within their interviews to describe the processes and skills necessary when conducting research or engaging in information behaviors. Because of the terminology variation, the findings may not be generalizable to another setting unless there is an understanding of the information literacy terminologies and associated definitions.

**Conclusion**

The study presented went beyond the examination of individual points of information literacy growth in students. Rather, what emerged was the experience of developing a unique collaborative relationship between myself, as the librarian, and the educators. Collaboration indicates parties working together toward the creation of a product. As the school librarian, I found the most effective collaborations occurred when an educator and I merged our teaching methods towards set learning objectives and affirmed similar values. Conversations necessary for collaborating were pivotal and established listening as important practice for respectfully sharing previous practices and results, creating new methods, and making adjustments based on student assessment and responses. Required of both the educator and me was a letting-go of assumptions of previous practices and each other’s responsibility towards the teaching the research process. This letting go of assumptions established a foundation with an honest willingness to want to work together in order to guide students. I especially had to be respectful of each educator’s past practices, grounded beliefs, and research process skills set to establish a comfort level for us to
both guide the development of student information literacy growth, as each were different.

*Intertwining* became the product of the collaborative relationship. Supported by administrators, the educators and I came to redefined our collaboration with the Western High School’s library program. We found, redefining our collaborative relationship as *intertwining* was necessary when our mutual objective was for our students to gain information literacy skills that could be recontextualized to other environments.

Gaining information literacy knowledge is the right of every student who engages in information behaviors (Badke, 2005). The goal of this research study was to determine whether the library program selected for study positively supported student information literacy growth that could be sustained, transferred, and recontextualized. The research encompassed the assessment of student research skills and indicated that students entering colleges and universities lacked information literacy skills necessary for academic research. The research determined that when the objectives of the librarian and the educator were *intertwined*, generating combined lesson plans, tasks, guides, assessments, and rubrics, students were able to learn, practice, self-assess, correct, redirect their learning, and individually invest in their information literacy knowledge development. Both the librarian and the educators have to let go of ownership points within the research process and learn from each other. Students were able to understand individual information literacy learning variables, especially as learning objectives. Students were surprised by their own discoveries, which led them to a new level of information literacy. As each student’s information behavior is guided and he or she seeks to become information literate, there is a shift from the individual student’s focus on values to becoming part of the greater school community adopting a similar value.
Gutek (2009) reminds us that value is not imposed but shared among people who have determined its worth. While much of the previous research points to specific areas of information literacy, this study indicated how a student’s understanding of his or her own value structure can influence information literacy growth. A student’s value structure has worth within the school in how he or she makes judgments. The importance for students to have a value structure emerged through the library program’s collaboration with educators. Students were able to absorb the understanding for the ethical use of information, appreciate intellectual property and understand the implications for information literacy behavior choices. Educator and librarian guidance, pedagogical choices, and frequent individual and class assessments assisted with practice, reflection, and decisions to act and react. Ethical and aesthetical points of information literacy were internalized by students and applied to their own work and the work of others. Thus, a small community of researchers who exist in a cognitive environment emerged, having the potential to influence a high school’s culture, shaping expectations of any information behavior, independent choices, critical thinking and pedagogical methods towards those efforts. It is through this higher consideration of information literacy among community members, administrators, educators, students, and the library program working together toward the single goal of information literate students. As students become information literate, a foundation for building a sustainable information literacy community is established. Students were able to transfer and recontextualize an information literacy value structure more easily with changing information and technologies, rather than inculcating a series of steps with specific information or technologies. The constant is information literacy as a value over the entire constituency within Western High School.
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<td>10</td>
</tr>
<tr>
<td></td>
<td>Administrator</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 4-4
Educator Lesson Plan, Guide, and Rubric Information Literacy Printed Material Analysis

<table>
<thead>
<tr>
<th>Sub- Category</th>
<th>Percent Occurrences</th>
<th>Total Occurrences</th>
<th>Occurrences by Class Learning Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Honors</td>
</tr>
<tr>
<td>Research Thinking &amp; Processing</td>
<td>0.0%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Research Tools &amp; Sources</td>
<td>6.2%</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Research Preparation</td>
<td>24.7%</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>Resource Evaluation</td>
<td>11.1%</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Resource Relevancy</td>
<td>4.9%</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Note. Represented are five of the twelve information literacy sub-categories.
Table 4-5
Effectiveness of educator choices to apply information literacy teaching and learning.

<table>
<thead>
<tr>
<th>Sub-Category</th>
<th>Position or Role</th>
<th>Occurrences</th>
<th>Occurrence Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educator Pedagogy</td>
<td>Educator</td>
<td>53</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>10</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>Administrator</td>
<td>30</td>
<td>32%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>93</td>
<td>100%</td>
</tr>
<tr>
<td>Educator Guidance</td>
<td>Educator</td>
<td>18</td>
<td>67%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>Administrator</td>
<td>6</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>27</td>
<td>100%</td>
</tr>
<tr>
<td>Assessment</td>
<td>Educator</td>
<td>44</td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>26</td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td>Administrator</td>
<td>14</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>84</td>
<td>100%</td>
</tr>
<tr>
<td>Time as an Assessment</td>
<td>Educator</td>
<td>5</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>2</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>Administrator</td>
<td>2</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>9</td>
<td>100%</td>
</tr>
<tr>
<td>Sub-Categories</td>
<td>Percent Occurrences</td>
<td>Total Occurrences</td>
<td>Class Learning Levels</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------</td>
<td>-------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Honors</td>
</tr>
<tr>
<td>Educator Pedagogy</td>
<td>0.0%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Educator Guidance</td>
<td>23.3%</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Assessment</td>
<td>67.4%</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>Time as an Assessment</td>
<td>9.3%</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>43</strong></td>
<td></td>
</tr>
</tbody>
</table>
Table 4-7

Outside administrative and agency influences on information literacy and learning

<table>
<thead>
<tr>
<th>Position or Role</th>
<th>Occurrences</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educator</td>
<td>22</td>
<td>7.72%</td>
</tr>
<tr>
<td>Student</td>
<td>6</td>
<td>2.11%</td>
</tr>
<tr>
<td>Administrator</td>
<td>257</td>
<td>90.18%</td>
</tr>
<tr>
<td>Total</td>
<td>285</td>
<td></td>
</tr>
</tbody>
</table>
Table 4-8
Creating a cognitive environment where information literacy can grow

