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Leadership through Middle School Library Programming:

Impact on Latino Student Achievement

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in

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by

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The Dissertation of Jeanne Vivian Nelson is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

Chair

University of California, San Diego

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2009

DEDICATION

This dissertation research study is dedicated to all the children who have used libraries that I have helped bring to life; to the special education students, who lost themselves in books and became whomever they dreamed of being; to the lonely and timid students who found role models and courage between the covers of a book; to the children for whom stories and facts opened doors to allow their imagination free flight; to students who sought only a safe place to be and found books a pleasant surprise; to the children who wanted someone to listen to them and, because they were heard, found themselves building self confidence and self esteem as they helped manage the library.

Thank you to the seven other members of Cohort 2, for being always supportive, listening, and providing new ways of seeing the school library: Kelly Burke, Shaun Travers, Edwina Welch, Emelyn dela Pena, Isaac Estrada, Vanessa, Karwan and Narciso Iglesias.

Thank you also to my good friends who have provided support and encouragement along the way

This dissertation is also dedicated to my family who always knew that gifts equal books for any special event, and especially my husband, Jim.

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ABSTRACT OF THE DISSERTATION

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The No Child Left Behind (NCLB) emphasis on high-stakes testing and accountability mandates that all students achieve at a proficient level on standardized tests or their school/district will face sanctions. Disaggregation of data by ethnicity has determined an achievement gap between groups of students, a gap that is not

lessening as all students increase in academic achievement. In response, educators have implemented various intervention programs. Services and programming available through the school library are noticeably absent from these intervention programs, even though a number of large-scale studies indicate that library services have a positive and significant impact on student achievement. This mixed-methods study proposed a new theoretical model for viewing the school library. Staffing, access, resources and services provided through middle school libraries in California, were compared with academic outcomes for white and Latino student populations. Data from the California Assessment Test, Sixth Edition (CAT/6) and the California State Library Survey were compiled and compared with interviews of certificated middle school teacher librarians. The study determined that there was a significant positive relationship between the level of professional library staffing and student CAT/6 reading outcomes. The data also indicate that at higher performing schools, a higher percentage of library services and resources are provided for both Latino and white students. Implications for library leadership, policy and practice are discussed, with suggestions for different models of information literacy instruction.

CHAPTER 1: STATEMENT OF THE PROBLEM

There is a persistent achievement gap in literacy between Latino students and their white counterparts in California. Test scores indicate that only 32% of Latino students scored above the 50th percentile in reading on the California Assessment Test, 6th edition, in the 2006-07 school year (California Department of Education, 2007). A growing body of studies provides evidence that school library resources with trained staffing contribute to student academic achievement. Other studies identify the need for culturally-responsive teaching strategies for students from Latino and other backgrounds. However, there is a lack of research on what relationship there might be between school library resources and the achievement of struggling groups of students.

This study compared school library programs in majority Latino middle schools with the school library programs at majority white middle schools using seventh grade standardized assessment reading scores. The study identified promising practices used by teacher librarians in high-service middle schools that met the learning needs of Latino students to support increased academic achievement.

To better understand how the teacher librarian might assume a greater leadership role in the overall school plan to increase student achievement, especially for Latino students, some background on the changes in 1.) political climate, 2.) demographics and 3.) information needs is provided. Next, the purpose of the study is presented, including the research questions, hypotheses and significance of the study, followed by definitions of key terms.

Background

The school library has always been viewed as a quiet, studious environment where students can interact with books, presumably expanding their academic knowledge base under the watchful eye of the sweet but stern "shushing" librarian. When print resources were the only format available and students had limited access to books, this model was effective for enhancing the student learning environment. School libraries today offer programs and resources far beyond print alone. Nevertheless, the old image has persisted in recent years while the school library's perceived value in a changing educational environment has decreased, as indicated by reduced staffing, dwindling budgets and limited time allocated by teachers for using the library for class projects. At the same time, students are now expected to access, evaluate and use information proficiently. In this task, they are confronted with the veritable tsunami of information now available through digital and print resources (Brouwer, 1997; Casner-Lotto, & Benner, 2006; Partnership for 21st Century Skills, 2006).

This raises the question, what has happened to the role of the school library as a key component in the educational program? The answer may be found by looking at three major changes that have created what may be termed "a perfect storm" in the educational climate, similar in force to the natural storms described in the book by that title (Junger, 2007). These changes are: 1) the political environment within which education must exist; 2) changing demographics; and 3) the rapid evolution of information formats, include digital sources. Each of these is discussed in turn.

Changing Political Climate

The political climate in education changed with the passage of No Child Left Behind (NCLB) legislation in 2002. NCLB mandates standards-based testing and accountability, the disaggregation and publication of school test scores by major sub-groups to measure adequate yearly progress (AYP), sanctions for schools whose students do not achieve a minimum level of proficiency, and a resultant focus on teaching to the standards and hence, to the test. Specifically, NCLB requires that all demographic groups of students show gains on assessments based upon academic content standards. Schools must meet AYP goals for these demographic subgroups or face sanctions.

As a result of NCLB and the increased focus on test scores, schools began to provide intervention programs to help all students increase their level of achievement. As a consequence of this focus on intervention programs and assessments, there has been a reduction of support for programs which are not tested, which may include the school library program (Meier & Wood, 2004; Rothstein & Jacobsen, 2006; Sunderman, Kim, & Orfield, 2005). In many districts this has been evidenced through concurrent reductions in library staffing and budget, further reducing library program quality and visibility. It is not surprising, then, when teachers seek resources for students to meet academic challenges, they may not value the resources of the school library as part of an overall improvement program.

However, NCLB includes a funding component for school libraries through the Improving Literacy Through School Libraries program, indicating that library staffing and resources are considered a necessary component of the NCLB reform initiative.

Michie (2005) adds, "The purpose of the program is to improve the literacy skills and academic achievement of students by providing them with increased access to up-to-date school library materials, a well-equipped, technologically advanced school library media center, and well-trained, professionally certified school library media specialists" (Michie, 2005, p.1).

Despite this indicator of the importance of library resources, the standardized tests mandated by NCLB focus on student achievement in the basic subject areas and do not explicitly measure skills that students traditionally learned through library instruction. These skills include locating print and digital information resources and using these resources effectively to communicate ideas. The unintended consequence is that skills not directly tested may not be perceived as valuable by teachers and administrators and may not be taught. (Rothstein & Jacobsen, 2006; Sunderman, Kim, & Orfield, 2005).

Changing Demographics

The second major change that has impacted the educational climate is ethnic and socioeconomic student demographics. California and other states have experienced an influx of students representing varying ethnicities who have brought with them their languages, customs and needs, increasing the challenge of providing equity in educational opportunity. Especially noteworthy is the increase in the Latino population who are the second largest minority group in the United States, comprising 9% of the total population (U.S. Census Bureau, 2001).

Meeting the unique educational needs of Latino students has become a focus for many California school districts. Latinos are a culturally, demographically and

geographically diverse population that includes immigrants from Mexico, Puerto Rico, Cuba, Central America, and other Spanish-speaking countries. Between 1980 and 1990, the Latino population in the United States grew by 53%, and about half of this growth was due to immigration. (U.S. Census Bureau, 2006). In California, more than half of the students in public schools represent minority ethnicities (California Department of Education, 2007) and it is projected that, by 2009, 51% of the students in California will be Latino (State of California, Department of Finance, 2003).

Changes have also taken place within the Latino population. The rate of immigration has slowed and the second generation of Latino youngsters, accounting for 28% of the Latino population, is attending school. Third or higher generation Latinos make up 32% of the Latino population (Suro & Passel, 2003). For students who are first generation immigrants, success in school is dependent on a number of variables, including age of arrival in the United States, country of origin, new residence location and reasons for immigration (Portes & Zhou, 1993). The experience of second and third generation students differs from that of the immigrants, and is impacted by geographic and economic circumstances.

Changing Information Needs

The changing format of information is the third significant force in this perfect storm, one that might have been expected to increase the visibility and academic value of the library, but may have had the opposite effect. The school library has evolved from a repository of carefully-selected printed material into a conduit to information in many formats, providing opportunities for students to access and interact with both print materials and with the greater world of digital information.

This has been a dramatic change, and the role and title of the school librarian have also changed to include increased teaching responsibilities and knowledge of digital resources. This changed role has not been embraced by all teacher librarians and even when practitioners have changed, the school community in many instances is unaware of how school library resources and the teacher librarian's role have evolved. Indeed, principals, teachers and school library personnel differ in their perception of the role or value of the school library (Hambleton & Wilkinson, 2001). As a result, many in the academic community and most educational intervention programs bypass mentioning the services provided through the school library (Secada, Chavez-Chavez, Garcia, Munoz, Oakes, Santiago-Santiago, & Slavin, 1998; Adam, 2002; Montecel, 2004; Valverde, 2004). However, a positive relationship between professional school library staffing and increased reading achievement has been found in sixteen studies (Lance, Rodney, & Hamilton-Pennell, 1999, 2000; 2001, 2002, 2003, 2005; Baxter, 2003; Burgin & Bracey, 2003; Loertscher, 2003; Miller, Want, & Whitacre, 2003; Todd, Kuhlthau, & OELMA, 2004; Sinclair-Tarr & Tarr, 2004; Smith, 2001, 2006).

Purpose of the Study

To date, a review of the literature determined that there has been limited research on the relationship between Latino student achievement and academic support provided through the school. Cultural differences, barriers to information and technology access, and instructional strategies that may not support the needs of Latino students are all possible contributing factors to the current achievement gap between Latino students and their white counterparts. Latino students drop out at

higher percentages than other groups, with a critical period of vulnerability occurring in middle school (Cooper, Denner, & Lopez, 1999; Oliva & Nora, 2004). Therefore, a middle school student population should provide richer data due to the larger number of students still in school. This study compared predominantly Latino and predominantly white California middle schools to determine what resources and instructional strategies are being implemented through the school library to meet student needs, and how successful the predominantly Latino middle schools may be in supporting student academic achievement.

For this study, a mixed-methods approach was used, employing a quantitative phase and a qualitative phase, conducted sequentially (Johnson & Onwuegbuzue, 2004). A controlled experiment was not feasible, and an historical study was not appropriate because demographics, technology and teaching strategies have changed significantly in recent years. The mixed method research provides the advantages of triangulation of data, provision of complementary information and more opportunity to explore paradoxes and contradictions.

Research Questions

The following research questions guided this study:

- What difference is there, if any, between school library access, services and resources at middle schools with 70% or higher Latino student populations, in comparison to middle schools with 70% or higher white student populations, in California?
- What impact, if any, do school library access, services and resources have on middle school Latino students' reading achievement?

- What library services or resources may be most effective in supporting middle school Latino student academic achievement?

Hypotheses

From the review of the literature, the following hypotheses were proposed:

- Hypothesis 1: School library access and resources, with services provided by a certificated school librarian staffing, show a positive relationship to middle school Latino student achievement, as reflected in standardized reading scores.
- Hypothesis 2: Strategies implemented through the school library to increase student achievement differ between middle schools that serve primarily white students and those that serve primarily Latino students.

Significance of the Study

Sixteen recent studies indicate that school library resources and services can have a significant positive impact on student achievement (Baxter & Smalley, 2003; Burgin & Bracy, 2003; Lance, Hamilton-Pennell, & Rodney, 1999, 2000; Lance, Rodney, & Hamilton-Pennell, 1999, 2005; Rodney, Lance, & Hamilton-Pennell, 2002, 2003; Sinclair-Tarr & Tarr, 2004; Smith, 2001; and Wisconsin Department of Public Instruction, 2006). These studies indicated that professional teacher librarian staffing, collaboration between the teacher librarian and teaching staff, more staffing hours, the number of books circulated, size of the library collection, and access to licensed databases through the school library network correlate significantly with higher student test scores.

Previous studies have not examined the potential effects of K-12 school library services for students of varying ethnic backgrounds, including Latino students. Latino

students are the second largest ethnic group in California (State of California, 2004). The persistence of an achievement gap as evidenced by standardized test results indicates that Latinos experience academic challenges in an educational setting where the norms of language, cultural literacy, and learning styles may be different from their cultural background and experience. Intervention programs such as Advancement Via Individual Determination (AVID) are employed to meet the needs of underachieving students, but none of those most widely used incorporates the services and resources of the school library. If this study provides evidence that school library programs improve the academic performance of Latino students, then this finding could alter the current paradigm for improving academic achievement among Latino students.

Taking advantage of the leadership role and instructional services provided through the library program also means cost savings—this is a program already in place. As Secada notes, "Because existing resources need to be directed more strategically, schools and districts should carefully evaluate their programs and engage in continuous improvement of their best practices" (Secada et al., 1998, p. 46).

Definition of Terms

This study looks at school libraries and Latino student achievement in California, utilizing California-specific datasets. It may be helpful to define some relevant terms:

Access is defined for this study as the amount of time in which students may use the library, measured by hours of operation, staffing levels, and scheduling.

Scheduling may be fixed, where students have a regular set library time, or flexible and scheduled according to need.

The *"California School Library Survey"* is an annual online survey conducted of all California school libraries, focusing on services, resources, and funding. Survey responses are reviewed by California Department of Education (CDE) School Library Program staff for accuracy and 10% of the responses are verified through contact with the reporting agencies. Attention is given to responses that vary significantly from prior years. Each year the survey is completed for the prior year.

The California Assessment Test, 6th Edition (CAT/6) is a norm-referenced test administered to California students in reading, language arts, math, and spelling, at third and seventh grades only. Results are reported by noting the number of students at and above specific percentiles. After 2008, this test will no longer be administered.

The *"California Standards Test"* (CST) is a criterion referenced test in English/language arts and mathematics, administered in grades three and seven and scored at Advanced, Proficient, Basic, Below Basic and Far Below Basic. For this study, only results from the English/language arts test for seventh grade will be used.

"Collaboration" in the context of the school library evolved from the early concept of the school librarian working with teachers to select library materials that would support the curriculum. Collaboration has been expanded over time to include working with classroom teachers "to plan, conduct, and evaluate learning activities that incorporate information literacy" (American Association of School Librarians, 1998, p. 50). Collaboration also includes the teacher librarian working with teachers,

administrators and parents to build effective library collections and implement programs that promote information access and use.

Information is defined for this study using Buckland's (1991) concepts of Information-as-Thing, Information-as-Process, and Information-as-Knowledge. In the context of the library, "… information retrieval systems do not retrieve information: they retrieve physical things, such as signals, data, documents. These physical things *may*, when perceived by somebody with appropriate prior knowledge and suitable cognitive skills, contribute toward a change or increase in that person's knowledge" (Buckland, 1988, p.115).

"Information Literacy" was first used by Zurkowski (1974) and has been defined and redefined in subsequent years. By 1998, the definition evolved as "…the ability to access, use, and evaluate information in all sources and formats…" (American Association of School Librarians, 1998, p. 64). A current concise definition of information literacy is provided by the Association of College and Research Libraries: "Information literacy is 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'" (American Library Association, 2006).

The terms "Hispanic" and "Latino" are used interchangeably in the literature. For purposes of this study, "*Latino"* will be used and the self-definition of students on assessments used by the California Department of Education will serve as the criterion for inclusion. "Hispanic" is generally used in the eastern United States, while the western part of the country commonly uses "Latino" (Office of Management and Budget, 1997). Students who are defined as "Latino" or "Hispanic" are not a

homogeneous group and the official United States definition of “Hispanic” refers to people whose country of origin are Spain, Mexico, Puerto Rico, Cuba, Central or South America, or other Hispanic/Latino area, regardless of race. It includes both immigrants and those born in the United States. These represent a span of socioeconomic levels and educational attainment.

“Library resources” include print and digital materials; materials in varying formats and languages, including audio versions; and materials reflecting different interest and ability levels. Digital materials may include online subscription databases, online digital information via the Internet, and remote access to resources and databases including the library catalog, from home or from the classroom.

“*Library Services”* for the purposes of this study are only those services that actively impact students. These include formal instruction in using library resources; informal instruction and assistance in using resources as needed; instruction in evaluating and using Internet resources; and collaboration with teachers on lessons utilizing library resources.

For this study, “*teacher librarian*” will be used to mean a teacher with a teaching credential and a state-issued library certificate. The nomenclature used for a state certified school librarian with a teaching credential varies from state to state. In California, the designation has been “Library Media Teacher,” a term that has recently been changed to “Teacher Librarian” (California Commission on Teacher Credentialing, 2007). In many states, the term “Media Specialist” is used, as is “School Librarian.”

"*Paraprofessional*" will be used to designate persons working in a school library without a teaching credential or library certificate. Someone with a two-year Associate of Arts degree in a Library Technology program is still considered a paraprofessional.

Understanding the duties of the teacher librarian is important to this study and a brief overview will be offered here. The California Commission on Teacher Credentialing (2007) provides a list of duties for the holder of a Teacher Librarian Services Credential. This person will:

- Instruct pupils in the choice and use of library materials
- Plan and coordinate school library programs with the instructional programs of a school district
- Select materials for school and district libraries
- Coordinate or supervise library programs at the school district or county level
- Plan and conduct a course of instruction for those pupils who assist in the operation of school libraries
- Supervise classified personnel assigned to school library duties
- Develop procedures for and management of the school and district libraries

"*School library*," as defined by the Library of California Act, California Education Code 18810(u) "…means a library that is established to support the curriculum-related research and instructional reading needs of pupils and teachers and provides the collections, related equipment, and instructional services of a staff for an

elementary or secondary school" (California Education Code, 2004). This was expanded by the California Library Services Act, California Education Code 18710(u), to mean "…. an organized collection of printed and audiovisual materials that satisfies all of the following criteria: (1) Is administered as a unit; (2) Is located in a designated place; (3) Makes printed, audiovisual, and other materials as well as necessary equipment and services of a staff accessible to elementary and secondary school pupils and teachers" (California Education Code, 2004).

Some additional terms will be used in this study, and for clarity they are defined here:

Culture is defined as the mental perceptions of how the environment is interpreted, what actions are acceptable and what are not, who participates in social interactions and the rules governing such interactions. (Reese & Gallimore, 2000). Cultural groups are not homogeneous in their beliefs and practices, but a shared cultural heritage provides a common basis for behavior.

