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Parent Involvement and Technologically-Based Communications in Missouri's Top Performing Schools

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Doctor of Education

School of Education

DECLARATION OF ORIGINALITY

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or degree here or elsewhere.

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PARENT INVOLVEMENT AND TECHNOLOGICALLY-BASED FORMS OF COMMUNICATION IN MISSOURI'S TOP PERFORMING SCHOOLS

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Abstract

With ever-increasing accountability requirements, public schools need to seek the support of the most invested parties, the parents. Despite the good intentions of all involved, finding meaningful ways for schools and parents to collaborate on student learning remains a difficult task. The purpose of this study was to explore perceptions of Missouri parents and school personnel from the top-performing elementary schools in the state regarding involvement, to determine if a relationship existed between these attitudes and student achievement. Sixty-eight demographically diverse Missouri schools were included in this quantitative, correlational study. Examined were questionnaire items related to parental involvement and reported usage of technology to communicate with these important stakeholders. Relevant data from the Missouri School Improvement Plan's Advanced Questionnaire were compared with achievement scores from the Missouri Assessment Program achievement data. The most statistically significant links to student achievement were found among the variables encouraging parents to be involved and offering strategies to assist with learning at home. In addition, the researcher examined the types and degree of use for participating schools and found they largely rely on electronic mail, web sites, and voicemail to increase parental awareness of school business and performance. Other technologies used less frequently included Listservs, homework hotlines, and calling systems.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

KEY TO ABBREVIATIONS AND SYMBOLS

AECT	Association for Educational Communication and Technology
COT	Census of Technology
AQ	Advanced Questionnaire
ECS	Education Commission of the States
ISTE	International Society for Technology in Education
MAP	Missouri Assessment Program
MDESE	Missouri Department of Elementary and Secondary Education
MSIP	Missouri School Improvement Plan
NCLB	No Child Left Behind
PDA	Personal Digital Assistant
SETDA	State Educational Technology Directors Associations
SEDL	Southwest Educational Development Laboratory
SFCP	School, Family, Community Partnerships
SIS	School Information Systems
USDE	United States Department of Education
H_0	Null Hypothesis
r	Pearson r Correlation Coefficient
r^2	Coefficient of Determination
p-value	Statistical Significance
$\overline{x}$	Mean

CHAPTER ONE - INTRODUCTION

Parent Involvement And Technologically-Based Communications In Missouri's Top Performing Schools

"It takes a village to raise a child."

(An African Proverb)

Background

Federally mandated government policy, Section 1118, Title I of the No Child Left Behind Act (NCLB) requires public school districts to work collaboratively with parents living in the community to author a family involvement policy in order to receive Title I funding from the government. The primary goal of the family involvement policy is to focus on improving student achievement and should include a vision statement descriptive of the beliefs a school community has concerning the importance of home-school partnerships to higher student achievement (USDE: Parent Involvement Briefs, 2007).

Public schools are faced with ever-increasing pressure to elevate student performance on high-stakes assessments required by government mandates, which directly impacts every public school in the nation by tying government funding to performance. This Act called for states to administer yearly communication and mathematics assessments to all students in grades three through eight. School districts

must show annual progress to maintain governmental financial support. The NCLB Act also requires that all students must score in at least the proficient range on the state assessment by the year 2014. Since assessment performance serves as a primary factor by which school districts are judged and must show steady growth. Schools must seek the most efficient and economical means available for obtaining the necessary performance standards (Reynolds, Livingston, & Willson, 2006). Attendance rates, academic performance on high-stakes standardized assessments, and percentage of enrolled students graduating are all criteria by which school districts are judged. Therefore, school leaders must not underestimate the value of parental involvement to increase student achievement, and be willing to pursue all options available for doing so.