<table>
<thead>
<tr>
<th></th>
<th>Position or Role</th>
<th>Occurrences</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School Culture</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educator</td>
<td>8</td>
<td>8</td>
<td>18%</td>
</tr>
<tr>
<td>Student</td>
<td>4</td>
<td>4</td>
<td>9%</td>
</tr>
<tr>
<td>Administrator</td>
<td>34</td>
<td>34</td>
<td>73%</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td><strong>Learning Opportunity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educator</td>
<td>32</td>
<td>32</td>
<td>39%</td>
</tr>
<tr>
<td>Student</td>
<td>26</td>
<td>26</td>
<td>32%</td>
</tr>
<tr>
<td>Administrator</td>
<td>24</td>
<td>24</td>
<td>29%</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td><strong>Values</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educator</td>
<td>50</td>
<td>50</td>
<td>44%</td>
</tr>
<tr>
<td>Student</td>
<td>42</td>
<td>42</td>
<td>37%</td>
</tr>
<tr>
<td>Administrator</td>
<td>22</td>
<td>22</td>
<td>19%</td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>114</td>
<td></td>
</tr>
<tr>
<td><strong>Collaboration with Librarian</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educator</td>
<td>47</td>
<td>47</td>
<td>44%</td>
</tr>
<tr>
<td>Student</td>
<td>32</td>
<td>32</td>
<td>30%</td>
</tr>
<tr>
<td>Administrator</td>
<td>27</td>
<td>27</td>
<td>36%</td>
</tr>
<tr>
<td>Total</td>
<td>106</td>
<td>106</td>
<td></td>
</tr>
</tbody>
</table>
Table 4-9
Collaboration with Librarian Printed Materials Analysis

<table>
<thead>
<tr>
<th>Class Level</th>
<th>Total Occurrences</th>
<th>Science Honors</th>
<th>History &amp; Social Studies</th>
<th>English Language Arts</th>
<th>English Language Arts</th>
<th>English Language Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Visit References</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Class Planned Visits</td>
<td>32</td>
<td>4</td>
<td>4</td>
<td>16</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Actual Planned Collaboration Meetings</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Appendix A

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator: Dr. Kelly Conn, Student Researcher: Georgina Trebbe MS, M.Ed.
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program

(month, day, year)
(Name)
(Position)
(School District)
(Address)
(Dear Name)

As part of Northeastern University College of Professional Studies Doctor of Education program, I am required to conduct a research study in an area of interest. I am writing to seek permission from the (school district) school committee for privilege of conducting research within (school name) during the 2014-2015 fall semester.

The research study proposed is coming at an exciting time, as the most recent Association of College Research Libraries (2014) definition and framework for information literacy has a natural pairing with Core Curriculum State Standards. The research to be conducted is a case study design that examines how the current (library name) program influences the development of information literacy processes and skills within our (school name) students. The case study will seek detailed information from 16 participants, comprised of administrators, educators, and students. Following Northeastern University’s Institutional Review Board requirements, students will require parent permission. Participation is voluntary. Since the case study will be examining the current (library name) program, no additional work will be asked of educators or students. The study will gather data from interviews, printed materials collection, and field notes. Individual participant data collected will be given a pseudonym, to insure confidentiality.

There is no cost to the district or remuneration offered to administrator or educator participants. Because I am both the primary researcher and an employee of the district, work dedicated to the research will not be conducted during my district time. All findings will be shared, in order to improve the (library name) efforts in motivating the development of proficient information literacy processes and skills within our (school name) community.

I am available to answer any questions you or the committee may have concerning the proposed research. Letters seeking permission to research have also been sent to (superintendent name) and (principal name).

Thank you for considering my request. I look forward to your reply.

Sincerely yours,
Georgina Trebbe, MS, M.Ed.
Information Specialist/ Librarian

trebbe.g@huskey.neu.edu

413.596.5198
Appendix B

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe MS, M.Ed.
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program

(month, day, year)
(Name)
(Position)
(School District)
(Address)

Dear (Name),

As part of Northeastern University College of Professional Studies Doctor of Education program, I am required to conduct a research study in an area of interest. I am writing to seek permission from you for privilege of conducting research within (school name) during the 2014-2015 fall semester.

The research study proposed is coming at an exciting time, as the most recent Association of College Research Libraries (2014) definition and framework for information literacy has a natural pairing with Core Curriculum State Standards. The research to be conducted is a case study design that examines how the current (library name) program influences the development of information literacy processes and skills within our (school name) students. The case study will seek detailed information from 16 participants, comprised of administrators, educators, and students. Following Northeastern University’s Institutional Review Board requirements, students will require parent permission. Participation is voluntary. Since the case study will be examining the current (library name) program, no additional work will be asked of educators or students. The study will gather data from interviews, printed materials collection, and field notes. Individual participant data collected will be given a pseudonym, to insure confidentiality.

There is no cost to the district or remuneration offered to administrator or educator participants. Because I am both the primary researcher and an employee of the district, work dedicated to the research will not be conducted during my district time. All findings will be shared, in order to improve the (library name) efforts in motivating the development of proficient information literacy processes and skills within our (school name) community.

I am available to answer any questions you or the committee may have concerning the proposed research. Letters seeking permission have also been sent to (principal name) and the (school district) School Committee.

Thank you for considering my request. I look forward to your reply.

Sincerely yours,

Georgina Trebbe, MS, M.Ed.
Information Specialist/ Librarian
Appendix C

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe MS, M.Ed.
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program

(month, day, year)
(Name)
(Position)
(School Name)
(Address)

Dear (Name),

As part of Northeastern University College of Professional Studies Doctor of Education program, I am required to conduct a research study in an area of interest. I am writing to seek permission from you for privilege of conducting research within (school name) during the 2014-2015 fall semester.

The research study proposed is coming at an exciting time, as the most recent Association of College Research Libraries (2014) definition and framework for information literacy has a natural pairing with Core Curriculum State Standards. The research to be conducted is a case study design that examines how the current (library name) program influences the development of information literacy processes and skills within our (high school) students. The case study will seek detailed information from 16 participants, comprised of administrators, educators, and students. Following Northeastern University’s Institutional Review Board requirements, students will require parent permission. Participation is voluntary. Since the case study will be examining the current (library name) program, no additional work will be asked of educators or students. The study will gather data from interviews, printed materials collection, and field notes. Individual participant data collected will be given a pseudonym, to insure confidentiality.

There is no cost to the district or remuneration offered to administrator or educator participants. Because I am both the primary researcher and an employee of the district, work dedicated to the research will not be conducted during my district time. All findings will be shared, in order to improve the (library name) efforts in motivating the development of proficient information literacy processes and skills within our (school name) community.