Socialization comes from socialize, in this case "to adapt to social needs or uses" (Webster, p. 828). Dewey (1944) stated that "Any education given by a group tends to socialize its members, but the quality of and value of the socialization depends upon the habits and aims of the group" (pp. 95-96).

Acculturation is defined as "a process of intercultural borrowing between diverse peoples resulting in new and blended patterns" (Webster, p.6). Acculturation is further defined as the contact between different cultural groups that results in changes in the cultural patterns, behavior, or cognitive domains of one or both (Berry, 1989; Page, 2006).

Assimilation is taken from assimilate, “to absorb into the cultural tradition of a population or group” (Webster, p. 53). Berry (2006) indicates that assimilation is desirable when there is little interest in maintaining the culture of origin, combined with motivation to interact with the host society. Studies of immigrants focus on assimilation, and this is important because according to Berry’s definition, assimilation and acculturation are individual choices, while socialization is perceived as the role of education (Dewey, 1944).

Because this study compares ethnicities as they engage the services of the school library, the term “*white*” was used and the self-definition of students on assessments used by the California Department of Education served as the criterion for inclusion.

This study is divided into five chapters, followed by a list of references and back matter. Chapter One provided an introduction to the study and a discussion of the changes that have impacted education, and hence school libraries, in recent years. In Chapter Two, a theoretical basis for the study is proposed and the school library is placed in the overlapping spheres of information, education, and culture. A review of the literature focuses on these three areas and provides supporting evidence that there is a relationship between student academic outcomes, library services and library resources. The research design is described in Chapter Three, including the data-gathering instruments used and the procedures followed. In Chapter Four, the findings are described. Chapter Five provides a summary of the study, conclusions, and recommendations for further research.

CHAPTER 2: REVIEW OF THE LITERATURE

To determine the education community's awareness of library services and resources and their perceived value as part of programs targeting student academic achievement, a review of the literature initially focused on articles written outside the purview of professional school library practice and no earlier than 1995. In this body of literature, there are numerous articles about academic intervention programs and strategies to meet the needs of underachieving and at risk students, but there is no mention of the school library or library staff. When the review was expanded to include school library practitioner journals and other pertinent publications, including government studies, the literature provided much richer information.

In this chapter, a theoretical framework has been proposed to guide the study. The teacher librarian role has been placed in an historical context, followed by a review of literature on the relationship between student outcomes and library services. Next, barriers to academic content acquisition by Latino students is considered, followed by a review of specific school library offerings including access, resources and instruction that may support learning for Latino middle school student populations.

Theoretical Basis

The school library resides where three spheres of influence overlap: education, information and culture, as illustrated in Figure 1. Each of these spheres will be considered individually in terms of their philosophical basis and some underlying theories, leading to a proposal for a relational model for the area of overlap, the school library program.

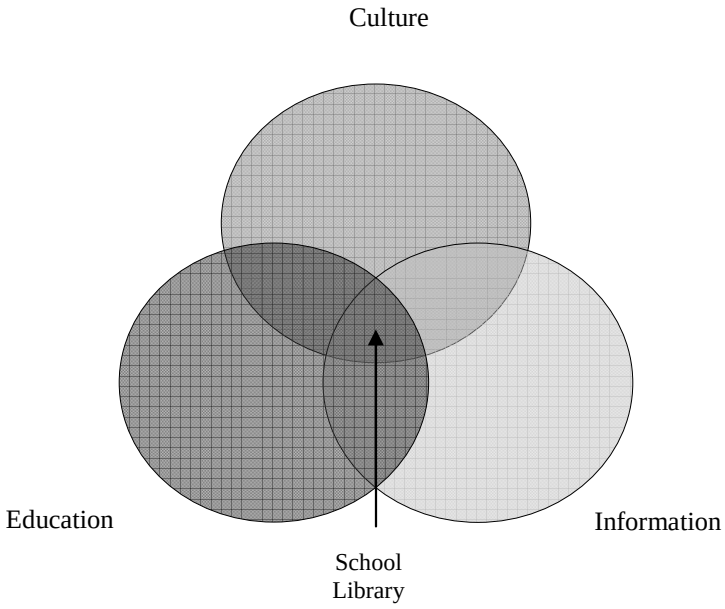

Figure 1

Overlapping spheres illustrate the relationship between education, information, culture and the school library

Sphere of Education

The first sphere to be considered is education, where Dewey's Philosophy of Education continues to provide a framework for educational thought. Dewey (1944) described learning as an individual process through which the student learns by active engagement, followed by reflection, seeking connections and developing an understanding of what may be transferred to other situations. Later theorists expanded on Dewey's work, including Kelly (1963) who developed a Personal Construct Theory that suggests that individuals formulate patterns to make sense out of the world, that

these constructs are constantly revised and new constructs formed, and that all learning takes place this way. However, according to Kelly, constructs are not easily discarded, and the process of forming new constructs involves a series of psychological changes. Another psychologist, Bruner (1973), focused his research on the nature of knowledge, the learner, and the knowledge getting process, confirming that learning is actively selecting information and creating personal understanding. More recently, Vygotsky (1978) viewed learning as a social process that takes new information and turns it into internal knowledge through a language- based cultural process. These theorists provide the basis for understanding how students use information to create knowledge, building on prior experience and learning.

Sphere of Information

The second sphere that impacts the school library is that of information. One of the teacher librarian's roles has been that of an information manager. This role has become more complex as, in recent years, information has been transformed and expanded dramatically in both medium and access. This change is reflected by the relatively recently proposed Philosophy of Information (Floridi, 2002).

Floridi defines the Philosophy of Information as being "the philosophical field concerned with (a) critical investigation of the conceptual nature and basic principles of information, including its dynamics, utilization and sciences, and (b) the elaboration and application of information-theoretic and computational methodologies to philosophical problems" (Floridi, 2002, p. 43). Within this framework, Floridi defines library and information science as applied Philosophy of Information, and further clarifies three layers: 1) libraries, their contents and services; 2) the science of

librarianship; and 3) the foundational and philosophical basis (Floridi, 2004, p. 659). This philosophical basis is reflected in the role of the teacher librarian as information manager.

Because information has changed so dramatically in recent years, it may be helpful to unpack the theoretical concept of information, beginning with Shannon's Theory of Information (Shannon, 1948). This theory was proposed to explain digital information transmission, and has been used as a basis for later theories in diverse fields. For purposes of this study, Shannon's theory provides a basis for understanding the transmission of information. Figure 2 shows Shannon's basic conceptualization.

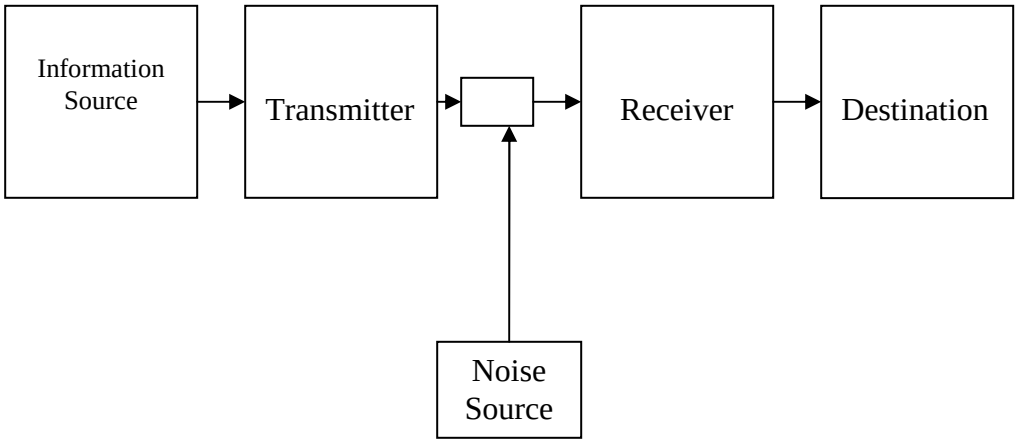

Figure 2

Shannon's Information Theory Model

In Figure 2, the message comes from an information source, such as a human voice, goes through a transmitter such as a microphone that converts it to a signal (data), is carried over a channel to a receiver which transforms the signal back into

audio and relays it to the destination. The coded message may encounter interference (noise) during transmission, resulting in different message than that which was sent. There is also a limit to the capacity of the channel, and the rate of data may not exceed this limit. Shannon's Information Theory was not intended to be used outside the world of mathematics and computer programming. It does not address the cognitive aspects of information processing or the sources of the information transmitted. Nevertheless, it provides a framework on which to build a model for this study.

Three elements of Shannon's theory are the structural basis for creating a model of interactions in the school library. The first element is the information source and how information is conveyed through a transmitter. Buckland (1991) described this as Information-as-thing, and indicated that it must be age appropriate, culturally relevant, and linguistically accessible.

The second element, the conduit between the transmitter and receiver, represents information access for the learner. The amount of information available, the format, and access to the information are defined by Buckland as Information-as-Process, the intermediary between Information-as-Thing and Information-as-Knowledge. Key to understanding how effective this transmission of information is what Shannon called "noise" which is the interference that may result in the received signal being different than the signal sent. For this study, "noise" represents barriers to comprehending information.

While many things provide information, if an object or text or recording cannot be accessed, it is not information. Buckland (1991) defines four barriers to access: 1) indicative access, also called intellectual access, which is determining what

source would provide useful information for a particular information need; 2) physical access to the needed information; 3) linguistic access, finding information in a language or format that the seeker understands, and 4) conceptual access, meaning the level of content sophistication and prior knowledge required for understanding (Buckland, 1988, p. 118-119).

The third element in Shannon's model, the receiver, makes sense of the information and it becomes Buckland's Information-as-Knowledge. Meadow and Yuan (1997), proposed the relationship between data, information and knowledge as a continuum. They further defined data as a set of symbols, information as a set of symbols with meaning for the recipient, and knowledge as the "accumulation and integration of information received and processed by a recipient" (Meadow & Yuan, 1997, p. 701).

In the school library, this process through which information becomes knowledge takes place as the learner accesses information, moving through a series of steps to achieve personal meaning and therefore knowledge. How this occurs was described in a grounded theory, the Information Search Process, developed by Kuhlthau (2004). The Information Search Process is based on the theories of Bruner, Dewey, and Kelly and developed through research with high school and college students. The Information Search Process consists of six sequential stages: task initiation, topic selection, prefocus exploration, focus formulation, information collection, and search closure. Each stage is characterized by thoughts, feelings, actions, strategies, and mood. (Kuhlthau, 2004). The Information Search Process

provides one of the frameworks used in many school libraries as a basis for research instruction.

Kuhlthau also proposed an Uncertainty Principle, addressing the affective aspect of the information process. Information seekers in Kuhlthau's studies went through several stages of uncertainty and anxiety during the Information Search Process, and through a shift in knowledge state, developed feelings of increased confidence. At each stage, intervention by the teacher librarian is indicated to scaffold successful completion of the task, underscoring the key role of certificated library staffing. This concept of intervention at each stage is based on Vygotsky's (1978) zone of proximal development, the identification of the time or place where intervention is most effective.

This information processing model does not address the third sphere, that of cultural context, though Buckland (1991) touches on this with linguistic and conceptual barriers to access. An empirical study by Bruce (1997), based on Kuhlthau's work, indicated that the process of seeking information may be more relational than that described in the Information Search Process. According to Bruce, the process includes "varying conceptions of experiences, defined in terms of relations between people and aspects of the world." (Bruce, 1997, p.16) In other words, cultural context impacts the information seeking process, and that aspect will be considered next.

Sphere of Culture

The philosophy of culture is defined as "the use of logical and scientific methods to explain the existence of human culture in general, the differences between

specific human cultures, as well as the existence of particular cultural practices" (Clarke, 2008). Within this philosophical setting, two theories will contribute to the overarching framework for this study. The first theory is Bourdieu's cultural capital theory (Bourdieu, 1991). Students' cultural perspectives, experience, educational expectations, and language fluency create cultural capital that may not be congruent with the demands of the larger culture. This may pose challenges in terms of both informational materials and pedagogy. Culture, according to Bourdieu, impacts the ways in which students create knowledge.

The second theory is Multicultural Education Theory (Banks, 1997), where the focus is on knowledge construction, integrating social action and prejudice reduction into academic practice.

Figure 3 shows the relationship between data, information and knowledge in the context of the school library. The left side of the diagram represents the sphere of information, the sources and formats for data. The right side represents the educational process, where the learner uses information as a basis for creating knowledge. The sphere of culture is represented by Access, and incorporates Buckland's access barriers and Bourdieu's cultural capital theory as bases. The role of the teacher librarian, employing the Information Search Process (ISP) and other pedagogy as conductive strategies, is illustrated at the top of the diagram.

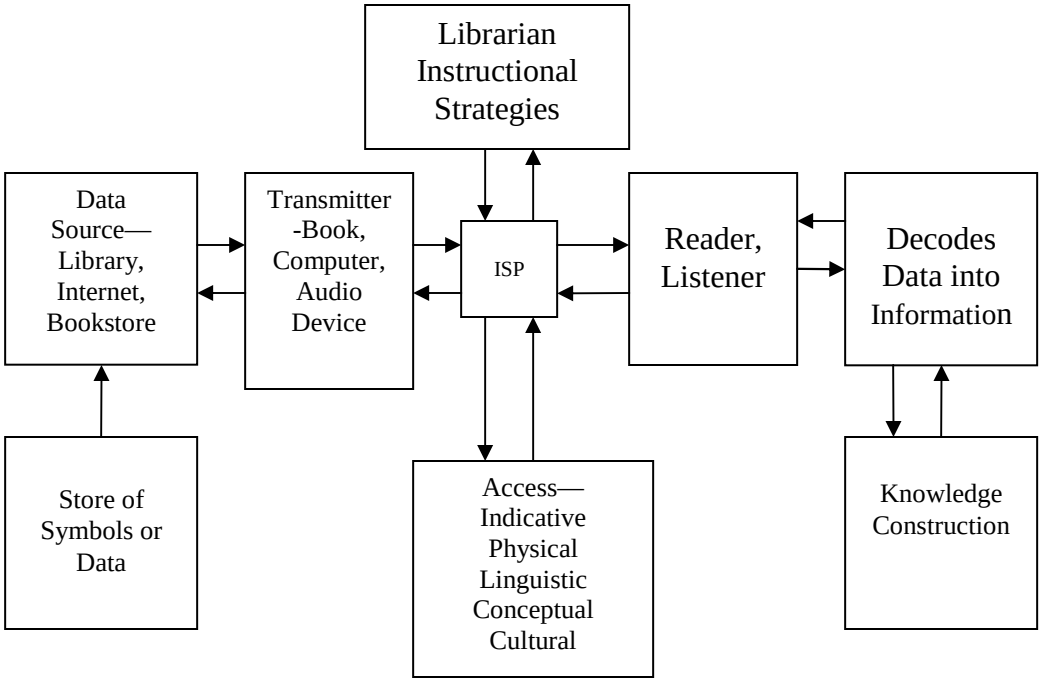

Figure 3

Model for the relationship between data, information and knowledge in the context of the school library, adapted from Meadow and Yuan (1997) and incorporating access (Buckland, 1991; Bourdieu, 1991; Banks, 1997) and Information Search Process (ISP) (Kuhlthau, 2004)

This model provides a new theoretical lens through which the context of the school library and the role of the teacher librarian may be viewed. In summary, the school library occupies a space bounded by the overlapping spheres of information, education, and culture. Each has its own philosophy and theoretical precepts that are integrated into one conceptual framework. Within this framework, data are provided through the school library and through the implementation of appropriate teaching strategies and provision of access on many levels, student needs may be supported to

create an information process that leads to student knowledge. Information sources, instructional strategies such as ISP, teacher librarian interventions, access, and student academic outcomes will all be considered.

While provision of resources is important, "Physically receiving a text of information does not guarantee that the recipient becomes informed" (Buckland, 1991, p.113). This is an important distinction because, especially in California, many school libraries are staffed with paraprofessionals who are not certified to teach, so the teaching component of the school library program is absent. At the same time, the number of students who need extra support to access academic content is increasing, and without the instructional component, library resources become merely a room full of books.

Historical Perspective

"A room full of books" was an accurate description of the school library when first established in the late 1800's. At that time, books were scarce and expensive and the school library was the only source of reading material for many children. Historically, the school library often served as a study hall (Boardman, 1935; Wheeler, 1954).

The purpose of the school library has evolved from that time. Simply providing books to support the school curriculum is no longer sufficient, and the teacher librarian's role is no longer primarily that of a resource manager. Over the years, information in different formats has been added to library holdings, along with the technology to access these materials. This has evolved from lantern slide projectors through slides, filmstrips, movies, to videos, digital resources, and online

access to information through the Internet. The teacher librarian's role now includes managing library holdings in many formats and providing instructional support for students in how to use these resources effectively to meet curricular and personal learning needs.

This changing role was formalized by the publication of *Information Power: Guidelines for School Library Media Programs* (American Association of School Librarians, 1988). This document redefined the role of the teacher librarian under four constructs: information specialist (the traditional librarian role), program administrator, instructional partner and consultant, and teacher. This was a groundbreaking document in the field, with its focus on collaboratively meeting the needs of students, teachers, and administrators, and for the first time described the teacher librarian's role in implementing information literacy.

In response to the need to teach information literacy, several leaders in the field developed instructional strategies, including the I-search process (Macrorie, 1988), the Information Search Process (Kuhlthau, 1988, 1994), the Research Model Process (Stripling & Pitts, 1988), the Nine Step Information Model (Irving, 1985) and the Big6 Information Skills (Eisenberg, 2000). These strategies are similar in approach in that they are explicitly user-centered, based on Dewey's active learning model, and focus on the needs and abilities of the learner. The learner takes an active role and is central to the learning process, working through a number of steps to define, locate, evaluate, synthesize, and communicate information as part of the process of becoming information literate.