Missouri governor, Matt Blunt (2008), proclaimed September 7th through the 13th as *Parent and Family Involvement in Education Week*, to encourage families to remain aware of and involved in their child's education. Governor Blunt recognized that parent and family participation is crucial in determining success in school and life and, consequentially, made education his highest budget priority. This budget earmarked monies for technology. Governor Blunt posted the following on the Missouri State Government web page:

> Working together, we are ensuring education is the highest priority in our state with more than $1.2 billion in new funding in the last four budgets, but it is family involvement that helps makes these dollars go further because a parent's influence in their [sic] child's education is vital and has positive and lasting benefits for everyone. (Blunt, 2008, ¶ 2)

Technological advances have made it possible for school districts to provide parents and communities with additional opportunities to remain informed and involved in all aspects of the educational process. As society becomes more dependent on computer technologies for everyday tasks including job searches, information gathering, business transactions, and correspondence, it behooves those in the education field to recognize the potential these technologies present to improve communicative efforts and make everyday challenges less daunting (DeBell & Chapman, 2006). Educators cannot ignore the abundant possibilities technology has to offer to the academic world. Over time, increasing numbers of teachers are recognizing that computer technology may be just the vehicle to bridge the home-school communication gap in their efforts to increase student achievement (Debell & Chapman).

Theoretical Frameworks

With ever-increasing accountability requirements, public schools need to seek the support of their most invested parties, the parents. Extensive research has been conducted that has led to the realization of the positive effects of parental involvement on student achievement (Allen, 2005; Epstein et al., 2002; Mapp & Henderson, 2002). Dr. Joyce Epstein is the director of the Center for School, Family, and Community Partnerships at Johns Hopkins University in Baltimore, Maryland. The theory espoused by Epstein provided the framework to guide this study. Dr. Epstein's body of work provided the basis for the National Parent Teacher Association (NPTA) standards for school-home-community relations. Epstein's theory of overlapping spheres of influence identifies schools, families, and communities as the major institutions responsible for the socialization and education of children (Epstein et al., 2002). Ideally schools, families,

and communities work in concert to best meet the needs of the children they influence in positive ways. These entities should share common goals and actively participate in the decision-making process of the school (Epstein).

The United States Department of Education (USDE) Office of Educational Research and Improvement contracted with the Southwest Educational Development Laboratory (SEDL, n.d.), an institution committed to field-based research designed to enhance successful school and family partnerships. As a result, an annual meta-analysis regarding current family connections to schools was conducted (as cited in Mapp & Henderson, 2002). A synthesis of fifty-one studies of high-achieving students from all backgrounds found these students to have parents who are encouraging, discuss school, help plan for higher education, and keep children focused on learning and homework. This body of work entitled, *A New Wave of Evidence*, also served as a lens through which the author gained insight into and focus for the study (Mapp & Henderson, 2002).

Statement of the Problem

Levine (2002) cited the roles of parents as providing opportunities to practice and extend learning, as well as in developing those work habits necessary to be successful in school. Ninety-seven percent of parents expect their children to graduate from high school, and seventy percent expect them to earn a degree from a four-year college (Levine, 2002). An analysis of the impact of higher education upon earning power concluded

> Since about 1973 a college education has become the most direct path to well paid employment and financial security in the United States. Until the early 1970s one could achieve a middle-class lifestyle by being honest and working hard. But over

> the last 30 years a college education has become a requisite addition... A high school education or less is no longer sufficient and has not been so for three decades. (Mortenson, as cited in Dufour, R., Eaker, & Dufour, R., 2005, p. 14)

The teacher's role in the lives of students, while important, cannot compare with that of the parents who are the first teacher, and their influence, positive or negative, greatly impacts the child's educational future. According to research, almost all families care about their children and want them to be successful in school. Additionally, almost all educators want to involve parents and families but struggle with how to do so (Barbour, C., Barbour, N., & Scully, 2005). Despite the good intentions of all involved, finding meaningful ways for schools and parents to collaborate on student learning remains a difficult task.

Since 2001, Missouri schools have reported technology-related data to the state by building and districts in an annual census report. According to the Missouri Department of Elementary and Secondary Education (MDESE) Census of Technology (COT) Report (MDESE, 2008a), Missouri schools are using a variety of technological forms to strengthen the valuable home-school connection, including e-mail, voice mail, Listservs, automated absentee calling systems, and homework hotlines via telephone and Internet. Unfortunately, the use of this technology is not routine or widespread (MDESE). Hours of calling parents at home and writing notes that often go undelivered, and students being unaware of assignments made during an absence may be problems educators can eliminate or reduce through the use of computer-related technologies (Tobolka, 2006).

Research Questions

To investigate perceptions surrounding parent involvement and technological-based forms of communication in Missouri's top performing elementary schools thoroughly the following questions were examined:

1. What statistically significant relationships exist between specific parent involvement attitudes and student achievement?
2. What statistically significant relationships exist between specific school faculty attitudes surrounding parent involvement and student achievement?
3. What technological-based forms of communication are Missouri's top performing schools using and to what degree?