I am available to answer any questions you or the committee may have concerning the proposed research. Letters seeking permission have also been sent to (superintendent name) and the (school district) School Committee.

Thank you for considering my request. I look forward to your reply.

Sincerely yours,

Georgina Trebbe, MS, M.Ed.
Information Specialist/ Librarian
Appendix D

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program

(month, day, year)
Administrator/Educator Name
Administrator/Educator Position
Address
Town, State, Zip Code

Dear (Administrator or Educator Name),

I would like to invite you to take part in a research study I am conducting. The study is a requirement in the completion of the Northeastern University College of Professional Studies Doctor of Education program.

The research being conducted is a case study design. The case examines stakeholder perspectives for how the (library name) program influences information literacy motivation and development in secondary education students. Your perspective as a leader within the district offers a unique view that can benefit the overall investigation.

Administrative (adjust for Educators) participation consists of an interview, which takes place during non-school hours, at a time that is convenient to you. Each interview should take 30 minutes. Follow up interviews will be arranged if there is a need for clarification. The research follows Northeastern University’s Institutional Review Board requirements. Your participation is voluntary and you will not be asked to complete any additional work. The study will gather data from interviews, printed materials, and field notes. The data collected will be given a pseudonym, to insure your confidentiality.

Thank you for considering my request for you to participate in this case study research.

Sincerely,
Georgina Trebbe M.S., M.Ed.
Information Specialist/ Librarian
(school name)
Appendix E

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program

(month, day, year)

Re: Informed Consent to Participate in a Research Study

Dear (Administrator Name),

We are inviting you to take part in a research study. This form will tell you about the study, but the researcher, Mrs. Georgina Trebbe will explain it to you first. You may ask Mrs. Trebbe any questions that you have. When you are ready to make a decision, you may tell Mrs. Trebbe if you want to participate in the study or not. Participation is voluntary. If you have decided to participate, Mrs. Trebbe will ask you to sign this statement and will give you a copy to keep.

Why am I being asked to take part in this research study?

We are asking you to be part of the study because you are employed as an administrator within the (school district name) and work directly with (school name).

Why is this research study being done?

The purpose of this research is to examine how the (library name) program supports student information literacy skills.

What will I be asked to do?

If you take part in this study, you will be asked to be interviewed, in order to share your perspective on information literacy. In addition, you may be asked for printed materials that support the (library name).

- Mrs. Trebbe will conduct a 60 minute interview during the Fall 2014-2015 semester. Interviews will be scheduled during non-school hours, at a time that is convenient for you. Interviews will be recorded and can take place within the administrative or library offices. Member checks will be conducted for transcript clarification and assurance for gaining a full understanding of what was said in the interview.

Where will this take place and how much of my time will it take?

The overall research will be conducted within (school name). Administrators have the option of being interviewed in A144 or Mrs. Trebbe will travel to the administrator’s office. All interview data and printed materials will be stored on a hard drive, kept in a secure location. Interview recordings will be destroyed once the research is competed.
Appendix E continued

Will there be any risk or discomfort to me?

There is no foreseeable discomfort with this research.

Will I benefit by being in this research?

There is no personal benefit to anyone participating in this research.

Who will see the information about me?

Only Mrs. Trebbe will see the identified interview information. No report or publications will use information that can identify participants. Non-identified and coded data will be used to report this study’s findings.

What will happen if I suffer any harm from this research?

No special arrangements will be made for compensation or for payment for treatment solely because of your participation in this research.

Can I stop my participation in this study?

Your participation in this research is completely voluntary. You do not have to participate if you do not want to and you can refuse to answer any question. Even if you begin the study, you may quit at any time. If you do not want to participate or if you decide to quit, you will not lose any rights, benefits, or services that would have otherwise been provided.

Who can I contact if I have questions or problems?

If you have any questions about this study, please feel free to contact Mrs. Georgina Trebbe at 413.596.5198/ trebbe.g@husky.neu.edu the person conducting the research. You may also contact Dr. Kelly Conn at k.conn@neu.edu, the Principal Investigator.

Who can I contact about my rights as a participant?

If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection. 960 Renaissance Park, Northeastern University, Boston MA 02115. Tel: 617.373.4588. Email:nregina@neu.edu. You may call anonymously if you wish.

Will I be paid for my participation?

There is no payment offered to participants of this study.

Will it cost me anything to participate?

There are no costs associated with participation in this study.

Is there anything else I need to know?

You must be at least 18 years old to participate unless your parent or guardian gives written permission.
Appendix E continued

I agree (Administrators Name) to take part in this research.

<table>
<thead>
<tr>
<th>Signature agreeing to take part</th>
<th>Date</th>
</tr>
</thead>
</table>

Name of the person above

<table>
<thead>
<tr>
<th>Signature of person who explained the study to the participant above and obtained consent</th>
<th>Date</th>
</tr>
</thead>
</table>

Printed name of person above
Appendix F

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe MS, M.Ed.
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary
Education Library Program

(month, day, year)

Re: Informed Consent to Participate in a Research Study

Dear (Educator Name),

We are inviting you to take part in a research study. This form will tell you about the study, but the researcher, Mrs. Georgina Trebbe will explain it to you first. You may ask Mrs. Trebbe any questions that you have. When you are ready to make a decision, you may tell Mrs. Trebbe if you want to participate in the study or not. Participation is voluntary. If you have decided to participate, Mrs. Trebbe will ask you to sign this statement and will give you a copy to keep.

Why am I being asked to take part in this research study?
We are asking you to be part of the study because you are employed as an educator at (school name).

Why is this research study being done?
The purpose of this research is to examine how the (library name) program supports student information literacy skills.

What will I be asked to do?
If you take part in this study, you will be asked to be interviewed to share your perspective on information literacy. In addition, you will be asked for printed materials used during an information inquiry (research) lesson or unit that utilized the (library name) program.

• Mrs. Trebbe will conduct a 60 minute interview during the Fall 2014-2015 semester
  Interviews will be scheduled during non-school hours, at a time that is convenient for you.
  Educators will be interviewed after completing at least one information inquiry lesson or unit
  with at least one class. Interviews will be recorded and take place within the (library name)
  offices. Member checks will be conducted for transcript clarification and assurance for
  gaining a full understanding of what was said in the interview.

Where will this take place and how much of my time will it take?
The overall research will be conducted within (school name). Educator interviews will take place in
A144. All interview data and printed materials will be stored on a hard drive, kept in a secure
location. Interview recordings will destroyed, once the research is competed.
Appendix F continued

**Will there be any risk or discomfort to me?**

There is no foreseeable discomfort with this research.