Additional support for teaching information literacy skills in the school library have come from the publication of a new edition of *Information Power* (American Association of School Librarians, 1998). This document moved the concepts further, focusing on the collaborative role of the teacher librarian with other staff and defining nine information literacy standards for student learning. These include the information literacy skills of accessing, evaluating, and using information; the independent learning skills of pursuing, appreciating, and generating knowledge; and the social responsibility skills of valuing, using ethically, and generating information. Various combinations of these standards and the information literacy constructs described earlier have become the foundation for most school library instruction.

In 2007, the American Association of School librarians (AASL) published *Standards for the 21st Century Learner*. Four standards were proposed: 1) Inquire, think critically, and gain knowledge; 2) Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge; 3) Share knowledge and participate ethically and productively as members of our democratic society; and 4) Pursue personal and aesthetic growth. These standards focus on inquiry-based learning, while the information seeking process models commonly used as a basis for school library instruction are problem-based. Until a new model is developed by AASL for implementing these new standards, teacher librarians will continue to rely on the guidelines provided by *Information Power* (1998) and currently implemented instructional models, or modify their instructional practice on an individual basis.

In the ten years since *Information Power* was published, the redefined role of the teacher librarian has been embraced by many practitioners, but by no means all.

Underscoring this perception of the school library as a repository for books and materials, Secretary of Education Margaret Spellings said, “One of the cornerstones of No Child Left Behind is teaching children to read. School libraries play a critical role by providing children with books and resources so they can improve their reading skills and achieve at high levels.” (U.S. Department of Education, 2006).

Library Impact Studies

With the increased emphasis on student test scores and data-driven educational decision-making, the Colorado Department of Education through the Colorado State Library division undertook what would be the first of a number of large-scale empirical studies on the efficacy of school library programming. This first study of Colorado school libraries was widely publicized and heralded as groundbreaking. (Lance, Wellborn, & Hamilton-Pennell, 1993). Schools in this study were selected based on participation in a 1989 survey of school library media centers in Colorado and used two assessments to measure student achievement, the Iowa Test of Basic Skills (ITBS) or Tests of Achievement and Proficiency (TAP). Results indicated that expenditures, size of the library staff, size of the collection, and the instructional role of the teacher librarian were all significant factors in higher average student scores on tests of basic skills. The Colorado study was replicated by the same researchers in Alaska, Pennsylvania, Oregon, Iowa, New Mexico, Michigan and Illinois (1999, 2000b; 2001, 2002, 2002, 2003, 2005) with similar results.

Those state studies and the accompanying publicity were followed by other research on school libraries and student outcomes, including Massachusetts (Baughman, 2002); Florida (Baumbach, 2002); Minnesota (Baxter & Smalley, 2003);

North Carolina (Burgin & Bracey, 2003); Indiana (Loertscher, 2003); Missouri (Miller, Want, & Whitacre, 2003); Ohio (Todd, Kuhlthau, & OELMA, 2004); California (Siminitis, 2002; Sinclair-Tarr & Tarr, 2005); Texas (Smith, 2001); and Wisconsin (Smith, 2006). Some conclusions are common to all of these studies, including a correlation between socioeconomic levels and student achievement. Figure 4, following and continued on the next page, compares these studies and their significant findings:

STATE WHERE STUDY CONDUCTED	AUTHOR(S)	DATE	SIGNIFICANT FINDING
Alaska	Lance, Hamilton-Pennell, & Rodney	1999	Students in Alaska's secondary schools with full time teacher librarians were almost twice as likely as those without to score average or above on the CAT5
California	Siminitus	2002	Top issues for these districts are academic achievement, funding and budgeting. Inadequate staffing is the top library issue.
California #2	Sinclair-Tarr & Tarr	2004	The presence of a certificated school librarian is significant in grades K-8.
Colorado #1	Lance, Wellborn, & Hamilton-Pennell	1993	School library staffing and collection size accounted for 21% of variation in 7th grade ITBS reading scores
Colorado #2	Lance, Rodney, & Hamilton-Pennell	1999	More collaboration by school librarians accounted for a 21% higher reading scores on the CSAP.
Florida	Baumbach	2002	Test scores are 22.2% higher in high schools with a library staffed 60 hours or more per week, than in high schools with less staffing hours.
Illinois	Lance, Rodney, & Hamilton-Pennell	2005	Student achievement is higher with better staffed libraries; more frequent library visits result in improved reading and writing scores (ISAT, PSAE, ACT); larger current book collections result in higher reading, writing, and ACT scores
Indiana	Loertscher	2003	Above average scores in ISTEP for 6th graders in language arts
Iowa	Rodney, Lance, & Hamilton-Pennell	2002	ITBS reading scores rise with adequate staffing.

Figure 4, Part 1

Large scale empirical studies of school libraries showing significant findings

Massachusetts	Baughman & Eldringhoff	2002	Student test scores on the MCAS are higher at all grades in schools with library programs.
Michigan	Rodney, Lance, & Hamilton-Pennell	2003	Student scores on the MEAP reading test rise with the extent to which the library is staffed by certified library media specialists.
Minnesota	Baxter & Smalley	2003	Students in twice as many schools that scored above average had full time library media specialists
Missouri	Quantitative Resources, LLC	2003	The weighted average index scores on the MAP rose with the availability of school library program services.
New Mexico	Lance, Rodney, & Hamilton-Pennell	2002	Student achievement test scores rise with the development of school library programs.
North Carolina	Burgin & Bracy	2003	Scores on standardized reading and English tests increase with appropriate library staffing, collections, and hours
Ohio	Todd, Kuhlthau, & OELMA	2004	99.4% of students in grades 3 to 12 believe school libraries help them become better learners
Oregon	Lance, Rodney, & Hamilton-Pennell	2001	The findings indicate that incremental improvements in library staffing, collections and budget will yield incremental increases in reading scores
Pennsylvania	Lance, Rodney, & Hamilton-Pennell	2000	The relationship between adequate library staffing and PSSA reading scores is both positive and statistically significant
Texas	Smith	2001	10% more students in schools with librarians than in schools without librarians met minimum TAAS expectations in reading
Wisconsin	Wisconsin Department of Public Instruction	2006	Students' scores on the WKCE are higher in schools with adequate staffing. Library staff spend more instructional time with students and staff, and provide comprehensive resources

CAT5 = California Achievement Test; CASP = Colorado Student Assessment Program; ITBS = Iowa Test of Basic Skills; NMAAP = New Mexico Achievement Assessment Program; MAP = Missouri Assessment Program; TAAS = Texas Assessment of Academic Skills; WKCE = Wisconsin Knowledge Concepts Exam; ISAT = Illinois Scholastic Achievement Test; PSSA = Pennsylvania System for Student Assessment

Adequate staffing = full time certificated library media teacher and full time paraprofessional.

Figure 4, Part 2

Large scale empirical studies of school libraries showing significant findings

Among the findings of these studies is a positive and significant relationship between professional library staffing and student test scores, primarily on reading or

English assessments (Baxter & Smalley, 2003; Burgin & Bracy, 2003; Lance, Hamilton-Pennell, & Rodney, 1999, 2000; Lance, Rodney, & Hamilton-Pennell, 1999, 2005; Rodney, Lance, & Hamilton-Pennell, 2002, 2003; Sinclair-Tarr & Tarr, 2004; Smith, 2001; and Wisconsin Department of Public Instruction, 2006). They also underscore the importance of library instruction, the number of books in the library collection, the availability of technology resources, and student access to the library as being significantly correlated to academic outcomes.

Of particular interest is the Sinclair-Tarr and Tarr study (2004) which targeted California schools. This study compared schools with and without a school library program, as defined by the presence of a certificated Teacher Librarian. This study relied on data from the California Standards Test and California Achievement Test, 6th Edition and included elementary, middle and high schools. Where a statistically significant relationship was found between student achievement and the library program, the study identified variables reported on the California State Library Survey that may have influenced this finding. Sinclair-Tarr and Tarr found a statistically significant relationship between the presence of a school library program, as defined by a certificated teacher librarian, and student achievement at the middle school level, which is the focus for this study. However, the Sinclair-Tarr and Tarr study did not disaggregate students by ethnicity, utilizing instead the California Department of Education's School Characteristics Index, a formula based on teacher and student demographic information that allows comparison of schools with similar demographics.

Student data was disaggregated by ethnicity in the study of Texas school libraries (Smith, 2001). At the middle school level two significant variables emerged. The first was a combined variable that included the number of Limited English proficient students, the percent of economically disadvantaged students, the percent of white students, and the percent of Hispanic students. This variable accounted for 43.7% of the variance on the Texas Assessment of Academic Skills (TAAS) reading data. The second variable was also a combination that included identifying materials for instructional units developed by teachers and providing information skills instruction to individuals or groups. This variable accounted for 3.9 percent of the variance on the TAAS reading assessment. This study also determined that academic performance is more related to economic factors than to ethnic or racial factors.

It should be noted that none of these studies addressed the needs of second-language learners. Second language pedagogy suggests providing materials in the language of origin and entry level English language materials (Krashen, 1993; Peitzman & Gadda, 1994). In California, with 1,568,738 English language learners in school, 85% of whom speak Spanish, there is a clear need to support the educational needs of this student population (California Department of Education, 2008).

Areas of Focus

As indicated in Table 1, there is evidence that library resources and services have a positive relationship to student outcomes. It may be inferred that these strategies may also support Latino academic achievement, but there are no studies that support this premise. Overall high student achievement may mask disparities in academic outcomes for ethnic subgroups of students (Ferguson, 2002). In addition,

many variables impact student learning, especially for students whose culture and experience are different than that of the dominant culture (Jacob, 1995; Schmidt, 1998).

Cultural Barriers

Language and cultural barriers that Latino students experience have been described through the theoretical lens of Cultural Discontinuity, suggesting that language, cultural and social interaction mismatches between the home and school environment impede educational progress (Carter & Segura, 1979; Trueba, 1987). Pedagogy and instructional programs intended for students who are members of the dominant culture, middle class, culturally literate, language-fluent, and with access to a variety of resources may not be as effective for students who represent the changing demographic profile of education (Anderson & Adams, 1992; Ladson-Billings, 1995; Montgomery, 2001). The disparity between Latino and white academic achievement, indicated by scores on standardized assessments, as well as the disproportionably high dropout rate for Latino students may be due in part to cultural differences in learning styles.

However, it is important to note that Latino students represent a number of subcultures and not all Latino students are bilingual or English language learners. While language may be perceived as the greatest barrier to academic achievement, educational outcomes in the United States are predicated on "mastery of the social skills necessary for engaging in the education process" (Bruner, 1966, p. 43). Access to books, combined with reading fluency, correlates with students' academic achievement (National Endowment for the Arts, 2007). This may be due in part to

relevant cultural concepts gained through reading literature that illustrates the perceptions of the cultural majority.

Students who come from a background where access to reading materials and early literacy activities are not supported may be at a disadvantage. Many immigrant Latino families may not have children's books at home, and children's literature is not promoted in Mexico by publishers as it is in the United States (Peitzman & Gadda, 1994). Latino children are likely to have grown up hearing stories told, stories that may not provide the background expected by their teachers. When immigrant Latino children are read to at home, reading is intended to provide moral lessons rather than serving as a pleasurable shared activity. Indeed, many immigrant Latino families feel that children are not ready for reading—or being read to-- until they enter school, and at that point reading becomes schoolwork, to be practiced and corrected (Reese & Gallimore, 2000). Contrast this with the mainstream cultural expectation that long before they enter school, children will hear stories read to them regularly from books. It should be noted that the longer Latino parents have lived in the United States, the more likely they are to read to their children before age five (Pietzman & Gadda, 1994).

The relevant background knowledge children acquire from being read to or listening to stories may be termed "cultural capital," a concept developed by Bourdieu (1991). According to Barchas:

> "Reading aloud is important for all children of all ages and backgrounds. Yet for children who might be perceived by some as "reluctant readers" because of lack of language fluency and lack of motivation due to lack of success, reading aloud is crucial. It sparks interest; extends language fluency in vocabulary, syntax and

> sentence structure; invites participation and involvement; and promotes a community of sharing that helps build a climate of success" (Barchas, 1987, p. 69).

Many schools assume the students' families will provide this necessary cultural background. Rueda, Monzó, & Arzubiaga (2003) refer to this as "academic instrumental knowledge (AIK)." They argue that all families possess cultural and social capital, but only that of the dominant culture is valued by schools. Low Latino academic achievement has been linked to parental inability to provide the cultural capital that would support school requirements (Arzubaiga & Monzó, 2002). While knowledge of cultural capital is essential to school success, intervention programs do not provide this framework, focusing instead on content that directly supports assessments and perhaps further limiting student acquisition of cultural capital.

Generational Impact

The likelihood that they have not been read to before age five is only one of the differences experienced by immigrant Latino children as they encounter the dominant culture in school and begin the process of assimilation. There is a generational impact, with each succeeding generation having a different assimilation experience. Several theories have been proposed for how this takes place. The oldest, Assimilation Theory (Park, 1930), posits that over a period of time and through generations, immigrants become more similar to the native-born population, and this theory is supported by more recent studies (Carter & Segura, 1979; Trueba, 1988).

However, all newcomers do not immigrate for the same reasons, and their rate of assimilation varies accordingly. According to Segmented-assimilation Hypothesis there are three pathways for integration into the dominant culture (Portes & Zhou,

1993). In the first pathway, groups with a high level of cultural capital and positive reception by the dominant culture may integrate rapidly (Gordon, 1964). In the second pathway, poverty undermines the group's financial ability to provide resources to support their children's educational needs (Hirschman, 2001; Ogbu, 1987). In the third pathway, immigrant parents support their children's educational progress while limiting their acculturation through reinforcement of traditional values and home language, and this appears to be an effective approach in high poverty environments...

Another variable that impacts student learning is family stability, and again there is a generational impact. First generation families generally have low divorce rates, but there is a pattern of immigrant family disintegration with the next generation. The number of immigrant families that experience divorce or separation doubles from the first generation to the second. Similarly, the number of single parents also increases, exceeding that of their white counterparts by more than 30% (Fix, 2001).

The level of commitment to permanent residence is an additional factor that impacts how quickly the children of immigrants assimilate into the dominant culture. Studies indicate that interest in assimilating decreases when the cost of migrating back to the country of origin is low (Borjas, 1982; Chiswick & Miller, 1994: Duleep & Regets, 1990. Of the Latinos in the United States, 64% are of Mexican origin, underscoring the importance of this aspect of immigrant status (U.S. Bureau of the Census, 2001).

Generational impact, reasons for immigration, and commitment to permanent residence are only some of the variables that impede Latino students in their

educational journey. In addition, there are Latino cultural expectations for how they will be taught.

Pedagogy

Latino students present different academic needs than have been met through traditional pedagogy in the United States (Peitzman & Gadda, 1994). Among the most obvious needs are instructional strategies to support varying levels of language and cultural fluency, incorporating visual cues along with verbal and written content. The kind of materials provided for emergent English-speakers are different than those provided for English-fluent students. For both groups, a focus on inclusion and awareness of multicultural issues provides the basis for instruction. Banks (1997), a proponent of multicultural education, proposed four levels for appropriate instruction. These include 1.) a contributions approach, where the heroes, holidays and cultural elements of the students' heritage are recognized; 2.) an additive approach where the curriculum is not changed, but concepts and perspectives are added on; 3.) a transformational approach through which the curriculum structure is adapted to match student ethnicity and culture; and 4.) a social actions approach through which students learn about social issues and become involved in helping to solve them.

Curriculum design is not the only area where instructional approach may need to be adapted to changing student needs. Latino cultures, while diverse, are also more collectivist than European American cultures. That is, they place a higher value on sharing ideas and information (Hofstede, 1980; Triandis, Marin, Lisansky, & Betancourt, 1984; Peitzman & Gadda, 1994; Griggs & Dunn, 1996). In psychology, this is termed "field dependence" (Witkin & Berry, 1975). Individuals who are field

dependent are more group oriented, cooperative, and less competitive than field independent individuals. It is noteworthy that in a study of Mexican-Americans, field dependence decreased as the participants became more acculturated. However, despite increased acculturation, participants in this study never reached the field independent levels of European-Americans (Ramirez and Castañeda, 1974). The implication for instruction is an increased use of group activities and collaborative learning.

The psychological framework of the individual is only part of the context within which students learn. Learning is as much a social as a cognitive process and traditional pedagogy may lead to underestimating the capabilities of Latino students (Moll & Diaz, 1987). For teacher librarians in the context of the school library, matching and supporting student learning styles, language and culture through library resources and instructional practices is as important as it is for the classroom teacher.

Some researchers contend that motivation plays an important role in developing literacy and reading fluency (Baker, Afflerbach, & Reinking, 1996; Gambrell, 1996; Guthrie & Wigfield, 1997). Research in psychology has shown that the provision of choice increases perceived control and intrinsic motivation. It should be noted that the value of choice is influenced by cultural perspectives, with North Americans placing a higher value on the ability to choose than Latin Americans (Markus & Kitayama, 2003). Latino students may prefer to work in groups and have more guidance on making choices than teachers expect from their students. Aside from Kuhlthau's (1988) research on the affective aspects of the Information Seeking

Process, there has been little school library-based research on the use of motivation in library-based instructional practices (Small, 1999).

In addition to teaching strategies, instructional materials in the library may impact student reading practices. There is evidence that materials that reflect students' cultural backgrounds may motivate student interest in reading (Jackson & Robertson, 1991; Allen, 1993; McLinn, & Minami, 1999; Rohmer, 1994; Schon, 2006; Arsenault & Brown, 2007; Grant & Wong, 2003). Culturally relevant and carefully selected resources, it may be inferred, lead to increased reading interest and support increased reading fluency.

This study focused on library resources and services that directly serve Latino students. Latino students' access to library resources is an important variable impacting the level at which those resources are used. Access includes physical, indicative, linguistic and conceptual (Buckland, 1991). Resources include print and digital materials accessed in or through the school library. Services include the selection of materials and management of the library, including circulation of materials and maintenance of the library collection. In addition, formal and informal instruction in using library resources in both print and digital format is an integral component of the library program. It may be appropriate to review each of these variables individually.