Independent Variables

The Missouri School Improvement Plan's (MSIP) Advanced Questionnaires (AQ). MSIP survey data collected during the 2007-2008 academic year from parents and faculty served as the study's independent variables (MDESE, 2008d). Specific items analyzed from the parent AQ included:

> #28. My involvement in my child's education has improved his/her achievement.
>
> #29. Parents are asked for input about school decisions.
>
> #38. I can talk with my child's teacher or principal whenever I need.
>
> #46. The school encourages parents to be involved.
>
> #49. The school offers suggestions about how I can help my child learn at home.
>
> #50. I am a partner with the school in my child's education. (MDESE, 2008d)

Items compared with student achievement from the faculty AQ included:

#18. Effective vehicles are in place for parents and community to communicate with school.

#19. In our school we communicate effectively to parents and the community.

#20. Parents are encouraged to discuss their child's educational needs with the school.

#63. My school provides suggestions to parents on ways to assist with their child's learning.

#64. My school views parents as partners in the educational process.

#65. My school has created specific strategies to better involve parents in the education of their child. (MDESE, 2008d)

Dependent Variable

Missouri Assessment Program Achievement Data. Cumulative scores earned by students enrolled in grades three through six during the 2007-2008 academic school year served as the study's dependent variable (MDESE, 2008c).

Hypotheses

H_0. #1. Specific parental involvement perceptions will not increase student achievement.

H_0. #2 Specific attitudes held by school personnel regarding parental involvement with schools will not increase student achievement.

Rationale for Study

Collins (2001) found that highly successful organizations simplified the institution's mission into a basic principle that everyone within it works toward. The United States of America guarantees the right of a free, quality education to all of its citizens. Educational communities that make it their mission to maximize the privilege of

education by seeking to advance all students to high achievement levels will benefit (Collins, as cited in Dufour et al., 2005).

For all of the current controversy surrounding issues of student achievement and accountability, it is not surprising that people forget that there is far less controversy concerning our shared desire to help more children learn, to reduce the achievement gap, and to improve the quality of teaching in all schools (Bessell, Singabub, Lee, & Schumm, 2003; Schmoker, as cited in Dufour et al., 2005). Nevertheless, parents sometimes fail to receive clear and timely information regarding educational practices and their child's academic standing and performance (Appleseed, 2006). Poor communication between academic institutions and parents result in depressed student success. Educational researchers have sought to identify the most effective means for involving families in the formal education of their children since the inception of education (Appleseed). Furthermore, school leaders too often fail to recognize the importance of parental involvement as a key strategy to elevating student achievement. As the achievement gap between poor and middle class students grows the necessity to create mutual respect among all parties involved, and find meaningful ways to routinely communicate school happenings becomes more evident (Bessell et al.).

Missouri students annually face the most difficult standardized test given in the nation (Dykman, 2007). In light of this fact, it is not surprising that half of our students fall below the level of proficiency in communication arts and mathematics (MDESE, 2008b). Yet, despite the rigorousness of the testing instrument, Missouri schools, like all others in this country must show annual growth to avoid government sanctions (USDE, 2007). For these reasons it is crucial that educators employ effective strategies to engage

parents, that lead to elevated student achievement. Involvement-related attitudes of parents and school personnel taken from the Missouri School Improvement Plan's (MSIP) Advanced Questionnaire (AQ) survey instrument were compared with their respective Missouri Assessment Program (MAP) performance and analyzed, in an effort to identify statistically significant relationships. The extent the study's participating schools used specific technology-mediated feedback systems to communicate with patrons was also statistically analyzed. The purpose of this study was to explore what relationships exist between perceptions surrounding parent involvement and student achievement in the highest performing schools in Missouri.

Limitations

Study results were based on responses taken from survey instruments. The responses reflect personal perceptions and would change over time. The researcher recognized that not all subjects would have given the survey equal attention. The number of subjects who did not complete the survey may also have been a biased indicator as many other viable reasons for not doing so exist.

Also analyzed was the COT Report, a state-required document submitted to the MDESE by every district. The annual report is normally completed by the district's instructional technology personnel, administration, or a faculty member. Possibilities exist for exaggerated technological opportunities and/or competencies and, therefore, must be considered a possible limitation to the study's conclusions (MDESE, 2008a).