**Will I benefit by being in this research?**

There is no personal benefit to anyone participating in this research.

**Who will see the information about me?**

Only Mrs. Trebbe will see the interview information. No report or publications will use information that can identify participants. Non-identifying and coded data will be used to report this study's findings.

**What will happen if I suffer any harm from this research?**

No special arrangements will be made for compensation or for payment for treatment solely because of your participation in this research.

**Can I stop my participation in this study?**

Your participation in this research is completely voluntary. You do not have to participate if you do not want to and you can refuse to answer any question. Even if you begin the study, you may quit at any time. If you do not want to participate or if you decide to quit, you will not lose any rights, benefits, or services that would have otherwise been provided.

**Who can I contact if I have questions or problems?**

If you have any questions about this study, please feel free to contact Ms. Georgina Trebbe at 413.596.5198/ trebbe.g@husky.neu.edu the person mainly conducting the research. You may also contact Dr. Kelly Conn at k.conn@neu.edu, the Principal Investigator.

**Who can I contact about my rights as a participant?**

If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection. 960 Renaissance Park, Northeastern University, Boston MA 02115. Tel: 617.373.4588. Email:nregina@neu.edu. You may call anonymously if you wish.

**Will I be paid for my participation?**

There is no payment offered to participants of this study.

**Will it cost me anything to participate?**

There are no costs associated with participation in this study.

**Is there anything else I need to know?**

You must be at least 18 years old to participate unless your parent or guardian gives written permission.
Appendix F continued

I agree to (Educator’s Name) take part in this research.

<table>
<thead>
<tr>
<th>Signature agreeing to take part</th>
<th>Date</th>
</tr>
</thead>
</table>

Printed Name of the person above

<table>
<thead>
<tr>
<th>Signature of person who explained the study to the participant above and obtained consent</th>
<th>Date</th>
</tr>
</thead>
</table>

Printed name of person above
Appendix G

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program

Month Day, 2014

Dear [Parent/Guardian Name(s)]

I would like to invite [Student’s Name] to take part in a research study I am conducting at [school name]. The study is a requirement in the completion of the Northeastern University College of Professional Studies Doctor of Education program.

The research being conducted is a case study design that examines various perspectives for how our [library name] programming influences student motivation for developing research skills. [Student’s Name] unique perspective as to how his/her research skills have evolved during the fall semester can benefit the overall investigation.

[Student’s Name]’s participation would consist of an interview and collection of printed materials. Sixty-minute interviews will take place after school at a time that is convenient to your family. A second thirty meeting will be conducted for [Student’s Name] to check and clarify what was said in the interview.

[Student’s Name] will require your permission before participation is granted. In addition, [Student’s Name] will be asked for assurance that he/she does want to participate in the study. [Student’s Name]’s identity will be kept confidential by the use of a pseudonym. [Student’s Name] participation is voluntary and he/she can with draw from the study at any time. Please be assured [Student’s Name] will not be asked to complete any additional work for this research study. Since the case study examines what is currently happening when students research using the [library name], all work is within [Student’s Name] normal course of study. [name school district] has granted permission for Mrs. Trebbe to conduct the research at [school name].

Students who participate will be given a $10 gift card to Dunkin Donuts upon the completion of this study.

Students or parents interested should contact Mrs. Trebbe at trebbe.g@husky.neu.edu.

Thank you for considering the request for [Student’s Name] to participate in this case study research.

Sincerely,

Georgina Trebbe MS. M.Ed.

Ed.D Candidate
Northeastern University
Appendix H

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe MS, M.Ed.
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program

Month Day, 2014
Re: Informed Consent to Participate in a Research Study

Dear (Parent or Guardian Name),

We are inviting your child, (child’s name) to take part in a research study. This form will tell you about the study, but the researcher, Mrs. Georgina Trebbe will explain it to you first. You may ask Mrs. Trebbe any questions that you have. When you are ready to make a decision, you may tell Mrs. Trebbe if you will grant permission for (child’s name) to participate or not. Participation is voluntary. If (child’s name) has decided and you have granted permission to participate, Mrs. Trebbe will ask you to sign this statement and will give you a copy to keep. (School district name) has granted permission for Mrs. Trebbe to conduct this research at (school name).

Why am I being asked to take part in this research study?

We are asking (child’s name) to be part of the study because he/she is enrolled at (school name).

Why is this research study being done?

The purpose of this research is to examine how the (library name) program supports student information literacy skills.

What will I be asked to do?

If (child’s name) take part in this study, she or he (select one) will be asked to be interviewed and to share information inquiry lesson notes and assessments that are part of a course lesson or unit.

- Mrs. Trebbe will conduct student interviews during the Fall 2014-2015 semester after school for 60 minutes. Interviews will be scheduled at a time that is convenient for the student once the information inquiry lesson or unit is completed. Interviews will be recorded and take place within the (library name) offices. Follow up interviews will only be conducted if clarification due to terms of recording interferences has prevented the researcher from gaining a full understanding of what was said.
- Once the educator has assessed and graded the student’s work, Mrs. Trebbe will electronically collect any notes and assessments that were part of the information inquiry lesson or unit.

Where will this take place and how much of my time will it take?

The overall research will be conducted within (school name). Interviews will take place in both A144 and A138 depending on which room is available at the time selected by the parent and student.
Appendix H continued

**Will there be any risk or discomfort to me?**

There is no foreseeable discomfort with this research.

**Will I benefit by being in this research?**

There is no personal benefit to anyone participating in this research.

**Who will see the information about me?**

Because the research study examining information literacy within an established course curriculum, the educator associated with the course will have access to the notes and assessments. Information gained from the interview will be confidential. Only Mrs. Trebbe will see the information produced and no report or publications will use information that will identify your child.

**What will happen if I suffer any harm from this research?**

No special arrangements will be made for compensation or for payment for treatment solely because of (Child's name) participation in this research.

**Can I stop my participation in this study?**

(Child's Name)'s participation in this research is completely voluntary. (Child's Name) does not have to participate if he or she (choose one) does no want to and you can refuse to answer any question. Even if (Child's Name) begins the study, he or she (choose one) may quit at any time. If (Child's Name) does not want to participate or if he or she (choose one) decides to quit, he or she (choose one) will not lose any rights, benefits or services that would have otherwise been provided.

**Who can I contact if I have questions or problems?**

If you or your child has any questions about this study, please feel free to contact Mrs. Georgina Trebbe at 413.596.5198/ trebbe.g@husky.neu.edu, the person mainly responsible for the research. You or your child may also contact Dr. Kelly Conn at k.conn@neu.edu, the Principal Investigator.