Library Access

Student access to the library is limited by the number of hours the library is open for students and the kind of class scheduling provided. Flexible class scheduling has been shown to be a factor in higher student achievement (Rodney, Lance, &

Hamilton-Pennell, 2003; Lance, Rodney, & Hamilton-Pennell, 2005). Students in schools with the highest reading scores were four times more likely to have a library with flexible scheduling (Rodney, Lance, & Hamilton-Pennell, 2003). Increased staff and hours, another indicator of access to the library, was a positive factor in increased student reading scores (Rodney, Lance, & Hamilton-Pennell, 2003; Lance, Rodney, & Hamilton-Pennell, 2001; Burgin & Bracey, 2003; Smith, 2001, 2006). Frequency of visits to the library also correlated with higher reading/language scores (Lance, Rodney, & Hamilton-Pennell, 2001). The relationship between increased library hours and number of books checked out has been documented (Houle & Montmarquette, 1984), and a correlation between number of library visits and gains in reading comprehension has also been shown (Snow, Barnes, Chagler, Goodman, & Hemphill, 1991).

Conversely, the literature indicates that students in lower socioeconomic communities have less access to print materials than more affluent students (Guice, Allington, Johnston, Baker, & Michelson, 1996; McQuillan, LeMoine, Brandin, & O'Brian, 1997; Newman, 2001; Smith, Constantino, & Krashen, 1997). It follows that access to reading materials increases the amount of reading students can do, and that increased time spent reading may increase reading fluency and reading comprehension.

Print Resources

Early scholars of school library effectiveness based their research on the presence of a teacher librarian and the number of volumes in the collection, statistics that have been found to be predictors of academic success in reading (Becker, 1970;

Greve, 1974; Hale, 1969; Yarling, 1968). Other studies consistently supported the finding that children in schools with larger school libraries made better gains in reading achievement (Elley, 1983; Fisher, Lapp, & Flood, 2001; Gaver, 1963; Krashen, 1995; Lance, Wellborn, & Hamilton-Pennell, 1993; Lance, Rodney, & Hamilton-Pennell, 2000, 2001, 2002, 2005; Rodney, Lance, & Hamilton-Pennell, 2002, 2003; Burgin & Bracy, 2003; Smith, 2001). It is notable that print resources available through the school library have been shown to be effective in increasing reading achievement for English learners and students in low socioeconomic environments (Elley, 1991; Pucci, 1994; Farrell & Oliveira, 1993).

Clearly, access to print materials is important in developing reading fluency, but not all students have equal access to books outside of the school environment. The number of books in the home is considered one socioeconomic indicator in the United States (Catterall, 1998). Less affluent families have fewer books, and the number of books in the home also correlates with students' academic achievement (National Endowment for the Arts, 2007). More affluent areas also enjoy larger public libraries and the presence of bookstores that may be lacking in less affluent areas.

Digital Resources

With the integration of digital technology into information access and dissemination, a discontinuity has taken place between how students perceive information and how educational institutions present information (Prensky, 2001). Prensky defined technology in terms of "digital immigrants" and "digital natives," noting that today's students are the first generation that has grown up in a technology - based world. He posited that this has changed how these "digital natives" think and

process information. Prensky suggests five different metaphors for how students use technology: (a) virtual textbook and reference library; (b) virtual tutor and study shortcut; (c) virtual study group for collaboration; (d) virtual guidance counselor; and (e) locker, backpack and notebook (Levin & Arafeh, 2002). It should be noted that that these applications are dependent on access to technology and competence in using it effectively.

If students are to become competent users of technology, they must have access to this digital world and guidance in how to use it (Kuhlthau, 1997; Kuiper, Volman, & Terwel, 2005). However, there exists a disparity in technology access that has been termed a "digital divide" and applies not only in an educational context, but also worldwide where there is a chasm between the technological world and developing countries. Of the six billion people in the world today, a majority of them have little or no access to technology, even at the level of telephone access, though the use of cell phones worldwide exceeded fixed-line telephones for the first time in 2002 (Brewer, Demmer, Du, Ho, Kam, Nedevschi, Pal, Patra, Surana, & Fall, 2005; Feldman, 2006). Students from this divided world arrive in the United States in increasing numbers, joining the students of poverty who also lack access to the technology taken for granted by their more affluent peers (Tanno, 2003). Compounding the problem, schools may have difficulty providing expensive technology resources (Levin & Arafeh, 2002; Moore, Laffey, Espinosa, & Lodree, 2002). Outdated technology with limited or no online access may be similar in impact to complete lack of access, and for some students, the school library may be their only access to these tools.

The problem is not simply access to information tools, however. Critical thinking is necessary to make sense of the plethora of online information (Brouwer, 1997). Internet information has generally been designed for affluent users, potentially adding a cultural barrier to accessing content by students of poverty. The Children's Partnership, a national child advocacy organization with a focus on underserved populations and technology access, refers to this as the "content divide" and defines it as the gap between the information needs of disadvantaged users and what is available on the Internet (Lazarus & Mora, 2000, p. 11). Eighty-seven percent of Internet documents are in English, though this is changing rapidly, and numerous translation programs are available online—if students know how to use them. Knowing how to use these resources depends on access and instructional support, both of which may be provided through the school library.

In addition to access to computers and instructional support, digital resources provided through the school library include an automated catalog, Internet access, informational websites, subscription databases, and remote access to these resources. Access to licensed databases has been shown to be a significant variable in increasing student academic achievement (Lance, Rodney, & Hamilton-Pennell, 2002a), and a positive relationship was determined between library technology levels and student academic achievement (Smith, 2001; Lance, Rodney, & Hamilton-Pennell, 2000, 2001, 2002a, 2002b, 2005).

Library Instruction

To use digital and print materials effectively, students must have access to them and support for using them effectively through guidance and direct instruction.

Content instruction provided by the teacher librarian includes formal and informal instruction, Internet instruction, and collaboration with teachers on combined lessons. These variables are more difficult to quantify than are the number of library resources, but studies indicate their value in supporting student outcomes. The frequency of information literacy/library instruction has been related to higher reading test scores (Baughman, 2002; Lance, Wellborn, & Hamilton-Pennell, 1993, 1999, 2002; Lance, Hamilton-Pennell, & Rodney, 1999; Lance, Rodney, & Hamilton-Pennell, 1999; Miller, Want, & Whitacre, 2003; Smith, 2006). Collaboration between the certificated teacher librarian and teachers on instructional planning has been shown to be a factor in improved student reading test scores (Lance, Rodney, & Hamilton-Pennell, 2005; Smith, 2006).

Providing instruction for students from various cultural backgrounds through the school library presents the same challenges as it does in the classroom. Research indicates contradictions between providing programs that appear to present commonly understood principals for learning and instruction, and programs adapted to the characteristics of various ethnic groups (Goldenberg, 1989). Practitioner literature echoes this contradiction, generally focusing either on content instruction or on meeting multicultural needs, and the literature on teaching information literacy does not differentiate instructional strategies to address cultural differences.

Craver (1994) suggests that library teachers "must develop programs, services and collections that are responsive to students' cultural, social, and behavioral needs" (p.147), emphasizing the *en loco parentis* role of the school and the school library staff. Respecting and valuing cultural differences and learning styles is the first step in

creating a library environment that supports the learning of all students (Cifuentes & Ozel, 2006). Localization strategies may be used to adapt instructional materials and access points such as Web pages to match the linguistic and cultural needs of the target population (Esselink, 2000; Gribbons, 1997). Other factors to consider in instructional planning include peer-oriented learning, kinesthetic instructional resources, high structure, and variety in instructional format (Griggs & Dunn, 1995). Instructional strategies and programs that emphasize individual work may conflict with the group orientation of Latino students (Peitzman & Gadda, 1994).

Latino teacher librarians as role models might better support Latino students' needs, but in California 70% of the teachers are white, a percentage that may also reflect the ethnic percentage of teacher librarians, while the student population is 48% Latino (California Department of Education, 2007. When there is a cultural or ethnic mismatch between teacher and students, teachers—including teacher librarians-- need to make both personal and pedagogical changes (Lindsey, Robins, & Terrell, 2003).

Teacher Librarian Leadership

Implicit in the role of the teacher librarian is that of an instructional leader. "Steady and visionary leadership is widely evident in effective school library programs" (AASL, 1998, p. 52). "Leadership for the library media specialist involves 'leading from the middle' as well as assuming more visible, proactive leadership roles" (AASL, 1998, p. 53). Three major focus areas have been defined for the teacher librarian: learning and teaching; information access; and program administration (American Association of School Librarians, 1998). To be effective in these three areas, teacher librarians need to have skills in instructional practice,

collaboration, leadership and technology (Woolls, 2004). This leadership role includes serving on curriculum committees and participating with classroom teachers and administrators in making management decisions (Lance, Hamilton-Pennell, & Rodney, 1999; Lance & Rodney, 2000; Lance, Rodney, & Hamilton-Pennell, 2002). In addition, the teacher librarian locates, selects, and provides intellectual and physical access to information in print and digital formats for staff as well as students.

Conclusions

The literature review reveals that there is evidence of a relationship between school library services and student achievement that has been continuous through changes in the political climate, demographics, and technology. These studies have focused on reading scores as the measure of student achievement and correlated with the levels of school library services provided by a professional teacher librarian, print library holdings, and access to technology and database resources.

Cultural differences, barriers to information and technology resources, and instructional strategies that may be a mismatch for Latino learning styles are all possible factors contributing to the current achievement gap between Latino test scores and that of their white counterparts. However, there is no research on the relationship between Latino student achievement and academic support provided through school library resources.

Purpose of the Study and Research Questions

The purpose of this study was to determine what relationship exists, if any, between Latino achievement and library services. The study compared California resources and instructional strategies implemented through the school library to

determine how successful they may be in supporting student achievement. The study also considered how school library resources and services in schools with a predominantly white student population are different or similar to those in schools with predominantly Latino students. The following research questions were used to guide this study:

- What difference is there, if any, between school library access, services and resources at middle schools with 70% or higher Latino student populations, in comparison to middle schools with 70% or higher white student populations, in California?
- What impact, if any, do school library access, services and resources have on middle school Latino students' reading achievement?
- What library services or strategies are provided by teacher librarians at high performing, high Latino schools?

CHAPTER 3: METHODOLOGY

This study considered the relationship between Latino students' academic achievement on standardized reading and the services and resources provided through the school library. In this chapter, the methodology used to address the research question has been provided. This is followed by a description of the study sample and the procedures followed in Phase I and Phase II of the study. Finally, validation of research findings is considered.

Research Design

For this study, a mixed methods approach was used, employing a quantitative phase and a qualitative phase, conducted sequentially (Johnson & Onwuegbuzue, 2004). The two-phase design framework was explanatory and allowed the researcher to gain a deeper understanding of the research problem at the outset of the study, using quantitative data. This was followed by a second phase of research using qualitative interview data collection to explain or expand on the first findings (Creswell, 2005). The second phase was intended to provide more descriptive information on the instructional and informational strategies employed with students in school libraries serving predominantly Latino populations and those that are serving predominantly white.

Because the high dropout rate for Latinos begins at the end of middle school, that level was selected for this study (Bridgeland, Dilulio, Morison, 2006; Montecel, Cortez, & Cortez, 2004; Secada et al., 1998; Yosso & Solórzano, 2006; Huber, Huidor, Malagón, Sánchez, & Solórzano, 2006; Gandara, 1998; Adam, 2002; Harvard

University, 2005). By high school, many struggling students may have dropped out, so middle school should provide richer data. Seventh grade is common to the various configurations of middle schools and junior highs in California and aggregate data from California Assessment Test, 6th Edition reading scores are available for this grade. Therefore, seventh grade data were used to measure academic achievement in reading.

Population and Sample

To determine the sample population that was used for this study, a stratified sampling procedure was followed (Creswell, 2005). Data were collected on the ethnicity of California middle schools in California with the help of staff from the Riverside County Office of Education, resulting in a group of 498 middle schools with 70% or higher Latino or white populations. California Department of Education School Library Survey data for 2005-06, the most recent year with survey results, were collected with the assistance of the State School Library Consultant. In that year, 327 middle school teacher librarians participated in the California State School Library Survey.

From these two databases, schools were selected that that met the ethnicity and staffing criteria of this study and had also participated in the California State Library Survey. In addition, schools with K-8 or 7-12 configurations were eliminated, to ensure comparability, resulting in a final study sample of 103 middle schools. Table 1 provides an overview of these statistics.

Table 1

Middle school ethnicity and library staffing in California, 2006-07

Description	Number
Teacher librarians in California, all grades	1,227
Middle schools in California	1,293
Middle schools with 70% or more Latino population	334
Middle schools with 70% or more white population	164
Middle schools with teacher librarians participating in 2006-07 California State Library Survey	327
Middle schools with 70% or more white or Latino students, 2006-07 State Library Survey data, and a teacher librarian	103

California Assessment Test, 6th Edition (CAT/6) reading scores were selected to use as a direct measure of student reading achievement for this study. Initially, Academic Progress Indicator (API) scores were used to rank the academic achievement of the targeted schools. However, the API scores reflect a formula involving several assessment data, so the decision was made to use either California Standards Test (CST) reading scores, or CAT/6 reading scores. CST and CAT/6 scores for the study population were compared and provided similar results. The CST provides data for all three middle school grades and is correlated with curriculum standards, potentially providing richer information. Because CAT/6 scores are disaggregated into separate reading and writing sections while the CST assesses both

reading and writing in one language score, CAT/6 reading scores appear to correlate more directly with reading achievement.

Statistical Description of Study Population

The resulting list of 103 schools selected for inclusion in this study provides a rich range of demographic information, which is illustrated in Table 2. These schools represent a wide range of achievement levels, ethnicity, socioeconomic levels, and school population numbers. National School Lunch Program (NSLP) percentages were used as an indicator of student poverty levels and ranged from zero to 100% across schools. NSLP percentages for the study schools (mean = 59.14; standard deviation = 33.78) were negatively correlated with the California Achievement Test, 6^{th} Edition (CAT/6) reading scores for the target group of 103 ($r = -.52$, $p = .01$), indicating the impact of poverty on student academic achievement outcomes, a finding that is supported in the literature (Baughman, 2002; Baumbach, 2002; Baxter & Smalley, 2003; Burgin & Bracey, 2003; Loertscher, 2003; Miller, Want, & Whitacre; Todd, Kuhlthau, & OELMA, 2004; Sinclair-Tarr & Tarr, 2005; Smith, 2001; Smith, 2006).

Table 2

Descriptive statistics for 103 middle schools with 70% or higher white or Latino student populations included in the study, 2006-07

Description	Mean	Standard Deviation
NSLP	59.14	33.78
Number of students	1151.17	645.33
Percent ELL	25.61	17.16
Percent Latino	61.23	34.52
Percent white	27.28	33.06
CAT/6 reading scores	655.46	25.04
API	707.03	113.20

NSLP = National School Lunch Program (poverty indicator)
ELL = English Language Learner
CAT/6 = California Assessment Test, 6th Edition, Reading Assessment
API = Academic Performance Index (California assessment indicator of overall proficiency on multiple assessments in math and language arts.

Phase I

In Phase I of the study, data on the target schools were compiled from the California Department of Education State Testing and Reporting (STAR) website. Comparison data for each school were collected on 2007 CAT/6 mean scale reading scores, the percent of students at the 50% proficiency level and at the 75% proficiency level, and the number of students taking the assessment. National School Lunch

Program percentages were collected for each school to indicate poverty levels. As a check, API scores and CST scores were also collected.

The California State Library Survey data were retrieved from the 2006-07 database. This survey collects data annually on staffing, resources, funding, services, and access, using a twenty-question, multiple-choice survey instrument that is administered online. For this study, only data on resources and services that were determined to be significant in the literature review were considered, and these include:

Access hours

Staffing

Number of library books

Digital resources

Technology access

Information literacy instruction

Internet instruction

Librarian collaboration with teachers

Data on these variables were collected from the California State Library Survey, turned into numerical scales and dichotomous variables, and a preliminary analysis conducted using an Excel spreadsheet. The data were color coded and visually compared for accuracy, and percentages were calculated for each variable in the list. These data provided answers for the first research question, and are included as Table 4 (Page 62).

Since this study also seeks to determine relationships among variables and test a hypothesis, inferential statistics were used to analyze the data, using Statistical Package for the Social Sciences (SPSS) software, Version 15 (Creswell, 2005). Multiple regression analyses were used to determine the extent to which each of the listed variables or combination of variables is associated with student achievement, and to determine if there are any relationship patterns between the variables.

Phase II

For the qualitative part of the study, only middle schools that included sixth, seventh and eighth grades were included, to provide consistency. From the study sample of 103 schools, ten of the highest scoring schools serving predominantly white students, and the ten highest scoring ten schools serving predominantly Latino students were selected, based on seventh grade 2007 California Assessment Test, 6th Edition reading scores. From this group, three teacher librarians from each target population were selected for interviews based on geographical proximity and willingness to participate in the study.

Qualitative interview data were collected using a researcher-developed interview protocol adapted from the questions employed by State School Library Survey instrument. For this interview protocol, the number of questions was reduced to thirteen, targeting only those services and resources listed above. Open-ended questions were used instead of the closed-format, multiple-choice questions in the State Library Survey (Appendix E). Guidelines suggested by Merriam (1998) were used to help structure the interview protocol. Questions were added that directly

address meeting Latino students' academic needs and this instrument is available as Appendix D.

This interview instrument was field tested in a pilot study with a teacher librarian in a school not selected as part of the study. To provide a link between the quantitative data from the California State Library Survey and the qualitative interview data, the questions for interviews were based on that survey instrument.

The six teacher librarians selected for the study were contacted by email, using the format in Appendix A, followed up by a phone call. Institutional Review Board (IRB) documents were sent out to all the interview participants a week before the scheduled interview, which was conducted in person and recorded.

In addition to the interview instrument, interviewer observations were made on the size of the library, signage, special collections, decorations, number of students who could be seated, and number of periodicals. This information was collected as a result of the pilot study interview, where the importance of information on the library environment became evident. This observational data captured details that are not part of the State Library Survey or interviews.

Transcripts of the interviews were sent to all participating teacher librarians within a week after the interview for member checking. Clarifying questions were included with this document, and the interview participants were generous about responding to those questions. No interviewed corrections were suggested for the transcripts.