The Missouri Assessment Program (MAP) was recognized as a valid and reliable testing instrument; however, some discrepancies do occur, as a portion of this test consists of open-ended constructed response items the students must answer. These items

are graded by trained individuals, but remain subject to human error and opinion (MDESE, 2008b). In addition, students taking the assessment would have had varying levels of commitment to their performance, testing anxiety, and ability beliefs.

Due to the diversity certain to exist surrounding teacher commitment and expertise, the instructional environments and culture of the participating schools may not be reflective of other school districts. Even schools that were demographically similar would have varying procedures and policies that would impact performance in unpredictable ways. In addition, study participants were limited to Missouri elementary schools.

Definition of Key Terms

The following terms were defined to better inform the reader of their intended purpose and meaning within the study.

Advanced Questionnaire. Survey data obtained from students, parents, and school staff to help evaluate educational processes in a district (MDESE, 2008d).

Communication. Interactions about school programs and student progress to mean all channels of communication that connect schools, families, students, and the community (Epstein & Jansorn, 2004).

Internet. A catch-all word used to describe the massive world-wide network of computers comprised of thousands of smaller regional networks scattered throughout the globe and designed to request and send information.

Listserv. An electronic mailing list (sometimes written as elist or e-list) is a special usage of e-mail that allows for widespread distribution of information.

Missouri Assessment Program. The Missouri Assessment Program (MAP) is an annual set of mandatory standardized tests taken by Missouri students. Each April, students in elementary, middle, and high schools take the tests in math and language arts. Performance is divided into one of four categories known as achievement level descriptors: Below Basic, Basic, Proficient, and Advanced (MDESE, 2008b).

Missouri School Improvement Program. The Missouri School Improvement Program has the responsibility of reviewing and accrediting the 524 school districts in Missouri within a five-year review cycle. School district reviews are conducted each year for approximately twenty percent of the 524 districts, and reports covering the areas of resource, process and performance are developed. These reports are reviewed by a Department School Improvement Committee, and a summary of each report and the committee's recommendations regarding accreditation for each district are presented to the State Board of Education for its approval. Each district also submits a School Improvement Plan, which addresses the concerns identified in the review report, and may request a re-review in order to improve its accreditation rating (MDESE, 2008d).

No Child Left Behind Act. Enacted in 2002, the Act requires annual testing of students and forces schools whose students do not improve at a steady rate to take remedial action. The remedies include professional help for teachers, extra tutoring for students, and transfers of students to higher-achieving schools. Schools that continue to underperform could ultimately lose government funding, be forced to replace their staff, or even relinquish school management controls to the government (Thum, 2003).

Parent involvement. This term is used broadly in the study, but refers to parents serving as advocates for their child and the school by attending school functions, tutoring

their child at home, and participating in the governance and decision making necessary for planning, developing, and providing an education for the community's children (Cotton & Wikelund, 2005).

School-Family-Community Partnerships (SFCP). The connections between schools, families, community individuals, organizations, and businesses forged to directly or indirectly promote student's intellectual development (Epstein, 2002).

Technology. For the scope of this paper, technology refers to any electronic means used for communicating student performance and school opportunities to district patrons.

Title I funding. Federal money distributed to states and then to schools, based on their percentage of low-income students, as measured by the number of students receiving free or reduced-price lunches (Furger, 2005).

Summary

Research overwhelmingly discloses the positive impact parental involvement has on student achievement (Allen, 2005; Epstein et al., 2002; Mapp & Henderson, 2002). William Bennett, former Secretary of Education, stated, "Not every teacher is a parent, but every parent is a teacher. The most important thing a parent can give a child is the sense of the importance of education" (as cited in Parks & Schulte, n.d.). By building strong connections between the school and home, the school would more effectively enlist the help of those most likely to be its biggest ally in a shared mission to educate children.

Chapter One offered the reader background information regarding the importance of parent involvement in schools, and how it relates to student achievement. Technological communication opportunities provide another avenue for patrons of a

school district to be connected and aware of real-time school events. Within Chapter Two, a thorough review of the most current research regarding parent involvement in schools and how technology may be used to bridge the home-school gap was clarified. In chapter three the study's design and methodology was presented and explained. An analysis and an interpretation of what the collected data reflected regarding the extent and methods to which top-performing Missouri schools and parents collaborate to increase student achievement was offered in Chapter Four. In Chapter Five the implications that the findings of this study may have on the operation of effective schools were examined.