**Who can I contact about my rights as a participant?**

If you or your child has any questions about his or her rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection. 960 Renaissance Park, Northeastern University, Boston MA 02115. Tel: 617.373.4588. Email: nregina@neu.edu. You may call anonymously if you wish.

**Will I be paid for my participation?**

Students will receive a $10 Dunkin Donuts Gift Card upon completion of the interview.

**Will it cost me anything to participate?**

There are no costs associated with participation in this study.

**Is there anything else I need to know?**

You must be at least 18 years old to participate unless your parent or guardian gives written permission.
Appendix H continued

I agree to have (Child’s Name) take part in this research.

<table>
<thead>
<tr>
<th>Parent or Guardian Signature agreeing to take part</th>
<th>Date</th>
</tr>
</thead>
</table>

Printed Name of the person above

<table>
<thead>
<tr>
<th>Signature of person who explained the study to the participant above and obtained consent</th>
<th>Date</th>
</tr>
</thead>
</table>

Printed name of person above

**Student Assent**

In the presence of his or her parent or guardian (Student Name) has consented to participate in the *Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program* study.  

Yes  

No

Student Signature  ____________________________________________________________
Appendix I

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe MS, M.Ed.
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program

Interview Protocol Form

Administrator Interview

Institution______________________________________________________________

Interviewee (Name and Title)______________________________________________

Interviewer:____________________________________________________________

Date:______________________________________________________________

Location of the Interview______________________________________________

Previously attained background information____________________________________

Part 1: Introductory Question Objectives (5-7) minutes. Stated by the researcher

Statement

You have been asked to participate in this interview because of the administrative experiences you bring and can share pertaining to the development of student information literacy (research) skills. The research focuses on how students experience information literacy development and knowledge gained through the support of the high school’s (library name) program. Through this study, the researcher hopes to gain insight how students experience the planning, searching, evaluating, selecting, and using information. My hope is to use your contributions in a manner that will identify ways in which the (library name) program can better support student information literacy (research) skills.

Because your responses are important, I want to capture all you say by recording our conversation. I will also be taking written notes during the interview. Your responses will be confidential and a pseudonym will be used if you are directly quoted from the transcripts. I will be the only ones privy to the recordings, which will be destroyed after they are transcribed. Transcriptions will only be identifiable by a corresponding pseudonym.

Previous to our meeting, you signed this consent form giving your permission about the study. At this point, do you have any questions?

Introduction: Interviewee background

Questions
- How many years have you been an administrator?
- How many years have you been an administrator within this district?
- When you a classroom educator, what subjects did you teach?
Appendix I continued

Part II Examining Experiences

Statement

I would like to hear about the administrative experiences you have had concerning secondary education students information inquiry (research) support. I will be asking you questions about your key experiences as you planned supports and worked directly classroom educators or other administrators. Be as detailed as you can. Remember there is no wrong or right; your responses are based on your experiences.

Questions:

Q1) Reflecting upon your administrative experiences, describe your expectations for student information literacy (research) skills and processes (activities).

Q2) Reflecting upon your administrative experiences, describe your role in supporting student information inquiry processes.
   Prompt- Describe what about this experiences supported improvement
   Prompt- Describe what about this experience was not helpful to support improvement

Q3) Reflecting upon your administrative experiences, describe your expectations for how educators support student information inquiry (research) processes (activities).

Q4) Reflecting upon your experiences, describe your role in supporting educator information literacy skills and awareness.

Q5) Describe your experiences with the library or (library name)
   Prompt- Describe what about this experiences was helpful to the school and/or district
   Prompt- Describe what about this experience was not helpful to the school and/or district

Q6) Thinking over your experiences with curriculum, describe student confidence in the ability to plan, evaluate, select, and use information.
   Prompt-describe an area your confidence has grown.
   Prompt-Describe an area your confidence has changed.

Q7) Thinking over your experiences, describe any supports that may positively add to educator and/or student experiences when engages in information inquiry.

Statement:

This concludes our formal interview. Do you have anything you would like to add?

Once your interview has been transcribed, I will be in contact to arrange a member check. The member check allows you to read over the transcription of your interview in order to clarify wording and meaning.

Thank you for your participation.
Appendix J

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES

Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe MS, M.Ed.
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary
Education Library Program

Interview Protocol Form

Educator Interview

Institution______________

Interviewee (Name and Title)______________________________

Interviewer:______________________________

Date:______________________________

Location of the Interview______________________________

Previously attained background information______________________________

Part I: Introductory Question Objectives (5-7) minutes. Stated by the researcher

Statement

You have been asked to participate in this interview because of the educator experiences
you bring and can share pertaining to the development of student information literacy skills (may
need replace with research skills if necessary). The research focuses on how students experience
information literacy development and knowledge gain through the support of the high school’s
(library name) programming. Through this study, the researcher hopes to gain insight how students
experience the planning, searching, selection, and using information. My hope is to use your
contributions in a manner that will identify ways in which the (library name) program can better
support student information literacy (research) skills.

Because your responses are important, I want to capture all you say by recording our
conversation. I will also be taking written notes during the interview. Your responses will be
confidential and a pseudonym will be used if you are directly quoted from the transcripts. I will be
the only ones privy to the recordings, which will be destroyed after they are transcribed.
Transcriptions will only be identifiable by a corresponding pseudonym.

Previous to our meeting, you signed this consent form giving your permission about the
study. At this point, do you have any questions?

Introduction: Interviewee background

Questions

-How many years have you been teaching?
-How many years have you been teaching at this high school?
-What department are you a part of?
-What classes are you teaching this semester?
Appendix J continued

Part II Examining Experiences

Statement
I would like to hear about the experiences you had after assigning and guiding an information inquiry assignment with students during the 2014-2015 semester one. I will be asking you questions about your key experiences during as you planned the assignment and assessments, and worked directly with students. Be as detailed as you can. Remember there is no wrong or right; your responses are based on your experiences.