Analysis of the interview data was done through a data reduction process of noting and coding common themes, similar phrases, relationships among variables,

patterns, and notable differences in the responses (Miles and Huberman, 1994). Commonalities and consistencies among the respondents' answers were noted, as well as divergences.

Validation of Research Findings

Content validity is crucial throughout the research process, and to ensure this, the interview questions were field tested in a pilot study at a middle school with grade levels and demographics similar to those selected for the study. To ensure accuracy in the interview findings, a copy of the interview transcript was sent to each participant for member checking, along with clarifying questions on answers that may not have been clear in the interview or were inaudible on the recording.

Because the two assessments that were used to collect quantitative student achievement data have passed a number of local and state reviews, the data collected have criterion validity. The data from the State School Library Survey were reviewed for the schools being studied to determine if there are any anomalies, again striving for criterion validity.

Construct validity was determined from the analysis of the data and comparison with the hypothesis. The findings were also compared to those in the Sinclair-Tarr and Tarr (2005) study, which used the same quantitative data sources. Significant differences might indicate the need for further data review.

Delimitations of the Study

- The study was conducted between February and December 2008
- Targeted school libraries were located in California
- Interview participants were state certified Teacher Librarians

- Only schools with grades six, seven and eight and 70% or more Latino or white student populations were included
- The total study population was 103 middle schools
- From each group, the 70% or more Latino and the 70% or more white schools, only ten schools were selected to provide data on high performing school libraries

Ethical Issues

In this study, aggregate and publicly available data were used to measure student achievement and determine levels of library service and staffing provided through selected target schools. Even though this is public information, the sites targeted for study were not identified by name, further protecting individuals who responded to the California School Library Survey.

Six interviews were conducted as part of this study, and forms from all three universities were used to get permission from each interviewee and as necessary from their school site and district. Survey respondents were not identified by name or site.

CHAPTER 4: FINDINGS

Research Questions

The purpose of this study was to answer the following research questions:

- What difference is there, if any, between school library access, services and resources at middle schools with 70% or higher Latino student populations, in comparison to middle schools with 70% or higher white student populations, in California?
- What impact, if any, do school library access, services and resources have on middle school Latino students' reading achievement?
- What library services or strategies are provided by teacher librarians at high performing, high Latino schools?

To answer those questions, a descriptive, non-experimental mixed-methods approach was used to examine variations in library resources, instructional support provided through the school library, and student outcomes. The criteria of ethnicity, credentialed teacher librarian staffing and participation in the California State School Library Survey created a study sample of 30 primarily white and 73 primarily Latino middle schools for a total of 103 schools. Only seventh grade reading scores were used as assessment criteria, providing a study population of 46,780 students.

School Population

Within this study population, there are large variations between the middle schools. To provide an understanding of some of these differences, the size of the student population, ethnicity, poverty, and language fluency were compared...

The number of students enrolled in the study schools may affect both academic outcomes and the level of library support that can be provided. In the middle schools included in this study sample, the number of students ranged from an average of 686 in the primarily white schools to an average of 1,342 for the primarily Latino schools, a dramatic difference in school population. CAT/6 reading scores provided a measure of academic achievement and ranged from 618.3 to a high of 704.4 with a mean of 655.13 (SD = 24.94). For comparison, the 2006-07 California state average mean scale score for the 7th grade CAT/6 reading test was 659.5. The data indicated a significant negative correlation (r = -.52, p = .01 level) between CAT/6 reading scores and mean school population.

Ethnicity, Poverty, and English Language Fluency

A disaggregation of all schools in the study population by ethnicity is shown in Table 3 on page 59. The data indicated that there is a large positive correlation (r = .91, p = .01). between National School Lunch Program (NSLP) eligible students and overall percentage of Latino students in this study sample. In contrast, a comparison of the percentages of white students provided an almost opposite correlation (r = -.91, p = .01). With the large negative correlation (r = -93, p =.05) determined between NSLP and CAT/6 reading scores for this study population, it is not surprising that there is a fifty-point gap between the mean CAT/6 reading scores of primarily Latino and primarily white schools, with fewer Latino schools scoring at the 75th percentile and above on the CAT/6 reading assessment.

Further, in this study the 70% or higher Latino schools included the majority of the English language learner population, and there is an impact on test scores. A

multiple regression analysis determined a large negative correlation (r = -.82, p = .05) between the percentage of English language learners and CAT/6 reading scores. Based on this analysis, language proficiency presents an additional academic barrier for students whose first language is not English.

Table 3

Descriptive statistics comparing 70% + Latino and 70% + white middle schools in California for 2006-07

	Latino (N = 73)		White (N = 30)	
Variable	M	SD	M	SD
Valid number taking CAT/6 assessment	532.21	218.36	262.84	119.81
CAT/6 mean scale score	640.3	79.53	690.98	8.71
Percent proficient at 75% or above	8.60	3.37	47.87	9.21
Percent of ELL Students	34.63	10.90	2.90	3.21
Percent NSLP	78.48	16.14	12.07	11.50

Note: M = Mean SD = Standard Deviation
CAT/6 = California Assessment Test, 6th Edition
NSLP = National School Lunch Program (Poverty indicator)
ELL = English Language Learner

Differences Between Library Access, Services, and Resources

The data presented in the previous section provide a profile of the contrasts in socioeconomic indicators, student enrollment, English language fluency and academic outcomes between 70% or higher Latino and 70% or higher white schools in this study. This study will next consider data that may help answer the first research question: What difference is there, if any, between school library access, services and resources at middle schools with 70% or higher Latino student populations, in comparison to middle schools with 70% or higher white student populations, in California?

To answer this question, it will be helpful to clarify the data on access, services and resources central to the research question. The California State Library provided the following information for this study:

1. Access to the school library during specific time frames: before classes start, during class, during breaks, during lunch, after school, evenings, weekends and summer school. Schools selected all applicable answers.
2. Staffing level of the library media teacher, defined as full time, half time or more, less than half time, more than one full time equivalent.
3. Total book count, entered on a twenty-one item Likert-like scale of answers and ranging from 2,499 titles or less to 50,001 or more, measured at 2,500 increments
4. Technologies available in or through the library, including automated catalog, website with or without access to the online library catalog,

automated library circulation, automated textbook circulation, Internet access, subscription databases, remote access to subscription databases, video, DVD or laserdiscs, and audiobooks. Schools selected all applicable answers.

5. Services or programs including information literacy instruction, informal instruction, collaboration, reference assistance, resources outside the library, and instruction in Internet searching. Again, schools selected all answers applicable answers.

State Library Survey data indicate only the presence or absence of each survey item. Table 4 shows percentages of each for the 103 study schools, disaggregated by school ethnicity to provide comparisons. For clarity, these are grouped under the three areas of access time, resources, and services, and each will be considered separately.

Table 4

Comparison of percentages of access time, resources and services provided through the school library, based on data from the 2007 California State Library Survey.

	All Schools in Target Population	
Access Time	Latino N = 73	White N = 30
Before class	93%	98%
During class	100	100
During breaks	78	100
During lunch	88	100
After school	95	97
Resources		
Automated catalog	97%	100%
Website with catalog	55	68
Website without catalog	12	23
Student Internet access	96	100
Paid online databases	68	74
Remote access to databases	48	81
Services		
Information literacy instruction	58%	81%
Informal instruction	100	97
Collaboration with teachers	40	58
Reference assistance	97	97
Locating resources outside the library	73	77
Reading, listening, viewing guidance	81	97
Instruction on Internet searching	85	100

Access Time

The first area of focus is student access time. While access to library resources might be assumed, for some students this may not be the case. The data In Table 4 indicate no difference in access during class time for white or Latino students, but less access for Latino students at all other times. Latino students have 4% less access before class, 22% less access during breaks, 12% less access during lunch, and 5% less access after school. The California State Library Survey data also indicate a difference in the total hours per week that these middle school libraries are open in each library grouping. The Latino middle schools in this study are open an average 36 to 40 hours per week. For the white middle schools in this study, students have access to the school library, on the average, 41 to 45 hours per week.

Resources

Library resources are the second area that is a focus for this study. The number of books is perhaps the most traditional resource provided through the school library. In this target group of schools, the data indicate a range of book-to-student ratios, with a positive correlation between the school population and the number of books in the school library ($r = .43$; $n = 103$, $p = <.05$). However, this study found no significant correlation between the number of library books and student CAT/6 scores. When considering the number of books available and the mismatch between student language fluency, the Spanish language materials included in library collection may be a contributing factor. The predominantly Latino middle schools in this study included an average of 34% English language learners, so this finding is especially relevant.

Another resource provided through the school library is digital information. The data in Table 4 indicate that for all schools in the study, the predominantly white schools provided more access to technology and digital resources, including 24% more access to library website resources, 6% more access to online databases and 33% more remote access to those databases than did predominantly Latino schools. An additional resource that presented a discrepancy is the availability of audiobooks. The Latino schools provided 38% less opportunity for student access to this resource than predominantly white schools.

Services

The third area of focus was services provided through the school library. In Table 4, the data indicate that teacher librarians at the predominantly Latino schools provided more informal instruction than the teacher librarians at predominantly white schools, but in every other area the data indicate a lower level of services. This is particularly evident in information literacy instruction, with 23% fewer teacher librarians at predominantly Latino schools providing that service and 15% fewer providing instruction on using the Internet. Another difference is found in the level of collaboration between the teacher librarian and classroom teachers, where teacher librarians at the predominantly Latino schools are almost 18% less involved.

Conclusions

There is a difference between the level of school library access, services and resources provided at middle schools with 70% or higher Latino student populations, in comparison to middle schools with 70% or higher white student populations in California. The data indicate that school libraries in predominantly Latino schools in

this study group provide students with less access time, a lower level of services, and fewer resources, especially technology resources, than that provided in predominantly white schools. Both groups have similar numbers of books available in their school libraries, but because Latino schools in this study have an average of almost 50% more students and more students for whom English is a second language, even when resources and services appear comparable, they may have less access to the library and to library resources.

Impact of Access, Services, and Resources on Reading Achievement

The second question that guided this study was an examination of the impact, if any, of school library access, services, and resources on middle school Latino students' reading achievement. This involved an analysis of staffing patterns, student access to library services, the availability of digital resources, and the impact of services on student outcomes.

Staffing

To answer this research question, each variable was considered for the 70% or higher Latino schools, using a multiple regression analysis to determine where there may be a significant relationship with the dependent variable, CAT/6 reading scores. The first variable to be considered is staffing hours for the teacher librarian. In the study sample, teacher librarian staffing hours ranged from less than half time to more than full time. A multiple regression analysis indicated a significant positive relationship ($r = .27$, Sig. = .021, $n = 73$, $p = < .05$) between the level of professional library staffing and student academic outcomes.

Access

Staffing levels also impact the next area to be considered, that of student access to the school library. Higher levels of staffing provide more hours that may be available for students to use the library. For this study, access is measured by times when the library is open for students, including before school, during breaks, during lunch, and after school. The data indicate no significant relationship between library use during lunch and breaks, and CAT/6 reading scores. However, a significant (Sig = .04) relationship between before and after school access to the library was indicated ($r = .21$, $n = 73$, $p = <.05$). The data indicate that 2% of the variance in CAT/6 reading scores is explained by this group of variables.

Digital Resources

Digital resources were the next area of focus. The study has already determined that the top performing schools in this study population have more access to digital resources than students with lower CAT/6 reading scores. These resources include an automated library catalog, a website with supporting information, Internet access, paid online databases, and audiobooks.

A multiple regression analysis was done of technology related variables that included an automated catalog, a website with instructional resources, student Internet access, paid online digital databases, and audio books. Because these variables appear closely related, collinearity might have been an issue, but the analysis indicated this was not the case. The automated catalog was significantly correlated with three variables: Website with catalog (Sig. = .024), student Internet access (Sig. = .0005), and paid online digital databases (Sig. = .017). In addition, a significant correlation

was shown between student Internet access and paid online digital databases (Sig. = .008). The data indicate that 7.8 % of the variance in CAT/6 reading scores was explained by this group of variables.

Services

The third area to be considered is the impact of services on Latino student outcomes. These services were divided into two groupings, direct instruction and informal instruction. A multiple regression analysis using CAT/6 reading scores as the dependent variable was conducted on variables that indicate direct instruction: information literacy instruction, collaboration, reference assistance and Internet instruction. The analysis determined that, in this study population, no significant relationship between formal instructional services and CAT/6 reading scores is indicated ($r = -.081$, $n = 73$, $p = .05$). However, significant correlations were found between information literacy instruction and Internet instruction (Sig. = .0005, 1-tailed), and collaboration and information literacy instruction (Sig. = .001, 1-tailed). Correlations were also shown between reading guidance and information literacy instruction (Sig. = .001, 1-tailed) and collaboration (Sig. = .015, 1-tailed). The data indicate that these variables explain 4.7% of the variance in CAT/6 reading scores.

The next group of services considered were informal services, including locating resources outside the library and reading/listening/viewing guidance. A multiple regression analysis determined no significant correlation between those informal services and CAT/6 reading scores.

Analysis of Correlations

To determine which independent variables were highly correlated to one another, an analysis of correlations was performed. Of the nineteen variables that are specific to the school library, none showed a high correlation (r > .7) with other variables, and therefore none were dismissed from the study. Informal instruction was constant for all the primarily Latino schools, and was not considered. However, in this analysis, some significant relationships emerged.

Before class time was significantly correlated with a library website with (r =.265) and without a library catalog (r =.275). This variable was also correlated with Internet instruction (*r* =.235) and total hours open for students (r = .279), all significant at the < .05 level (2-tailed). A relationship was determined between the level of staffing and before class access (r = .244) and also collaboration with teachers (r = .298). Audiobooks were found to correlate with the total number of books in the school library (r = .284) at the .05 level (2-tailed) and with information literacy instruction (r = .340, 2 tailed, significance at the .01 level). The presence of an automated catalog correlated with the presence of paid online databases (r = .247, significance at the .05 level, 2-tailed), and with student Internet access (r = .388, significance at the .01 level, 2-tailed). Reading guidance was found to correlate with information literacy instruction (r = .356, 2-tailed, significance at the .01 level) and collaboration with teachers (r = .253, 2-tailed, significance at the .05 level).

Another correlation analysis was conducted to determine and strength and total directionality of the linear relationships between the dependent variable, CAT/6

reading scores, and independent variables of library access, resources and services. Results of the correlation matrix for this analysis are shown in Table 5.

Table 5

Correlation matrix of middle school library access, services and resources with 2006-07 CAT/6 mean scale reading score

Variable:		2006-07 CAT/6 Reading Score
Access times		
Total Hours Open	Pearson Correlation Sig. (2-tailed)	-.077 .516
Before school	Pearson Correlation Sig. (2-tailed)	-.082 .493
During breaks	Pearson Correlation Sig. (2-tailed)	-.059 .618
During lunch	Pearson Correlation Sig. (2-tailed)	-.067 .572
After school	Pearson Correlation Sig. (2-tailed)	.039
Resources		
Number of books	Pearson Correlation Sig. (2-tailed)	-.158 .182
Automated catalog	Pearson Correlation Sig. (2-tailed)	-.135 .254
Website with Catalog	Pearson Correlation Sig. (2-tailed)	-.089 .454
Website with no catalog	Pearson Correlation Sig. (2-tailed)	.097 .416

Table 5, continued

Correlation matrix of middle school library access, services and resources with 2006-07 CAT/6 mean scale reading scores

Variable:		2006-07 CAT/6 Reading Score
Online digital databases	Pearson Correlation Sig. (2-tailed)	.031 .798
Remote access to databases	Pearson Correlation Sig (2-tailed)	.099 .404
Student Internet Access	Pearson Correlation Sig. (2-tailed)	.026 .830
Audiobooks	Pearson Correlation Sig. (2-tailed)	-.210 .075
Services		
Information literacy instruction	Pearson Correlation Sig. (2-tailed)	-.081 .493
Informal Instruction	Pearson Correlation Sig. (2-tailed)	a
Collaboration with teachers	Pearson Correlation Sig. (2-tailed)	-.135 .255
Reference assistance	Pearson Correlation Sig. (2-tailed)	.076 .524
Reading Guidance	Pearson Correlation Sig. (2-tailed)	-.172 .145
Instruction on Internet Searching -	Pearson Correlation Sig. (2-tailed)	-.002 .986
Staffing		
Staffing level	Pearson Correlation Sig. (2-tailed)	.270* .745

Note: N = 73 * = Significance at the 0.05 level (2-tailed) a. No variation

Conclusions

The quantitative data thus far have provided information on access, resources and services for the study group of seventy-three 70% or higher Latino schools. These data offer one lens for viewing how services and resources provided through the middle school library may support Latino student academic outcomes. The data consistently support the significance of professional library staffing, though larger student enrollment may have an impact on how effectively the teacher librarian can deliver services.

However, these data provide a one-dimensional picture of school library support, indicating only the presence or absence of the areas of focus for this study. To determine what resources and services are seen as most effective by library practitioners and how they may be implemented, the study will consider qualitative findings from the interview data.

Qualitative Findings

From the study population, the ten highest achieving middle schools for each ethnic grouping, determined by the CAT/6 reading scores, were chosen for further study. Three schools were selected from each group for face-to-face interviews with the teacher librarian. The subjects interviewed for this study included male and female, Latino and white, represented different geographical and socioeconomic areas within California, and ranged in library experience from 6 years to 28 years. The selected schools varied in size from less than 500 to over 1,500 students, and the

percentage of National School Lunch Program (NSLP) students varied from less than 5% to 100%.

The quantitative data indicate that at these higher performing 70% or higher Latino and 70% or higher white schools, library support is provided at higher percentage rates in almost every category, in contrast with lower performing schools. Of particular note is the increased access in these high performing schools to information literacy instruction, informal instruction, collaboration, reference assistance and help in locating materials outside the library.

The interview protocol, included as Appendix D, was based on the California State Library Survey instrument and reflects the emphasis on the three focus areas of access, services, and resources. Two additional themes emerged from the interview data, that of "library as space," and the difficulty of meeting the needs of eighth graders which will be termed "eighth grade dip." Access, resources and services common to all of the six subject libraries will be considered sequentially, followed by the added concepts of library as space and eighth grade dip. This will be followed by comparisons where differences were determined.