CHAPTER TWO – REVIEW OF LITERATURE

"The test of the morality of a society is what it does for its children."

(Dietrich Bonhoeffer)

Introduction

According to Section 1118 of the No Child Left Behind (NCLB) Act public schools receiving Title I government funding must provide parents with key information regarding school business and teacher, student, and district performance. In addition, schools must document parent involvement policies that cite the roles of the district, administration, and parents in raising academic levels of students. Schools receiving Title I funds must also notify parents of their right to participate in the creation of the School Improvement Plan (USDE: Parent Involvement Briefs, 2007).

Educational researcher and author, Kathy Christie reminded us of President Kennedy's famous admonition, "Ask not what your country can do for you, but what you can do for your country" (Christie, 2005, p.646). Christie believed it was time for schools to commit to a similar principle, by asking not what parents can do for the school, but what the school can do to ensure educational equality for all and meet parental expectations (Christie). Schools must seek to employ educators who recognize the importance of listening to parental opinion regarding the academic needs of the child.

Too often parents may appear uninterested, when, in reality they feel as if their thoughts would fall on deaf ears (Christie).

The Education Commission for the States (ECS, 2008) found that large numbers of parents feel their involvement is either unnecessary or beyond their abilities to provide. The ECS policy statement included research-based data on the types of parental involvement that positively impact education. A synthesis of the findings reported the most effective involvement activities are demonstrated when parents help guide academic decisions by communicating and upholding high educational aspirations, assist with post-high school employment requirements and options, provide homework assistance, course-selection guidance, and financial support to their children (ECS). Meaningful involvement most conducive, to enhancing student performance, goes deeper and includes more than what is most easily measured and reported, such as hours of parental volunteering, money raised, or conferences attended (ECS).

Beyond the basic skills, 21st century students will need the additional technology-based competencies to survive and compete in today's global market (Nagel, 2007; Starkman, 2008). Students will have to think critically to solve problems, apply knowledge to new situations, analyze information, understand new ideas, collaborate, and communicate effectively (Nagel; Starkman). Since the majority of parents indicate satisfaction with, and express an interest in, schools, according to Phi Delta Kappan's most recent poll, schools would be remiss if they failed to solicit parental support to aide in preparing students to meet such lofty goals (Rose & Gallup, 2007). School may realize enhanced achievement levels at all levels, and for all students by holding parents by

taking steps towards parental inclusion in the education process (Christie, 2005; Dufour et al., 2005).

To research parental involvement and how it affects student achievement, the researcher focused on current achievement levels existing among American students, according to state, national, and international assessments in the literature review. Additionally, the attitudes and opinions regarding public education and student achievement held by citizens in this country, and research surrounding parent involvement in the public school setting were considered. Barriers that might exist between parents and schools and methods used to successfully engage parents with schools were also examined. Finally, an analysis from current literature regarding the use and impact of modern technology to bridge the home-school gap was explored.

Student Achievement

Current student achievement levels in the United States were revealed in data from the National Assessment of Educational Progress (Lee, Grigg, & Donahue, 2007) publication entitled, *The Nation's Report Card*, the Progress in International Reading Literacy Study (PIRLS), and Trends in International Mathematics and Science Study (TIMSS). Results derived from The Program of International Student Assessment and the World Economic Forum's global competitiveness reports were also considered, along with current data from the Missouri Assessment Program (MAP).

The Nation's Report Card (2007) informed the public regarding the academic achievement of elementary and secondary students in the United States. According to the report, American students in fourth and eighth grades have improved in reading and mathematics since the previous assessment administered in 2005. Sub-groups of the

population, comprised of students in the free-reduced lunch program and by socioeconomic status, also showed gains in both areas. Score increases across all performance levels were also reflected in the achievement-level results. Achievement level descriptors were defined by the Missouri Department of Secondary and Elementary Education (MDESE) with the following criteria. Below Basic referred to the lowest level of achievement on the state standardized test, and, like all levels, depended on a numerical value for the particular grade and subject of the instrument. Basic, Proficient, and Advanced also defined testing performance in ascending order. Reading percentages of students at or above Basic, at or above Proficient, and Advanced were higher in 2007 when compared to the percentages for previous assessment years (Lee et al., 2007). The percent of students at or above Proficient tripled from thirteen percent in 1990 to thirty-nine percent in 2007. When comparing the 2007 mathematics assessment to previous years, students also made gains at all levels of performance (Lee et al.).