Questions:
Q1) Reflecting upon your semester courses, describe students in a class and an information inquiry (research) lesson or unit you conducted with them, naming the key processes (activities) completed.
Q2) Reflecting upon this lesson or unit, describe the experiences you had as your students engaged in information inquiry (research) processes.
   Prompt- Describe what about this experiences was helpful.
   Prompt- Describe what about this experience was not helpful.
Q3) Reflecting upon this lesson, describe the experiences that influenced how students were expected to think about information.
   Prompt- Describe what about this experiences was helpful.
   Prompt- Describe what about this experience was not helpful.
Q4) Reflecting upon this lesson or unit, describe the experiences that you consider best supported how students prepare for engaging in information inquiry (research) processes.
   Prompt- Describe what about this experiences was helpful.
   Prompt- Describe what about this experience was not helpful.
Q5) Reflecting upon this lesson, describe the experiences that supported how students selected, evaluated, and used information.
   Prompt- Describe what about this experiences was helpful.
   Prompt- Describe what about this experience was not helpful.
Q6) Thinking over this lesson, describe how your students experienced the value of information.
   Prompt- Describe what about this experience was helpful.
   Prompt- Describe what about this experiences was not helpful.
Q7) Thinking over your experiences within this lesson, describe student confidence in their ability to plan, evaluate, select, and use information.
   Prompt-Describe an area student confidence has grown.
   Prompt-Describe an area student confidence has changed.
Q8) Thinking over your experiences with this lesson or unit, describe any (library name) supports that may positively add to educator and/or student experiences when engaged in information inquiry.

Statement:
This concludes our formal interview. Do you have anything you would like to add?
Once your interview has been transcribed, I will be in contact to arrange a member check. The member check allows you to read over the transcription of your interview in order to clarify wording and meaning.
Appendix K

NORTHEASTERN UNIVERSITY
COLLEGE OF PROFESSIONAL STUDIES
Principal Investigator; Dr. Kelly Conn, Student Researcher; Georgina Trebbe MS, M.Ed.
Project Title: Information Literacy as a Value: New Perspective for Developing a Secondary Education Library Program

Interview Protocol Form

Student Interview

Institution__________________________________________________________

Interviewee (Name and Title)_______________________________________

Interviewer:_______________________________________________________

Date:_____________________________________________________________

Location of the Interview___________________________________________

Previously attained background information ________________________________________________________________


Part I: Introductory Question Objectives (5-7) minutes. Stated by the researcher

Statement

You have been asked to participate in this interview because of the student experiences you can share pertaining to developing information literacy skills (may need replace with research skills if necessary). The research focuses on how students experience information literacy development and knowledge gain through the support of the high school’s (library name) programming. Through this study, the researcher hopes to gain insight how students experience the planning, searching, and using information. My hope is to use your contributions in a manner that will identify ways in which the (library name) program can better support student information literacy (research) skills.

Because your responses are important, I want to capture all you say by recording our conversation. I will also be taking written notes during the interview. Your responses will be confidential and a pseudonym will be used if you are directly quoted from the transcripts. I will be the only ones privy to the recordings, which will be destroyed after they are transcribed. Transcriptions will only be identifiable by a corresponding pseudonym.

Previous to our meeting, your parents (or guardian) signed this consent form giving you permission about the study. At this point, do you have any questions?

Introduction: Interviewee background

Questions

-What is your year of graduation from this high school?

-In which class have you completed one information inquiry (research) lesson or unit?
Appendix K continued

Part II Examining Experiences
Statement
I would like to hear about the experiences you had when you were assigned an information inquiry assignment. I will be asking you questions about your key experiences as you worked on the assignment. Be as detailed as you can. Remember there is no wrong or right; your responses are based on your experiences.

Questions:
Q1) Briefly describe an information inquiry (research) lesson or unit you were assigned, naming some of the key processes (activities) you completed.
Q2) Reflecting upon this lesson or unit, describe the experiences you had with the information inquiry (research) processes you engaged.
   Prompt: Describe what about these experiences was helpful.
   Prompt: Describe what about these experience was not helpful.

Q3) Reflecting upon this lesson, describe how your experience with these processes influenced your thoughts about information.
   Prompt: Describe what about your thinking was helpful, as you participated in the lesson.
   Prompt: Describe what about your thinking was not helpful, as you participated in the lesson.

Q4) Reflecting upon this lesson, describe the experiences and thoughts you had when preparing to engage in information inquiry (research) processes.
   Prompt: Describe what about this experiences was helpful.
   Prompt: Describe what about this experience was not helpful.

Q5) Reflecting upon this lesson, describe the experiences that supported your selection, evaluation, and use of information.
   Prompt: Describe what about these experiences was helpful.
   Prompt: Describe what about these experience was not helpful.

Q6) Thinking over this lesson, describe how would you understand the term value.
   Prompt: Describe if think about value was helpful in the lesson.
   Prompt: Describe if thinking about value not helpful in the lesson.

Q7) Thinking over your experiences within this lesson, describe your confidence in your ability to plan, evaluate, select, and use information.
   Prompt: Describe an area your confidence has grown.
   Prompt: Describe an area your confidence has changed.

Q8) Thinking over your experiences with this lesson, describe any additional (library name) supports that would have enhanced your understanding of information inquiry (research).

Statement:
This concludes our formal interview. Do you have anything you would like to add? Once your interview has been transcribed, I will be in contact to arrange a member check. The member check allows you to read over the transcription of your interview in order to clarify wording and meaning.
### Appendix L