Access

Physical facilities play a role in access, and all six middle school libraries selected for interviews, except one, had sufficient numbers of chairs and tables to seat at least two classes of twenty-five students. The smaller library was in a temporary facility, pending the construction of new library. The number of hours open for students was similar between all the schools, averaging forty hours per week. All provided access before school, during lunch, during class and after school. None were

open weekends or evenings, and only one school provided library services during summer school. Five of the six libraries provided access during breaks. All schools provided flexible scheduling options for classes, though in one primarily Latino school, fixed scheduling and flexible scheduling were combined, with language arts classes on a fixed schedule and other content areas scheduled as needed. "Teachers come in every three weeks, every grade, so I get 99% of the kids through language arts" (Interview with 4L). "Most sixth graders come in every two weeks for a period, seventh and eighth less often" (Interview with 2W).

One of the teacher librarians at a primarily white school noted that closing the library for meetings can be a problem in terms of student access. "Librarians get into situations where they have one of the nicest places on campus, so people come in and hold meetings" (Interview with 5W). Hosting meetings is perceived as a way of providing service, but also as something that impedes student access to resources. "…I think it is really important that the library be accessible to students….I think access is crucial…" (Interview with 5W). Making the library accessible was viewed as important. "I make it as comfortable and accessible as possible…" (Interview with 3L)

All of the teacher librarians had student helpers or sponsored student book clubs, rewarding these students with privileges like checking out more books or having lunch in the library. These students supervised the circulation desk, checking books in and out, shelving books, and helping with other library responsibilities. Involving students in library management creates a more welcoming and inclusive

library environment, and provides opportunities for students to assume a leadership role (Farmer, 2003).

Another aspect of access is related to circulation policies that determine how many materials may be taken from the library for further study and for how long a period of time. In school libraries, each book must be returned so the next person may borrow it. The middle school teacher librarians in primarily Latino schools in this study limited students to a two or three week checkout period and also limited the number of books they could check out at a time, generally to two books. Students in primarily white schools were allowed to check out more books at a time than students in the Latino schools. This practice indicates budgetary restrictions and may reflect the socioeconomic levels of the middle schools in this study.

Resources

These six high achieving middle school libraries all provided extensive print and non-print resources for students. The library collections averaged 14,000 books and all libraries subscribed to more than twenty print magazines. The average checkout period for students was two weeks, though students in white schools could check out more books at a time. All schools had implemented automated library circulation and digital catalog programs. Most of them also provided online databases and, in most cases, these were available to students to access remotely from home computers. All but one school provided audiobooks for student checkout.

Computers are available for student use in all six of the target middle school libraries, but what students access using these computers varies. All these teacher librarians limited computer use to class projects and homework, including word

processing. Most of the libraries provided access to subscription databases, but one teacher librarian allowed students to search the Internet for resources in place of subscription databases. The number of paid subscription databases ranged from zero to six. Several teacher librarians encouraged students to also use the databases provided by the public library, accessed with a public library card. Additional reading support was provided through the use of Accelerated Reader, a reading assessment program, in two of the libraries.

Supporting students' digital access to resources was only part of their role, as described by these teacher librarians. Teacher librarians at both predominantly Latino and predominantly white schools commented that part of their responsibility was educating the faculty on the availability and use of digital resources. One commented that part of her collaboration involves "raising the awareness of the staff that going to Wikipedia [an online free-source encyclopedia] or 'Googling' something is not the best way to do research." Another teacher librarian said, "The model that I inherited was very print based and the teachers were hesitant to change that at all."

Services

Staffing, while not a direct service, allows the teacher librarian to provide support for students in the library, so it follows that the higher the level of staffing, the more potential for services for students. Library staffing for these six schools was consistent and all of the teacher librarians were full time and had paraprofessional support staff, either full time or part time. This is not the norm in California, where at the middle school level, professional staffing is not consistently in place and budget cuts have resulted in staffing reductions.

There was no clear consistency in the kinds of services offered, but all of the teacher librarians provided informal instruction and reference assistance. Most of them also provided information literacy instruction, implemented through library-based research projects. At the predominantly white schools, research in the library was clearly a priority with the teacher librarians. "When we do research, we try to scaffold it so we start the sixth graders off with lessons at their level. All the students have lessons in at least some of their classes, and every year we are building higher level skills" (Interview with 2W). "More of the lessons I do are on research…" (Interview with 6W).

Five of the six teacher librarians maintain library web pages and viewed these as additional teaching tools and as instructional support for lessons presented in the library. Both teacher librarians at primarily Latino schools and primarily white schools saw the website as an additional teaching tool. "I find websites, put the links on my library website and I will have the kids use those websites first to establish prior knowledge….." (Interview with 5W). "I do everything I can to make them use my webpage….they get everything they need to know about the library from it, so that when they think research, that's where they think to go first" (Interview with 2W). One teacher librarian used *Moodle,* an online environment where students can post and share information, as a teaching tool to help students practice online collaboration. Other digital tools mentioned include *What to Read Next*, *NoodleTools, Excel*, and *Inspiration.*

Although classes were using the library regularly, there were mixed responses to the question on whether the teacher librarians collaborated with teachers on shared

lessons in the library. All interview subjects indicated that they were unable to collaborate successfully with every member of the teaching staff, but all collaborated with some teachers. To provide time for collaboration with teachers, one teacher librarian closed the library during one of the student break periods. Since the library was open for students before school, after school and during lunch, she felt that this was her only opportunity to meet with teachers and this was important enough to warrant the closure.

In addition to regular library usage for class research and projects, all the teacher librarians promoted reading and library usage through book displays, reading contests and activities, guest speakers, events in the library, personal interaction with students on what they read and student book reviews. ”I really do try to make reading as fun as we can and through direct contact…” (Interview with 6W).

Two of the teacher librarians indicated that they used the Dewey Decimal System numbering as the basis for lessons with math classes. Several teacher librarians provided instruction and support for special education classes, adapting lessons to the needs of this population.

Library Websites

Because the library website was mentioned so often in the interviews, the websites for the primarily Latino schools were analyzed in terms of the resources and services provided for students. For all three interview schools, library websites maintained by the teacher librarian were linked from the school web page. These library websites included information on student-created book reviews in varying formats, along with information on bibliography format, recommended lists of books,

Accelerated Reader titles, and a PowerPoint orientation to the library. The library catalog is available in English and Spanish. Hours and library rules are posted, along with information on how many books students may check out (two) for how long (two or three weeks). Special programs are posted, including Battle of the Books (a reading comprehension competition) and upcoming events. Noticeably lacking are resources that that might be considered Latino or multicultural, aside from the Spanish language version of the library catalog. This may reflect the impact of Proposition 227 (1998) in California, a law that mandated instruction "overwhelmingly in the English language" unless parents sought a waiver for their children (California Education Code 300-340).

Programming provided through the school library is only part of the support provided for Latino students. The three high performing primarily Latino middle schools offered additional support for their students, including Gifted and Talented Education, Advancement Via Individual Determination (AVID), three hours of after school tutoring, additional staffing and counseling, and bilingual programming.

Assessment

The teacher librarians generally assessed the success of their programming by circulation statistics and the amount of student use of the library. One noted higher Academic Performance Index (API) scores for the school, and felt that the library had been a contributor to that improvement. The teacher librarians at all the interview schools felt that their role as a caring adult was important. At a primarily white school, the teacher librarian said, "We feel their academic program is so strong, but we

don't do as much to meet their affective needs. I really see that more as where I'm providing value."

Additional Findings

During the interviews, two additional themes were presented by the teacher librarians. They described the concept of "library as place" and expressed their concern regarding a perceived reduction in library-based reading as students went through eighth grade. While these are outside the context of the original study, they nevertheless have validity for this research area. This study is concerned with how the school library may impact Latino student academic outcomes, and if student feelings of safety and opportunities for collaboration are provided through the school library, that is a service that may have academic value.

The drop in reading interest at the eighth grade that was noted by these teacher librarians reflects test score data that indicate a drop in California Standards Test English/Language Arts scores between seventh and eighth grade. This will be termed "eighth grade dip." It may be helpful to consider each of these separately and hear what the teacher librarians said.

Library as Place

Several of the teacher librarians mentioned the library as either a gathering place for students to be, or as a supervised place for students who do not feel safe on the school grounds during breaks and lunch. "I think it's most popular as a place, just to be. Because their classrooms are closed for the most part during free periods, the fields are, you know, kind of a scary place for a lot of middle school students…..its a safe haven for them and also a place to do their homework…" (Interview with 6W).

At one of the primarily Latino schools, the teacher librarian noted "Place is important, access, and there is a safety issues. Some parents don't let their children use the public library, which is a few blocks away, because of concerns for their safety. This is a safe, comfortable, positive environment." Campus safety is a very real concern at the middle school level, as evidenced by campus security staffing, perimeter fences, and security procedures.

Eighth Grade Dip

A negative difference in the amount of library-based reading by students in the eighth grade was mentioned by all of the interview teacher librarians, a difference that may be reflected in assessment scores. The mean scale scores on the 2007 English/language arts portion of the California Standards Test for the study population of 103 middle schools indicate an average drop of three points between seventh and eighth grade, which is true for both predominantly Latino schools and predominantly white schools. The interview teacher librarians said that part of the problem may be the difficulty in providing library resources that meet the needs of eighth graders as well as sixth graders. A teacher librarian as a predominantly white school said, "I think a lot of eighth graders sort of age out of our collection at some point, and we don't have a lot of the edgier titles they're interested in…" and "They tend to see the library as a place for the younger kids, because the sixth graders are so excited to come in here…we don't have a teen section." ".. not so many eighth graders participate in reading programs because they are too cool" (Interview with 4L). "Last year …I did an eighth grade book club….open only for eighth graders, reading eighth and ninth grade books that are a little bit on the edge, just trying to keep up that

interest there" (Interview with 6W). Another teacher librarian in a primarily white school said, "My two eighth grade English teachers both decided that their kids weren't reading enough for fun, so I've had both of their classes through, just to encourage kids to pick something that they'd like." Student interest in reading was not the only variable. "By eighth grade not too many classes use the library for projects" (Interview with 1L)

Contrasts

After considering the similarities between the six interview libraries, it is informative to consider their differences. Quantitative data in previous tables indicate that Latino students have less access to the library during lunch and breaks. They get less instruction in using the Internet and information literacy skills, and have less access to the Internet, but more access to subscription databases, both in the library and using remote access. Interview data provide a more in-depth look at these variables, and indicate that these numbers are somewhat misleading.

Access to Print Materials

On the average, there are 20% more print titles in the predominantly Latino student school libraries, as indicated by the California State Library Survey data. However, in this study group, there is also an average of 30% more students in Latino schools. Further, interview data indicate Latino students could check out fewer books at a time than white students. For the Latino students, books in the school library may be their only source of reading materials, while the predominantly white schools in this study are located in more affluent areas and may have access to more resources. One teacher librarian, discussing the summer reading that is assigned to students at the

predominantly white school, commented, “We give the public library our book list. We give the bookstores our book list. We do the book fair here where they have access to all kinds of great books from the summer reading list. They have a lot of access to books.”

Contrast that environment with the one described earlier where “some parents don’t let their children use the public library, which is a few blocks away, because of concerns for their safety.” While the size of the library collections appears comparable, access to print resources may be different for the two study populations.

Within the school library collections, different resources are available to meet the needs of the student population, including a range of reading levels for both Latino and white students. For Latino students who are bilingual or second-language learners, there were varying numbers of Spanish language materials, the largest percentage being around 20%. An emphasis on supporting English language learning was noted at one primarily Latino school.

Magazines are part of the offerings of all the libraries, but appear to be more heavily used in libraries serving primarily Latino students. According to the teacher librarians at these predominantly Latino schools, “They don’t have magazines at home.” “Magazines are extremely popular with our Latino students.” Magazines provide a picture-rich resource with limited print content, so may be more accessible to students who are not proficient in English. The content is also motivational, dealing with concepts familiar and popular with students such as pets, fashion, and personalities in the news.

Access to Technology Resources

The teacher librarians who were interviewed also saw audiobooks as important in the Latino libraries. One teacher librarian tagged both the print and audio versions, so students would know that both formats were available. Access to computer technology appears to be comparable between Latino and white predominant schools and the number of subscription databases appears similar for both populations. However, the data are somewhat misleading. Interview responses indicate more software programs available for primarily white students: "Six subscription databases, digital newspapers and magazines, ebooks, *Moodle*, access to public library databases…" (Interview with 2W). "*Keynote, PowerPoint, Excel, Iphoto, Ichoose,* one database that can be used school wide" (Interview with 5W). "*World Book, Novelist K-8, Gale* databases, *What to Read Next?, NoodleTools, Excel, Inspiration*….." (Interview with 6W).

Contrast that list of digital options with those provided at schools serving 70% or more Latinos. In these schools, students have access to *Word*, the Internet, digital databases provided through the school district, *Rosetta Stone,* and *Accelerated Reader*. While the number of online subscriptions is comparable, the number of digital tools available to students differs between white and Latino predominant schools.

Library Services at High Performing, High Latino Population Schools

The third question that this study was intended to answer involved an analysis of the library services or strategies that are provided by teacher librarians at high performing, high Latino population schools. Answers to this question were found in both the quantitative and qualitative findings. Interview data were helpful in

providing examples of the kinds of materials teacher librarians select for primarily Latino libraries that are seen as effective. These included lower level reading materials, audio versions, illustrated books and high interest series. Books in Spanish were included in the collections in the predominantly Latino schools to support the needs of Spanish speakers while English fluency is attained. Interestingly, titles that are high interest in English are also high interest in Spanish, according to the interview teacher librarians, and this is supported in the literature (Allen, 1993). Magazines were mentioned by all interviewees as popular with Latino students.

The quantitative data provide some insights into strategies and resources that are in place in the ten highest performing Latino middle schools in this study. In these schools, there is 13% more access to paid online databases and 6% more access to a library website with resources than is available in the lower-scoring Latino school group. Furthermore, 21% more Latino students in the high scoring group have access to audiobooks than the Latino students in the larger study group. In the highest scoring Latino middle schools the level of collaboration employed by the teacher librarian was 12% higher than that provided in lower performing schools. Information literacy instruction was also more evident, with 26% more instruction available for students in the top Latino schools in this study.

To support Latino students who are English language learners, programs such as *Rosetta Stone* (a language teaching program) are provided through the school library. Language barriers may limit or preclude the use of standard databases where, even though articles may be translated to other languages, the search strategies are in English. One teacher librarian in a primarily Latino school met this challenge by

teaching students to use the Internet and search for information in Spanish as well as English.

Summary

In summary, several findings emerged from the data. The level of professional library staffing was found to be positively and significantly correlated with CAT/6 reading scores. Statistical correlations with CAT/6 reading scores also support the importance of access to reading materials in digital formats, a finding also supported by the interview data. The data suggest that selected print materials that range in reading level and are picture-laden may increase Latino students' interest in reading. However, the number of library materials was not significantly correlated with reading scores. This is contrary to the findings of most of the large library studies, and may be explained by the literature that suggests that Latino students are less motivated by choice than their white counterparts (Markus & Kitayama, 2003). It follows that reading guidance and promotion of reading materials may be key strategies in encouraging Latino students to access the print holdings of the library.

The comparison of high performing and low performing Latino schools indicated a relationship between the level of technology resources and student achievement. In almost every comparison, the higher performing schools provide more technology access, except for Internet access. While lower performing schools provided 7% more Internet access, there is no data to determine how students may be using the Internet. As noted with access to books, access alone may not be effective.

Hypotheses

The following hypotheses were proposed for this study and some conclusions may be suggested:

- Hypothesis 1: School library access and resources, with services provided by a certificated teacher librarian staffing, show a positive relationship to middle school Latino student achievement, as reflected in standardized reading scores.

In this study, a significant relationship with the level of professional library staffing to CAT/6 scores was determined, supporting this premise.

- Hypothesis 2: Strategies implemented through the school library to increase student achievement differ between middle schools that serve primarily white students and those that serve primarily Latino students.

This hypothesis is supported by the study findings, where there was a difference in the level of services and the kinds of strategies employed to support student learning.

CHAPTER 5: DISCUSSION

School library services and resources currently occupy the center of a "perfect storm." Like fishing boats in the book by that title (Junger, 2007), library services are buffeted by three different storms: changing demographics, changing information technologies, and changing roles and responsibilities. These mirror the framework of the three overlapping spheres of culture, information and education suggested as the context for the school library in this study. Within this vortex, this study considered ways in which middle school libraries may, or may not, be meeting the academic needs of Latino students.

Force of the Storm: Changing Roles and Responsibilities

Roles and responsibilities for both classroom teachers and teacher librarians have changed dramatically in response to changing demographics, technology, and the force of No Child Left Behind testing mandates. These changes have impacted the school library perhaps more than other areas of the school community. For example, studies of how students use library resources may assume ample library access time, but this study found that this may not be true for Latino students. In any school, students compete with other students during limited time periods for seating, for popular print titles and formats, and to use limited technology resources. Where the school population is larger, a smaller percentage of students may use the library during open periods, and the predominantly Latino schools in this study were consistently larger than the primarily white schools. Interview data indicate that access is further curtailed by meetings and testing that takes place in the library. In lower socioeconomic areas, access after school may not be perceived as safe. These

logistical barriers may be mitigated by scheduling all classes through the library on a regular basis, especially in larger schools, ensuring access for all students. This is not to negate the option for classes to use the library as needed for projects and research. Flexible use of the space, with opportunities for classes to check out books while other classes work on research, was an effective solution for one of the high performing predominantly Latino schools.