Bracey (2004) cited several studies, when comparing the academic performance of American students to other countries. According to the Progress in International Reading Literacy Study (PIRLS) conducted in 2003, American students out-performed thirty-two of thirty-five participating countries. These results become more impressive when the vast cultural differences between Americans and other parts of the world are taken into consideration. American students are generally given more choice regarding their education, as well as more personal freedoms. This often results in their academic commitments becoming less of a requirement and more of a personal preference than students from other cultures, where educational pursuits might be mandatory or denied altogether (Bracey).

The Trends in International Mathematics and Science Study (TIMSS, 2003) reported that fourth and eighth graders in the United States rated as average or above in science and math, when compared with the other participating countries. This study was designed to help school policy makers and practitioners assess their comparative standing and gauge the rigor and effectiveness of their mathematics and science programs (Mullis et al., 2003). Measures taken to eliminate all possible confounding and extraneous variables, in an effort to make the instrument as reliable and valid as possible, were reported in the study's technical report (Mullis et al).

Tests have become the norm for reporting the success or failure of an educational system worldwide. This seems unfortunate in light of the fact that tests are correlated with socioeconomic status and often fail to generate data reflective of student's abilities (Bracey, 2004). Tests do not, and cannot, in many instances, measure personal qualities held in high regard by the majority of people. Qualities such as resilience and courage in the face of stress, work ethic, a commitment to justice and caring for others, or a dedication to the promotion of quality of life for everyone are exceedingly difficult to assess. People were thus left to value what could be measured over what could not, unless other studies were considered that investigated these types of personal characteristics (National Education Association [NEA], 2002, p. 1).

The Global Competitive Report (2003), from the World Economic Forum, an institution with the reputation of a high-profile think tank located in Geneva, ranked the United States number one among eighty countries in overall competitiveness, growth competitiveness, and microeconomic competitiveness. Thinking creatively and building upon previous knowledge, while simultaneously exhibiting abilities associated with the

marketing of new processes and products, have allowed the United States to remain on the forefront of technological advancement. Researchers conducting the study recognized the aforementioned attributes and cited them as the reasons behind the United States' ability to earn the highly coveted position (as cited in Bracey, 2004).

The Missouri Assessment Program (MAP) is an annual set of mandatory standardized tests taken by students each spring. The MAP results are received by all districts in late summer following the spring testing period. The Missouri Department of Elementary and Secondary Education (MDESE) reported district and statewide MAP data on the Missouri government web site (MDESE, 2008b). In the area of communication arts, more than half of students enrolled in grades three through eight and eleventh performed at the Basic or Below Basic achievement levels on the 2007-2008 assessment. The mathematics assessment, administered in the same year to grades three through eight, but to tenth graders rather than eleventh, yielded nearly identical results, with the exception of sixth grade students which had 48.9 percent of students in the same lower achievement levels (MDESE, 2008b). These results indicate that Missouri students must make giant achievement strides before meeting the lofty demands of NCLB, which mandates all students perform in the Proficient range or higher by 2014.

The lowest levels of academic performance were found among American students from rural-poor or inner-city, urban schools that receive less funding per student than their suburban counterparts (Bracey, 2004). Room for educational improvements in regarding achievement in the United States certainly exist and educational experts agree that, when all members of the community understand and embrace their roles and responsibilities, they will enhance the quality of life within the school setting. Schools

must embrace shared decision-making practices encompassing each of the stakeholders, to realize achievement goals (Dufour et al., 2005).

Attitudes Surrounding Public Education

Despite the practically unrelenting criticism of public schools in the media, Phi Delta Kappan's (PDK) annual Gallup Poll of public attitudes towards schools indicated that confidence has increased for educational institutions (Rose & Gallup, 2007). The PDK Gallup Poll provided a snapshot of the public's perceptions of its schools and the challenges faced, as well as a measure of what program initiatives the public was willing to support. Sixty-seven percent of parents gave their oldest child's school a grade of at least a B on the traditional grading scale (Rose & Gallup). American schools received a public confidence rating higher than did media, government, or big business. Only organized religion came in ahead of public schools, when it came to confidence levels. Bracey aptly pointed out that people trust public schools more than the aforementioned institutions known for constantly trying to fix them (Bracey).