#### First Round *In Vivo* Codes

<table>
<thead>
<tr>
<th>Codes Names</th>
<th>Initial Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessments</td>
<td>Notations referencing expectations and perspectives of student assessments</td>
</tr>
<tr>
<td>Collaboration with Librarian</td>
<td>Recognition of actually working or having expectations for working with the librarian or supportive materials found in the library</td>
</tr>
<tr>
<td>Curriculum</td>
<td>Notations about Western High School's Curriculum</td>
</tr>
<tr>
<td>District Program Support</td>
<td>Supports related to district level concepts or actions for a district library program</td>
</tr>
<tr>
<td>Education Pedagogy</td>
<td>Evidence of information literacy within methods and practices of teaching that relates directly to a theoretical concept</td>
</tr>
<tr>
<td>Educator Evaluation</td>
<td>Notations concerning Massachusetts Educator Evaluation System</td>
</tr>
<tr>
<td>Educator Guidance</td>
<td>Recognized methods students were guided by librarian and/ or educator</td>
</tr>
<tr>
<td>Learning Opportunity</td>
<td>Self-recognized actual and potential goals of a library program, knowledge or awareness gained within an individual, or individuals</td>
</tr>
<tr>
<td>Pre-Search</td>
<td>Actions to build background knowledge by conducting wide information searches, allowing discovery, which led to a thesis or essential question</td>
</tr>
<tr>
<td>Pre-Service Education</td>
<td>Academic training of information literacy to pre-service teachers</td>
</tr>
<tr>
<td>Program Challenges</td>
<td>Notations related to both school and district challenges for building a library program</td>
</tr>
<tr>
<td>Reading Analysis</td>
<td>Recognizes reading and/ or a specific reading method is necessary in research</td>
</tr>
<tr>
<td>Research Preparation</td>
<td>Actions that organize content and thinking in preparation for the locating specific information</td>
</tr>
<tr>
<td>Research Process</td>
<td>Recognized processes and steps of information literacy as noted by ACRL, AASL, Grafstein</td>
</tr>
<tr>
<td>Research Techniques &amp; Skills</td>
<td>Information literacy techniques an individual self-recognizes as own knowledge</td>
</tr>
<tr>
<td>Research Thinking and Processing</td>
<td>Evidence of metacognition, able to manipulate keywords, concepts, authors, and other indicators between various technology tools and information sources</td>
</tr>
<tr>
<td>Research Tools &amp; Sources</td>
<td>Evidence of information and communications technology tools or sources</td>
</tr>
<tr>
<td>Resource Evaluation</td>
<td>Evidence of the evaluation of resources for credibility and authenticity</td>
</tr>
<tr>
<td>Resource Relevancy</td>
<td>Evidence of selecting germane evidence between all possible resources</td>
</tr>
<tr>
<td>Resource Synthesis</td>
<td>Evidence of using several resources to as supportive evidence of a single point</td>
</tr>
<tr>
<td>Resource Types</td>
<td>Evidence of various resource types - primary, secondary, tertiary</td>
</tr>
<tr>
<td>School Culture</td>
<td>Notations related to the building and sustaining of a school culture</td>
</tr>
<tr>
<td>School Program Support</td>
<td>Supports related directly toward building Western High School's library program</td>
</tr>
<tr>
<td>Standards</td>
<td>References to Core Curriculum State Standards or information literacy standards</td>
</tr>
<tr>
<td>Time- As a Support</td>
<td>References to <em>Time</em> as it relates to a support</td>
</tr>
<tr>
<td>Time- As Assessment</td>
<td>Notations referencing <em>Time</em> as it relates to assessment</td>
</tr>
<tr>
<td>Value</td>
<td>Notations of any ethical or aesthetic decision making</td>
</tr>
<tr>
<td>Writing Application</td>
<td>Evidence that supports the application of resources to writing a finished project</td>
</tr>
</tbody>
</table>
Appendix M

Secondary *Focused* coded Themes

<table>
<thead>
<tr>
<th>Themes</th>
<th>Secondary Descriptions</th>
<th>First Round Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information Literacy</strong> as a combined set of guiding principals and learning objectives</td>
<td>First round codes placed into the Information Literacy Secondary theme reflect ACRL standards, AASL frameworks, and Grafstein's points of Information Literacy. The combination offers the librarian's understanding of information literacy guiding principals with educator learning objectives necessary to assess student growth. Codes placed here indicate information behaviors that directly relate to the Western High School's library program.</td>
<td>Research Process, Research Techniques &amp; Skills, Research Thinking and Processing, Pre-Search, Research Preparation, Research Tools and Sources, Reading Analysis, Resource Types, Resource Evaluation, Resource Relevance, Resource Synthesis, Writing Application</td>
</tr>
<tr>
<td><strong>Effectiveness of educator choices to apply information literacy teaching and learning</strong></td>
<td>Initial codes that have direct impact on student information literacy learning due to educator choices. These items are within the control of the educator. Many of these initial codes were co-coded with an information literacy code. However, most stood alone relating to exactly what the initial code intended.</td>
<td>Educator Pedagogy, Educator Guidance, Assessment, Time as an Assessment</td>
</tr>
<tr>
<td><strong>Outside administrative and agency influences on information literacy teaching and learning</strong></td>
<td>Initial codes that influence a school's overall information literacy learning either by administrative or agency decisions and mandates. Most of these codes stood alone as to how they influence. However, these codes are similar in directly influencing educators and generate change towards teaching effectiveness and student learning.</td>
<td>School Program Support, District Program Support, Time as a Support, Pre-Service Education, Curriculum, Standards, Educator Evaluation</td>
</tr>
<tr>
<td><strong>Creating a cognitive environment where information literacy can grow</strong></td>
<td>Initial codes that directly support the creation of an environment where deep thinking and reflection are encouraged. Collaboration, while seen as a part of educator practices, is placed in Cognitive Environment due to administrators and students recognition of its importance to the development of a community.</td>
<td>School Culture, Learning Opportunity, Values, Collaboration with Librarian</td>
</tr>
<tr>
<td><strong>Program Challenges</strong></td>
<td>This initial code remains a secondary code, as it directly shares the frustration of administrators, educators, and students for developing information literacy within the community.</td>
<td>Program Challenges</td>
</tr>
</tbody>
</table>
Appendix N

**Library Program Logical Model**

**Library Program Activities with Students: Logical Model Determining Student Information Literacy Growth**

**Library Program Activities with Educators: Logical Model Determining Student Information Literacy Growth**

**Library Program Activities with Administrators: Logical Model Determining Student Information Literacy Growth**

*Note: The logical model follows Tuckman’s (1987) program theory. The logical model determines information literacy values of library program through student experiences. Information literacy objects are those that emerged within the study.*
Appendix O

**Western High School's Library Budget**

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Books</td>
<td>$1,250.00</td>
</tr>
<tr>
<td>Periodicals and Databases</td>
<td>$10,126.00</td>
</tr>
<tr>
<td>Computer Supplies</td>
<td>$2,500.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$13,876.00</strong></td>
</tr>
</tbody>
</table>
### Appendix P

#### Library Program Logical Model Determining Student Information Literacy Growth

<table>
<thead>
<tr>
<th>Library Program Objective</th>
<th>Participant Experienced Activities</th>
<th>Student Experienced Outputs</th>
<th>Evaluation of Student Benefits</th>
<th>Information Literacy Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop information literate students who can sustain, transfer and recontextualize information literacy processes and skills</td>
<td><strong>Activities with Students</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instruction: Pre-searching, Preparing and organization research</td>
<td>Students prepared general questions to pre-search, developed a point to research, and connected research questions, thesis, and keywords in an organization creating a framework for thinking about information layout, outline, and overall project. Individually, students selected a learning research method they could use in a new context.</td>
<td>Students gained understanding for how planning supports successful research. Students valued their own work and discovering a point worth researching. Students chose their own method for organizing and grew confident in their ability to research.</td>
<td>Research Techniques and Skills, Research Thinking and Processing, Pre-Search, Research Preparation</td>
<td></td>
</tr>
<tr>
<td>Instruction: Databases, Search Engines and linking tools</td>
<td>Student's-facilitated advanced searches, used keywords, and alternative words, used critical thinking to link information and authors. Used reference lists to locate additional information.</td>
<td>Students appreciated the differences between databases and search engines and how each tool, source, and resources connect to each other. Confidence grew as how to effectively and efficiently use search tools.</td>
<td>Research Techniques and Skills, Research Thinking and Processing, Research Tools and Sources</td>
<td></td>
</tr>
</tbody>
</table>