While this seems an easy solution, in reality, it is not. The same No Child Left Behind (NCLB) legislation that pointed a spotlight on achievement gaps has also focused educators on using targeted remediation strategies and programs for students who need extra help, and these are perceived as separate programs, implemented in the classroom or computer lab, seldom including library services and resources. NCLB has also heightened an awareness of how many concepts will be tested and therefore must be taught during precious classroom minutes. Student time spent browsing books or digital resources may be perceived as wasted time, a premise that is counter to the findings of this study. The data suggest that to increase cultural and language fluency, Latino students need access to high interest, illustration-rich, culturally relevant, content-accessible books, print magazines, and digital resources. Scheduling and circulation policies should ensure that every student has a book to read for pleasure, every day he or she is in school

The focus on testing has also had the unintended consequence of impacting library access for students, where that facility is used for testing. Given that student reading scores are a focus for education, library access for students should be a priority and one component of the overall intervention programming

Movement of the Storm: Changing Demographics

Strategies determined to be successful in prior studies were reconsidered in this study in terms of Latino student needs. The quantitative data indicate that Latino students in this study group are provided with less access to the school library, attend larger schools, are provided with fewer resources, and receive a lower level of traditional library services. The data also show a higher percentage of poverty indicators and English language learners in these predominantly Latino schools, both of which have been found to correlate with lower test scores (Baughman, 2002; Baumbach, 2002; Baxter & Smalley, 2003; Burgin & Bracey, 2003; Loertscher, 2003; Miller, Want, & Whitacre; Todd, Kuhlthau, & OELMA, 2004; Sinclair-Tarr & Tarr, 2005; Smith, 2001; Smith, 2006).

Books are perhaps the most obvious library resource for Latino students. Other studies have found significant relationships between the number of books in the library collection and student achievement on standardized tests, but in this study, there was no clear relationship between the number of books in the predominantly Latino middle school libraries and CAT/6 reading scores. More important than the number of books may be the content of the books in the library. A traditional Eurocentric, middle-school-age-appropriate print collection may not motivate Latino students to read, nor provide the level of access needed by students unfamiliar with academic cultural norms and challenging vocabulary. To address this cultural and language mismatch, each of the library teachers interviewed who served Latino students provided books in a range of reading levels to encourage emergent readers, including titles that are “picture heavy” or clearly intended for lower grades, a strategy

also supported in the literature and by studies of language acquisition and free voluntary reading (Krashen, 1993).

School library practitioner literature recommends providing print materials that support multicultural perspectives (Arsenault & Brown, 2007; Jackson & Robertson, 1991), and second language pedagogy suggests providing materials in the language of origin and entry level English language materials (Krashen, 1993; Peitzman & Gadda, 1994). Interview data support a contention that this is in place for the highest performing Latino schools in this study, and that alternate formats may also be effective in providing access to information. Of particular note is the evolving format of audiobooks in recent years, from cassette tape to compact disc (CD) and more recently to MP3 digital format, notably the *Playaway* (small digital audio player). Interview data support a finding that audiobooks are popular with Latino students, though quantitative data did not indicate a significant level of correlation (r = -.158, n = 73, p = <.05) between audio format and academic outcomes. In this study population of primarily Latino schools, the actual number of audiobooks available for checkout is a small percentage of the collection (.5%), and a larger number would provide more reliable data. The *Playaway* format provides digital content and player as a unit, so students are not challenged by a lack of access to appropriate technology, important for students who come from less affluent families. Students who are not fluent readers may find that audiobooks provide a means of acquiring cultural and social capital and building vocabulary. This may be especially true for English language learners, whose grasp of social language may exceed their comprehension of

academic language. The popularity of this format, as indicated in the interviews, supports using audiobooks as a motivational instructional tool.

Print versions of magazines are another information resource that was consistently mentioned in the interviews. The teacher librarians indicated that these are a popular reading option for Latino students, with a picture-rich format to help students interpret content. These are available in Spanish, bilingual, and English to meet the needs of varying levels of language fluency. The number of books in the home is an indicator of the level of poverty (Catterall, 1998), but this study indicates that number of subscription magazines may also be an indicator. One of the teacher librarians noted that in her high poverty community, students have no access to magazines at home. State Library Survey data are not collected from participating libraries on the number or kind of magazines that school libraries provide, so quantitative significance for this resource cannot be determined. However, interview data support this finding.

In providing materials for students to read, a related topic mentioned in one of the interviews is summer reading. Studies indicate that students lose reading skill if they do not read during the summer. Summer reading programming may be a strategy that would support Latino students who have less access to print materials. Some specific suggestions include having the teacher librarian describe different books to students during the last month of school, under the premise that students will be more likely to read books that have been recommended personally. Older titles in the classroom library and donated books can be sent home with students on the last day of school, providing motivation to read over the summer. If it is possible to keep the

school library open during the summer, this may provide additional support for summer reading (Gambrell, 2008).

Eye of the Storm: Changing Technology Resources

Some print resources may be better provided in digital format, especially reference materials, which are becoming increasingly available as subscription online databases. School library studies have shown that access to subscription databases is a significant factor in student achievement (Lance, Rodney, & Hamilton-Pennell, 2002a). For students from low income families, access to a computer outside school that is capable of high speed Internet connectivity may be problematic, creating an additional barrier to information access. The data underscore the presence of a digital divide between cultural and socioeconomic groups (Prensky, 2001).

Access to technology at school during student visits to the library is limited by the number of students, school library hours, and the availability of computers. However, computer access is only part of the overall picture of technology use—how students use technology can be problematic. The interviews support a finding that in school libraries, computer use is limited by adult concerns regarding what students will access online, where a vast array of inappropriate websites are readily accessible. Latino students are using the Internet to access social networking websites, which is also true for white students, a finding echoed by several interviewees. The implication is that students learn and use technology that is relevant to their lives and they are comfortable with resources that allow them to interact with friends. Given that students are able to find access to technology portals for social networking, this format may prove a useful means for engaging them in material related to educational

learning objectives. For example, the teacher librarian might create a blog or wiki on a particular subject and ask students to post comments or research online projects. Moodle, a free web-based instructional environment, is another venue for creating a digital learning resource that is available whenever students have access to a computer. Cell phones are becoming more sophisticated, so students can now access online instructional resources through that technology and the potential is there for cell phones to be used as educational tools.

Interview data indicate online subscription resources are regularly utilized for research and projects by the highest scoring predominantly white schools, less so for primarily Latino schools. The interviews also indicate that not all classroom teachers have embraced technology resources, many preferring print-based student projects. This is no longer acceptable, if schools are to prepare students for a world dependent on information and technology. If technology use is integrated into assignments, students may experience academic applications and learn information search strategies in a supportive environment. The teacher librarian is in a key leadership position to help coordinate this integration. For students who are struggling with cultural content or vocabulary, many of the available subscription databases provide a choice of reading levels, further reducing barriers to accessing academic content. That, combined with translation that is built into some of these programs, makes databases a potentially rich resource for Latino students.

To increase integration with classroom instruction and to make it a seamless transition, digital resources need to be accessible from the classroom and other computers that students use on campus, in addition to being accessed from home.

The emphasis on library website-based resources that came from the study interviews underscored the need to provide other resources, including bibliographies and lesson plans where they are always available and easily located.

Beacon in the Storm: Staffing and Instructional Support

In this study, it was determined that professional staffing is a significant positive factor in CAT/6 reading scores for predominantly Latino schools. In addition, while all the interview libraries were staffed with full time certificated teacher librarians, they all had paraprofessional support staff. In selecting schools for this study, only professional staffing, student ethnicity and high CAT/6 reading scores were considered, so it is striking that the teacher librarians in this study all have paid paraprofessional support staff. This staffing level positively affects student access, since the more hours that the library is staffed, the more likely that the library will be open longer hours and the greater the chance for students to access the library services.

This staffing level also affects the level of instructional support. Library warehouse functions of circulation and shelving limit or preclude a teacher librarian without classified support from developing collaborative lessons, working with classes and individual students in the library, maintaining an interactive website, and selecting resources in varying formats. Classified support is especially important if the teacher librarian is to provide additional help for struggling students. The interviews also indicated that the presence of caring adults in a safe environment is as important for students as the resources and instructional support of the library.

All the teacher librarians emphasized the importance of one-on-one positive contact with students to encourage and support reading. They talked about

establishing a personal connection with students, meeting their affective needs as well as informational needs. Finding the right book for each student was mentioned several times and in support of these findings, regular classroom visits by the teacher librarian for book-talks or mini-lessons might help students feel more connected to the library and its resources. Recruiting student aides who represent the different ethnicities of the school could help to create a welcoming library environment and allow opportunities for one-on-one instruction in using various library resources. To provide additional opportunities to interact with students, the teacher librarian might sponsor a student club or reading groups, and in doing so, create another option for students who need to feel included.

The quantitative data were limited to whether or not various kinds of instructional support were provided, and the interviews provided clarifying information. The interview teacher librarians were consistent in the instructional strategies they found effective, though there were differing levels of technology implementation in evidence. In response to the question about what strategies are employed, the following emerged: scaffolded direct instruction, project-based learning in collaboration with teachers, guided practice using Internet resource, and instruction in using various software programs. At predominantly white schools, Big6 or similar strategies are used to teach the research process, but in Latino schools, teacher librarians felt the need to modify the research steps and focus on what might be most valuable for students. This was done by targeting fewer research steps or selecting specific information literacy standards to use as a basis for instruction.

Specific strategies used with Latino students included having students work in pairs, reading and discussing what they read; using photocopies of accessible information as resources for research projects; conducting lessons in Spanish; audio or video recordings of students projects; and student presentations to other students. Reading aloud to students is another technique, and one teacher librarian used *Digital Presenter* (a paper projection system) to show students the illustrations in books as she read aloud. Being able to see the illustrations clearly supports further understanding of the concepts in the text.

A related and unexpected finding was the limitations the middle school age span imposes on the holdings of the school library. There is a maturity difference in reading interests between sixth and eighth graders, and a concurrent dip in California Standards Test language scores (reading/writing) between seventh and eighth grade. Solutions proposed included bringing eighth grade classes in regularly to check out reading materials and providing more mature titles for eight graders on a parent-permission basis.

Additional options might include a cooperative arrangement with the public library to provide books for these older readers, checked out through the online catalog and delivered to the school. Another idea might be the provision of a library shelf of more mature, high interest paperbacks, available only to eighth graders, subject to prior review by the teacher librarian. No matter how the circulation of materials is structured, providing more high interest, challenging materials that are monitored so that they cannot be accessed by younger students might help support the

reading needs of this group. These materials must meet all the criteria already established for reading levels, formats, language options and illustrations.

Island in the Storm: Library as Place

Finally, the "library as place" was a concept that all the interview teacher librarians described. Through guest speakers, book displays and programs, clubs, contests, games, decorations and other special events, students are encouraged to be in the library. For Latino students especially, this may be a valuable service, reducing what has been termed "library anxiety" (Onwuegbuzie, Jiao, & Bostick, 2004) and helping students learn to navigate informational facilities and systems.

"Library as place" also means student safety. Bullying is common on middle school campuses and the library provides a haven during lunch and breaks for students who may be targeted by larger students or student groups. In low socioeconomic areas, the school library may also serve as a safe place for students to study after school. Maslow's (1954) hierarchy of needs, generally accepted in education as a guide for supporting educational needs by first meeting physiological needs, refers to the importance of a safe environment before learning can take place.

Additionally, the school library may provide a central meeting location for families. Because of the group culture that is traditionally Latino, providing resources that can be part of family interactions, such as reading to siblings, could be included in school library services. The importance of family for Latinos supports a recommendation that parents should feel welcome and be invited to library events, especially if opportunities are provided for their children to receive recognition.

Charting a Course: Implications for School Library Leadership

This study determined that middle Latino students in California receive lower percentages of service through the school library than white students. Interview data indicate a need for teacher librarian instructional strategies and resources adapted to Latino students learning styles that support both cognitive and affective domains. The data also suggest a need for a different model of how the school library resources are accessed and utilized by Latino students. The middle school teacher librarians who worked with Latino students indicated such a need, through their responses to the question on instructional strategies for information literacy instruction. All had adapted traditional information search models to meet the needs of their students, and all indicated a need to simplify the process, given time and resource constraints.

Kuhlthau's Information Search Process (ISP) provides the only research-based structure for library information access and use, and moved library instruction from a transmission approach to a process approach. Kuhlthau envisioned four components of a successful school library program: "a constructivist view of learning, a team approach to teaching, competence in designing process assignments, and commitment to developing information literacy" (Kuhlthau, 2004, p. 163). Adapting that structure to better support Latino student needs suggests a less linear approach and one that is more sensitive to the linguistic, cultural and learning style differences in students. A research-based model that may have potential to meet this need was developed by Foster (2005) and is composed of four interrelated processes. Foster proposed an opening or orientation and consolidation phase where students begin learning about their topic and incorporate a number of information seeking strategies. After

determining what the problem is, students consider their external context, which includes time constraints and access to resources. Internal context is also considered as students are encouraged to use their experience and prior knowledge of the problem. Four cognitive approaches are suggested that include flexibility, openness to new ideas, looking at information in different ways, and considering the overall scope of the problem. Foster's non-linear information-seeking process recognizes the strengths and resources that students bring to their education and allows flexibility for differing home environments and resources, important for Latino students from varying backgrounds.

Another non-linear information seeking strategy borrowed from technology applications is "berrypicking," proposed originally for online information systems users (Bates, 1989). The berrypicking strategy involves using a variety of sources and gathering information in bits and pieces as the information seeking process evolves. As new information is collected, it suggests other information needs, similar to moving around in a berry patch, seeing a ripe berry, and then glancing back to see another ripe berry that was bypassed. As with the Information Search Process, teacher librarian intervention to provide instructional support and guidance is indicated.

A combination of Foster's and Bate's information seeking models may align with the context model proposed for this study and provide access through indicative, physical, cultural and linguistic inclusion. A non-linear approach might also better meet the needs of students who are "digital natives" (Prensky, 2001) and who have become adept at integrating technology into many aspects of their lives.

Beyond the need for an information seeking model targeting the needs of Latino students, there are implications for the leadership role of the teacher librarian, which may be pivotal if the school library program is to be integrated into the overall educational program, providing the support that Latino students need. This is an "age of interdependence" (Senge, 2006, p.69) in which there is a shift from seeing parts—the library as a separate entity, for example—to seeing the library program as an active participant in the overall school program. There is an opportunity to implement value-added decision making, through providing a unique solution to a problem (Schwab & Spady, 1998). The library teacher is uniquely positioned to serve as an instructional leader in both information literacy programming and information resources support. *Information Power* defines the teacher librarian role under four headings: teacher, instructional partner, information specialist, and program administrator (AASL, 1998, p. 4-5). These four roles will serve as guideposts for a deeper look at this greater leadership opportunity.

In the teaching role, the teacher librarian needs to be aware of the varied instructional needs of all students, but especially the needs of struggling Latino learners. Thanks to the number of tests and the ease of accessing test data within a school, information can be collected to guide library teaching practice. Instructional strategies that have been proven to be successful with Latino students in the classroom setting may be implemented and evaluated as part of information literacy instruction, utilizing both formative and summative assessment data. If students are not successful using traditional methods, other ways of reaching them need to be implemented, using a purposeful approach. Double loop learning is indicated, where test data are collected

and used to guide a re-examination of core values and beliefs, outcomes and actions (Argyris & Schön, 1996). Teacher librarians must consider the overall educational program and determine how they can best serve the needs of students, working interdependently with the administration and classroom teachers.

To ensure universal access to information resources among the diverse group that comprise Latino students, integrating technology as both a teaching tool and a learner resource is indicated. The need for illustration-rich materials, adapted reading levels, and Spanish language options suggested by the qualitative findings of this study may be provided through technology resources and guidance in their use, building on the expertise students already have for manipulating digital content. Social networking, for example, is a communication tool that could be integrated into collaborative learning projects that are meaningful to students.

The second teacher librarian role, that of instructional partner, is especially relevant as changing technologies impact how information is communicated. Teacher librarians are well situated to become leaders in technology implementation and use. Many are already doing so, as indicated by the interview findings. When technology is integrated into information literacy lessons, teacher librarians are modeling technology-based instructional practice for classroom teachers. Classroom teachers introduced to technology applications through observing and participating in the implementation of teacher librarian instruction may use these technology tools for other applications and there may be a positive impact on student learning. In this context, the school library website could become a vital instructional resource for the entire school. In the highest performing schools in this study, lists of resources, lesson

ideas, links to useful digital information sources and reading motivation activities are all provided through the library website portal.

The third teacher librarian role is that of information specialist. Teacher librarians are charged with selecting the materials provided through the school library. For the general student population, the number of books in the school library has been correlated with academic achievement. However, the findings of this study indicate that this is not the case for primarily Latino schools. A library collection that reflects traditional content and subject-area balance may not adequately support Latino student needs. Rethinking the content of school libraries to support the needs of Latino students warrants a "zero-based" approach to collection development. The teacher librarian must determine what materials are most effective and how these materials should be arranged for optimal access. If an arrangement similar to a commercial bookstore better meets students' needs, that approach should be used. While it might be argued that such an arrangement does not prepare students for accessing material in a college library, a counter argument is that a school library arranged according to the Dewey browsing system also does not prepare students for the Library of Congress system used by most university libraries. The point is to teach students how to use systems to locate information, whether it is Dewey, Library of Congress, or Google.

While print materials support building reading skills, digital resources may provide more effective access to information for projects. However, student access to the Internet has been viewed with some misgiving for two reasons, safety and ethics. Through the Internet, students connect not only information sources, but people anywhere in the world. Controlling and monitoring what is accessed can be

challenging, as students essentially pass digital notes to the world, in place of the paper notes that were passed in class a generation ago. Nevertheless, students must have this access, because accessing and using digital information is a skill they need to learn and use effectively. The study findings indicate that while primarily Latino schools are providing Internet access, they lag behind primarily white schools in providing students with instructional support on utilizing it.

Internet access without supporting instructional guidance further supports Buckland's contention that resources alone are not sufficient for learning (Buckland, 1991). With any given Google search potentially yielding more than a million sources, students need to know how to effectively locate, evaluate and use the plethora of digital information so easily accessible. This may be especially true for students whose English language reading experience has been limited, and who therefore may have less background knowledge for determining search strategies and evaluating website content. If they are to learn these skills, guided practice is indicated and subscription databases provide the necessary instructional tools.