| **Library Program Logical Model Determining Student Information Literacy Growth** |
|---------------------------------|-------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|
| **Library Program Objective**   | **Participant Experienced Activities**           | **Student Experienced Outputs**                 | **Evaluation of Student Benefits**                              |
|                                 |                                                 |                                                 | **Information Literacy Variables**                             |
| Instruction: Web Evaluation & Relevance | Students completed web-evaluation guides and selected authoritative information, and selected best supportive evidence. | Students learned to value what is authoritative and appreciated their responsibility in selecting the best work to represent their own projects | Research Thinking and Processing, Resource Evaluation, Resource Relevancy |
| Instruction: Formatting & Appreciation of other’s work | Students used guides offered to format work. Librarian provided editing support. Students developed an appreciation for their own work, an author's work, and a responsibility to each other. Beginnings of understanding synthesis of information through multiple use of evidence, in-text citations, and organization of information. | Students were not in fear of plagiarism. Students who formatted were followed guided expectations and began to understand giving another person credit is ethical. Students came to understand the value of the citation list as a reference for other researchers. | |

**Activities with Educators**

| **Collaboration: Lesson Objectives & Planning** | Students received student version of lesson, objectives, rubric, and calendar dates associated with the lesson. | Students understood what is expected of them at each step of the process, they began to see the "big idea" for researching done with integrity. | |
| **Collaboration: Class Co-Teaching, assessment, feedback** | Students responded to class and individual instruction, associated with anecdotes, appreciated assessments, and feedback. | Students felt supported and respected but realized that they still had a large responsibility to fulfill the steps | |
### Library Program Logical Model Determining Student Information Literacy Growth

<table>
<thead>
<tr>
<th>Library Program Objective</th>
<th>Participant Experienced Activities</th>
<th>Student Experienced Outputs</th>
<th>Evaluation of Student Benefits</th>
<th>Information Literacy Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activities with Administrators</strong></td>
<td>Library Advocate</td>
<td>Students see differences between educator methods for researching</td>
<td>Students selected their own patterns connecting the process and skills within information literacy</td>
<td></td>
</tr>
<tr>
<td>Support Educator Learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manage Budget</td>
<td>Students have access with subscription databases</td>
<td></td>
<td>Students valued the information that is purchased vs. open</td>
<td></td>
</tr>
<tr>
<td><strong>Print &amp; Online Support</strong></td>
<td>Preparation, Web Evaluation and Relevance Guide</td>
<td>Student used guides for both assessment grades and continued practice.</td>
<td>Students acted independently, recognized and located support each determined as necessary</td>
<td></td>
</tr>
<tr>
<td>Formatting Support</td>
<td>Students used sample papers, AB, and citation worksheets.</td>
<td></td>
<td>Students formatted and asked for formatting assistance</td>
<td></td>
</tr>
</tbody>
</table>

Note. The logical model follows Bickman's (1987) program theory. The logical model determines information literacy values of library program of student experiences, as determined by administrator, educators, and students. Information literacy objects are those that emerged within the study.
Appendix Q

Information Literacy Value Model

<table>
<thead>
<tr>
<th>Library Program Activities with Students</th>
<th>Research Thinking and Processing, Research Techniques and Skills</th>
<th>Educator Guidance / Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Search</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Situation</td>
<td>Need information on a topic</td>
</tr>
<tr>
<td></td>
<td>Critically Think</td>
<td>Previous Knowledge</td>
</tr>
<tr>
<td></td>
<td>Value Set/ Consequences/ Choice</td>
<td>Independent Choice/ Discovery</td>
</tr>
<tr>
<td></td>
<td>Action</td>
<td>Assessments/ notes, citations, sharing</td>
</tr>
<tr>
<td></td>
<td>Rethink-Repeat or Continue</td>
<td></td>
</tr>
<tr>
<td>Research Preparation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Situation</td>
<td>Narrowing topic, perspective</td>
</tr>
<tr>
<td></td>
<td>Critically Think</td>
<td>Discovery direction-Thesis</td>
</tr>
<tr>
<td></td>
<td>Value Set/ Consequences/ Choice</td>
<td>Developing clear questions</td>
</tr>
<tr>
<td></td>
<td>Action</td>
<td>Assessments/ notes, citation, sharing</td>
</tr>
<tr>
<td></td>
<td>Rethink-Repeat or Continue</td>
<td></td>
</tr>
<tr>
<td>Research Tools and Sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Situation</td>
<td>Need additional information</td>
</tr>
<tr>
<td></td>
<td>Critically Think</td>
<td>Tool/ Source for Best Information</td>
</tr>
<tr>
<td></td>
<td>Value Set/ Consequences/ Choice</td>
<td>Going beyond search engines</td>
</tr>
<tr>
<td></td>
<td>Action</td>
<td>Assessments/ notes</td>
</tr>
<tr>
<td></td>
<td>Rethink-Repeat or Continue</td>
<td></td>
</tr>
<tr>
<td>Resource Evaluation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Situation</td>
<td>Need to insure credibility</td>
</tr>
<tr>
<td></td>
<td>Critically Think</td>
<td>Nuances of credible resources</td>
</tr>
<tr>
<td></td>
<td>Value Set/ Consequences/ Choice</td>
<td>How will &quot;my work&quot; be reflected</td>
</tr>
<tr>
<td></td>
<td>Action</td>
<td>Assessments/ Web eval, share, cite</td>
</tr>
<tr>
<td></td>
<td>Rethink-Repeat or Continue</td>
<td></td>
</tr>
<tr>
<td>Resource Relevancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Situation</td>
<td>Resource supports thesis</td>
</tr>
<tr>
<td></td>
<td>Critically Think</td>
<td>Does Resource answer research question</td>
</tr>
<tr>
<td></td>
<td>Value Set/ Consequences/ Choice</td>
<td>How will &quot;my work&quot; be reflected</td>
</tr>
<tr>
<td></td>
<td>Action</td>
<td>Assessments/ Annotations, share, notes</td>
</tr>
<tr>
<td></td>
<td>Rethink-Repeat or Continue</td>
<td></td>
</tr>
</tbody>
</table>