Compounding the issue of access through the Internet is that of ethical use of digital resources. The popularity of plagiarism detecting programs, especially notable at the university level, indicates the level to which this has become a concern. Understanding the concept of plagiarism and digital copyright is difficult for many students, and especially for students who are limited in their English-language vocabulary. Copying information is a temptation for most students, and so the role of the teacher librarian now includes teaching ethical digital use.

The last role of the school librarian is that of program administrator, developing policies and procedures for managing the library and library staff. This is the traditional management role of the school library teacher, and is predicated on the central role of the library in the instructional program. The potential issue with this advocacy for the role of the school library program is that it may be perceived to be separate from the overall instructional program. To be effective in an environment where information technology and demographics have changed dramatically, school library programming and resources may be better seen as an integral component of the school professional learning community, as suggested in Senge's systems approach (Senge, 2006). To achieve this integration of programming, thinking outside the walls of the school library for resource allocation and management is indicated. Classroom access to the library catalog and digital resources is one way of supporting school wide integration of library resources, and is generally provided in most schools. Many subscription databases provide access for students and teachers from outside the school environment, enabling 24/7 resource use. Beyond this, circulating resource collections to use in the classroom may provide more student access, helping mitigate the inequity created by the larger size of the student population in primarily Latino schools. Instructional support for using resources may be provided digitally, through PowerPoint presentations, live broadcasts, blogs, podcasts, wikis, and links to website resources, allowing the library teacher to effectively multi-task. These are only some of the alternative ways that library programming can be provided to the entire learning community of the school, unlimited by time or space constrictions. It behooves the 21st century library teacher to think beyond the walls of the physical library and perceive

that the entire school is now a professional learning community in which she or he must assume a leadership role.

In addition to these four roles of the library teacher, there is an increasing need for "soft skills." In a networked world, employers—including school administrators--look for people who work well with others, who are committed to learning for all students, who focus on district objectives and not their own area of expertise, and who are collaborative but can also think for themselves. These skills are becoming more important than technical skills, which can be learned. Combined with leadership ability, these skills are essential for the library teacher if the school library program is to evolve and support changing student needs, truly preparing all students—including Latino students—to be successful in the 21st. century.

Further Research

This study has proposed a new model for instruction through the school library, one that is more inclusive than past practice and may encourage teacher librarians to explore a new paradigm for more holistic library practice. Two alternative structures for information seeking have been suggested that may be more effective with Latino students than those currently in use, and there is potential for application to all students. Further research is needed to determine how these strategies may be incorporated into the overall library program, and if this change in thinking may indeed improve student academic outcomes.

More research is also indicated on how school library teachers are currently meeting the needs of Latino student populations. The study findings indicated that on an individual basis, teacher librarians are successfully working with Latino students.

Results of such a study could be combined with new ways of implementing information literacy instruction to create a new paradigm for meeting the needs of Latino students through teacher librarian resources and programming.

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Appendix A: Phone/email Script for Initial Contact with Interview Subjects

Hello, <Librarian>,

My name is Jeanne Nelson and I'm the Library Services Coordinator at the Murrieta Valley Unified School District. I'm also a doctoral candidate in a joint program through CSUSM, UCSD, and SDSU. I am conducting a study on the impact of school library services on <Latino> student achievement. As part of this research, I need to interview middle school credentialed librarians in schools where the ethnicity of the student population matches the criteria selected for study.

This study has two objectives:

- To determine if there is a difference between library access, services and resources at schools with primarily Latino student populations, in comparison to schools with primarily white student populations, in California. If so, what are they?
- To learn what impact, if any, do school library access, services and resources have on <Latino> students' reading achievement?

The interview should take about thirty minutes and, with your permission, will be audio taped. The interviews will take place by phone, unless an in-person interview can be arranged.

Your name, school, and interview responses will be kept confidential, and I will be the only person with access to them. You may terminate the interview at any time.

Although there is no direct benefit to you for participating in this study, your participation may contribute to a better understanding of the relationship between school library services and <Latino> student achievement.

You do not have to participate in this study if you do not want to—participation is entirely voluntary. If you agree to be in this study, but later change your mind, you may withdraw at any time. There are no consequences of any kind if you decide you do not want to participate.

If you have any questions I will be happy to answer them now <or by email> .

Will you be willing to participate? If you are willing to participate, <please respond by email> .I will send a follow-up letter with more details, and contact anyone else at your site or district who needs to give approval.

Is there someone else at you school who needs to give permission for this interview? Will you check, and let me know if I need to contact them directly?

Appendix B: Cover letter/Informed Consent

California State University
SAN MARCOS

CONSENT TO PARTICIPATE IN RESEARCH

Dear <Librarian>

Jeanne Nelson, a doctoral candidate in the Educational Leadership Joint Doctoral program through CSUSM, UCSD, and SDSU, is conducting a study on the impact of school library services on <Latino> student achievement. You are invited to participate in this study because you are a credentialed middle school librarian at a school where the ethnicity of the student population matches the criteria selected for study.

This study has two objectives:

- To determine if there is a difference between library access, services and resources at schools with primarily Latino student populations, in comparison to schools with primarily white student populations, in California? If so, what are they?
- To learn what impact, if any, do school library access, services and resources have on <Latino> students' reading achievement?

If you agree to participate, you will be interviewed individually. The conversational style interview will take thirty minutes and, with your permission, will be audio taped. The interviews will take place by phone, unless an in-person interview can be arranged, at a time and place that is convenient to you. I am happy to come to your site for the interview, if it is logistically feasible.

I may need to contact you for a short, no more than 30 minute, follow-up conversation for clarification on your interview information.

There are minimal risks attached to this study. Every effort will be made to ensure confidentiality. Your interview responses will be kept confidential, available only to the researcher for analysis purposes. If the length of the interview is inconvenient for you, you may terminate the interview at any time without any consequence to you. Interview tapes will be locked in a safe place. Only the researcher will listen and transcribe the information you provide. The tapes will be erased or destroyed once this study is completed.

Interview responses will not be linked to your name or address, and there may be a follow-up session for clarification. So that I can contact you in the future, I will link your name to a unique identification number. I do this to ensure your responses remain confidential and that you feel free to respond as freely as possible. However, because a small sample with specific criteria is being used for this study, it may be

possible for someone to determine which schools are included in the study. There may also be something in the data that would allow someone to identify the school and/or participant. There is also the possibility that someone could access the data in the researcher's password-protected home computer. While every effort will be made to ensure confidentiality, you need to be aware of any potential risks.

You should know that the Cal State San Marcos Institutional Review Board (IRB) may inspect study records as part of its auditing program, but these reviews only focus on the researchers and the study, not on your responses or involvement. The IRB is a committee that reviews research studies to make sure that they are safe and that the rights of the participants are protected.

Participation is voluntary. You do not have to participate in this study if you do not want to. If you agree to be in this study, but later change your mind, you may withdraw at any time. There are no consequences of any kind if you decide you do not want to participate. You will be provided with a transcription of the interview and a copy of the findings when they are compiled. Reviewing these documents should take no more than ten or fifteen minutes. After reviewing either document, you may request to have your data removed from the study.

Your participation in this study may contribute to a better understanding of the relationship between school library services and student academic outcomes. The findings may support increased Latino academic outcomes, which in turn may contribute to reducing the Latino dropout rate and increase the number of Latino students graduating from high school. This research may add to the body of knowledge on meeting the academic needs of Latinos, who comprise a large percentage of California's population. You will also be provided with a copy of the study findings.

To express my appreciation for your participation, I am pleased to provide your library with your choice of one of the current California Young Reader Medal titles, appropriate for your grade level. You will receive this if you agree to be interviewed, regardless of whether you decide later not to participate.

If you have any questions about this study I will be happy to answer them. If you have any questions in the future, please contact me at 951-679-0346 (H). If you have any questions about your rights as a research participant, you may contact the CSUSM Institutional Review Board at 760-750-4029.

☐ I agree to participate in this research study.
☐ I agree to be audio taped

_____ _____

Participant's Name Date

____.

Participant's Signature

____

Researcher's Signature

Appendix C: Audiotape Recording Permission Form

As part of this project, an audiotape recording will be made of you during your participation in an interview, which will be used to collect data. Please indicate below if you are willing to consent to this use of the audiotape—this is the only use that will be made of this tape, and it will be destroyed when the project is complete. This is completely voluntary and up to you. In any use of the audiotapes, your name or school will not be identified. You may request to stop the taping at any time or to erase any portion of your taped recording.

You will be provided with a copy of the transcription of this interview within two weeks so that you can verify that your statements are accurately presented and make any corrections.

1. The audiotapes can be studied by the researcher for use in the research project.

_____
Initials

2. Your statements may be quoted verbatim or paraphrased in the final dissertation

_____
Initials

You have the right to request that the tape be stopped or erased during the recording.

You have read the above description and give your consent for the use of audiotapes as indicated above.

_____

Signature DATE Witness DATE

Appendix D: Interview Protocol

Interview Protocol: Strategies Employed Through the School Library to Increase Student Achievement in Reading

Interviewee name: _____
Date: _____
Time:_____
Place:_____
Consent form signed: Yes No

The purpose of this qualitative study will be to explore what strategies may be employed by the school librarian to increase student acquisition of information literacy skills that may enhance learning and achievement.

At any time, you may ask to stop the interview, and you do not have to answer any of the questions, if you would prefer not to.

Your school, name, and survey answers will be kept confidential.

Questions:

1. Tell me a little about your background and experience working in a school library.

2. Tell me about your collaboration with the teachers on developing shared lessons to enhance <Latino> students' reading skills.

3. What evidence do you have that this is successful?

4. How often can students access the school library? (prompt: before school, after school, individually during class, with classes)

5. How many print titles do you have in your collection? How many books may students check out at a time?

6. Does your library provide print/digital materials in other languages? Approximately what percentage, and what is the predominant language?

7. What services provided through the school library are most popular with (Latino) students, and why do you think this is so?

8. What technology provided through the school library is most heavily used by <Latino> students? Why do you think this is heavily used?

9. What instructional strategies do you use that are most successful with your student population?

10. How do you feel your collaboration with classroom teachers helps students from low socioeconomic backgrounds, if at all?

11. Where do you have the biggest impact, in terms of student learning outcomes?

12. What else can you tell me about working with your students in the library that you feel are best practices?

13. Is there anything you would like to add?

You will receive a copy of the transcript of this interview within two weeks, and may make corrections if needed. I may also need to contact you for more information relative to your answers.

You will also receive a copy of the study findings. At any time, you may decide not to participate and have your information removed from the study.

Thank you for being willing to take time from your busy day to help me with this project.

Appendix E: California State School Library Survey

CDE School Library Survey

School Information
CDS Code:
School:
Address:
City:
Select Academic Year
Academic Year: 2005 - 2006
2005 - 2006 Academic Year Responses
1. Do you have a dedicated common area in your school designated as the library?
Yes No
2. During a normal school week, (not summer or vacations) how many hours is the school library open for students?

0	26-30
1-5	31-35
6-10	36-40
11-15	41-45
16-20	46-50
21-25	51 or more

3. Based upon when the school library is open for students, either on their own, with passes, or with classes, check one or more of the following:
(A) Before classes start
(B) During class time
(C) During breaks (for example, nutrition)
(D) During lunch
(E) After school
(H) Summer school

4. Do you have at least one of the following paid credentialed staff working in the school library?
Credentialed library media teacher
Emergency-credentialed library media teacher
Credentialed teacher without a library media teacher credential
None of the above (This response will take you immediately to question 6)
5. Select the phrase below that best describes the hours worked by the credentialed staff.
More than one full-time equivalent
Full-time equivalent
Half-time or more, but not full-time equivalent
Less than half-time equivalent
6. Do you have at least one paid classified employee working in the school library?
Yes No
7. Select the phrase below that best describes the hours worked by the classified library employee(s).
More than one full-time equivalent
Full-time equivalent
Half-time or more, but not full-time equivalent
Less than half-time equivalent

8. Is the school library staffed by volunteers only?
Yes No
9. Enter the number of books in the school library collection at the end of the 2005-2006 academic year. Include reference books in your count and count each reference volume as one.

2,499 or less	25,000 – 27,499
2,500 - 4,999	27,500 – 29,999
5,000 - 7,499	30,000 – 32,499
7,500 - 9,999	32,500 – 34,599
10,000 – 12,499	35,000 – 37,499

12,500 – 17,499	37,500 – 39,999
17,500 – 19,999	40,000 – 42,499
20,000 – 22,499	42,500 – 44,999
22,500 – 24,999	45,000 – 47,999
	47,500 – 50,000
	50,000 or more

10. Enter the average copyright date of the books in the school library's 520 section. Include books in both the 520 circulating and 520 reference sections.

11. Check one or more of the following technologies available in or though the school library:
(A) Automated catalog
(C) Library web site without access to online catalog
(D) Automated library circulation
(E) Automated textbook circulation
(F) Internet access for students
(G) Online access to full-text periodicals or other subscription databases in school
(H) Remote access to online full-text periodicals or other subscription databases
(I) Video collection
(J) DVDs or laser disks
(K) Audio books (in any format, e.g. for MP3 player)

12. How much money was spent in the school library for the **purchase of library books** during the 2005-2006 academic year? Include processing costs if purchased with library books. (Any answer other than "$100,000 or greater" will take you to question 14.)

No Budget	$50,000 – $54,999
Less than $2,000	$55,000 – $59,999
Less than $5,000	$60,000 – $64,999
$5,000 - $9,999	$65,000 - $69,999
$10,000 – $14,999	$70,000 – $74,999
$15,000 – $19,999	$75,000 – $79,999
$20,000 –$ 24,999	$80,000 – $89,999
$25,000 – $29,999	$90,000 – $94,999
$30,000 – $34,999	$95,000 - $99,999
$35,000 – $39,999	$100,000 or more
$40,000 – $44,999	
$45,000 – $49,999	

13. If you spent more than $100,000 on books, enter the amount here.

14. How much money was spent in the school library purchasing library materials **other than for books** during the 2005-2006 academic year? Include periodicals (paper or electronic), technology and media resources and related equipment. Do not include salaries, conference expenses, routines supplies, maintenance agreements, district purchases of shared electronic databases, etc. (Any answer other than "$100,000 or greater" will take you to question 16.)

No Budget	$50,000 – $54,999
Less than $2,000	$55,000 – $59,999
Less than $5,000	$60,000 – $64,999
$5,000 - $9,999	$65,000 - $69,999
$10,000 – $14,999	$70,000 – $74,999
$15,000 – $19,999	$75,000 – $79,999
$20,000 –$ 24,999	$80,000 – $89,999
$25,000 – $29,999	$90,000 – $94,999
$30,000 – $34,999	$95,000 - $99,999
$35,000 – $39,999	$100,000 or more
$40,000 – $44,999	
$45,000 – $49,999	

15. If you spent more than $100,000 on materials other than books, enter the amount here.

16. Check one or more of the following funds used to purchase library materials during the 2005-2006 academic year. While some of these funds are no longer available, it is possible they were available to use in 2005-2006.
(A) California School Library Act Funds (last apportionment to schools in 2004-05)
(B) Instructional Materials Funds (IMFRP)
(C) State Lottery Funds
(D) Per Pupil Allotment (district or site)
(E) General Fund (district or site)
(F) School and Library Improvement Block Grant
(G) Fund-raising (parent groups, book fairs, etc)
(H) Title I (federal)
(I) Title V (federal)
(J) Local Bond Measure
(K) Improving Literacy through School Libraries Grant (federal)
(L) Start-up Funds
(M) Other (for example, one-time discretionary grants to districts)
(N) None of the Above

17. Which of the following terms best describes the method used to schedule classes in the school library?
Fixed/Block (classes scheduled at regularly specified times)
Flexible (open schedule, i.e. scheduled visits at varying times according to need)
Mixed (some classes block-scheduled, some flexibly-scheduled)
No class visits

18. Which of the following services and/or programs were regularly provided in the 2005-2006 academic year?
(A) Offered a program of curriculum-integrated information literacy instruction
(B) Informally instructed students in the use of resources
(C) Planned or conducted workshops for teachers
(D) Assisted school curriculum committee with recommendations
(E) Collaborated with teachers to develop, implement and evaluate student learning tow or more hours per week
(F) Provided teachers with information about new resources
(G) Provided reference assistance to students and teachers
(H) Helped students and teachers find and use resources outside the school library
(I) Facilitated interlibrary loan for students and teachers
(J) Provided reading, listening, and viewing guidance for students
(K) Helped parents realize importance of lifelong learning
(L) Coordinated in-school production of materials
(M) Coordinated video production and dissemination activities
(N) Coordinated cable TV, distance education, and related activities
(O) Coordinated school or library computers networks
(P) Provided access to online library catalog and instruction
(Q) Provided Internet access for students in the library
(R) Provided instruction on Internet searching and research
(S) Provided electronic access to a resource sharing network
(T) Communicated proactively with principal
(U) Attended meetings of school site council, two or more times per school year
(V) None of the above

19. Select the **two** library online subscription information databases most often used by the students. This question does not apply to CD-ROM databases. If you select "S", enter one or two of the most often used "other" online subscription database(s) that are not on this list.
(A) Career Cruising
(B) College Source
(C) EBSCO Kids Search—Middle and Elementary School K-6
(D) EBSCO Literary Reference Center
(E) EBSCO Points of View

(F) EBSCO Student Research Center (High School and Middle School
(G) Encyclopedia Americana
(H) Encyclopedia Britannica
(I) Facts on File Online Reference Databases
(J) Gale Biography Resource Center
(K) Gale History Resource Center
(L) Gale Science Resource Center
(M) Gale Student Resource Center
(N) Grolier Online (Scholastic)
(O) Grove Dictionary of Art
(P) HW Wilson Applied Science and Technology
(Q) HW Wilson Biography Indexes
(R) HW Wilson Reader's Guide
(S) NewsBank grade level or subject-related database
(T) Pro-Quest Culture-Grams
(U) ProQuest eLibrary
(V) ProQuest SIRS
(W)Teen Health and Wellness Database (Rosen Publishing)
(X) World Book Online
(Y) None

20. Enter two library online subscription information databases (not listed in question 19) most often used by the students.

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