Forty percent of the public indicated that they do not feel confident that graduating seniors leave high school ready for college, and feel that only about half leave ready to do skilled work (Rose & Gallup, 2007). Many Americans view public school funding as neither adequate nor equitable. The public understands the link between funding and school improvement and considers it to be the biggest challenge that schools face. There was widespread concern, in particular, about the quality and performance of the nation's urban, high-poverty schools. The day has passed when parents and school personnel could concentrate on learning and leave others to take care of funding. School

leaders, teachers, and parents have no choice but to become lobbyists for their schools, and are the most effective advocates for public education (Rose & Gallup).

Data collected from the PDK Gallup Poll also indicated that, the closer in location the public is to its local schools, the more it likes them. This trend reflected well on school leaders. The public's satisfaction with their local schools reflects the schools' fulfillment of the vast responsibilities they have been assigned. While NCLB measures what it is able to measure, two-thirds of the public calls on its schools to see to their children's social and emotional needs, in addition to their academic requirements (Rose & Gallup, 2007).

According to a National Parent Teacher Association Survey, high educational aspirations held by parents were reported to be the result of a desire to increase employment opportunities for their children (Epstein, 2004). If this is the case, the results of the aforementioned report on global competitiveness should be found to be most encouraging, giving a hopeful and positive outlook for future generations of students. Valuing American students' willingness to question surroundings and to think creatively may be far more important when it comes to future prospects than what knowledge can be gleaned from their collective test performances. Since about 1990 the global economy has shifted from the production of physical goods, a time commonly referred to as the Industrial Age, to the manipulation of information, or the Information Age (Deutscher, 2004). Having been born into the Information Age, these students stand to profit more now from these characteristics than ever before. Finally, since the level of parental involvement in the school is a better predictor of achievement than are standardized test

scores, schools encouraging involvement would be more likely to elevate learning (Brockenbrough, n.d.; Deutscher, 2004).

Public opinion split on the question of whether the nation's schools are as good now as they were in the past. Still many people, mostly employers and college level educators, thought public schools to be less effective as they can and should be (Educational Commission of the States [ECS], 2008). A sixty percent majority of the public believed schools do not place enough emphasis on the basics of reading, writing, and mathematics. Interestingly enough, these are the very subject areas that NCLB demands schools focus on in order to perform well on mandated standardized tests.

Public Agenda (1998) reported an overwhelming majority (eighty-six percent) of those polled felt the main goal of public schools was to prepare students to be responsible citizens. Immediately following this aspiration was the belief that schools should be responsible for helping people become economically self-sufficient. These goals were consistent across all sub-groups, including the public at large, parents, teachers, minorities, whites, and upper and lower incomes (ECS, 1998). What has remained constant and worth noting is the parental opinion that they want their children to be successful in school, in order to enhance future economic opportunities (Barbour et al., 2005; Epstein & Jansorn, 2004).

"When schools are good, everyone benefits" (p.1), expressed author and involved parent Martha Brockenbrough (2007). When people without children are hesitant to support the local school bond or tax levy increase, Brockenbrough reminded readers that whether they have children or not, most people will someday be dependent on these future generations since it is the wages of future generations that will one day be taxed to

pay Social Security benefits. Since everyone stands to gain from an educated community, everyone should be supportive of its needs. Brockenbrough believed that two things can be said about education: there is no such thing as a universally good or bad school, and parents have at least as much to do with school quality as teachers do. The schools may be far better than given credit for, but they are not nearly as good as they need to be to meet the needs of today's 21st century students (Rose & Gallup, 2007). Unfortunately, many parents report feeling “uncomfortable in their children’s school and teachers often feel under attack by parents who are highly involved” (Starr, 2004, ¶ 1).

Hammil-Remaley and Torchia (2007) conducted a study to pinpoint parents' and students' current perceptions, regarding math, science, and technology (MST) education. According to the study, only twenty-five percent of Missouri parents believed their children should be studying more math and science; seventy percent thought the curriculum needed no changes. A satisfaction was revealed with existing curricula, despite the fact that Hammil-Remaley and Torchia found many experts who reported it as vastly below world-class standards. Results of the study explained why parents and students are so complacent in this area and what kinds of changes might be helpful in building more interest in and support for more rigorous courses in these areas:

> A crucial part of our 10-year initiative to improve MST throughout the Kansas City area is to better understand how parents and students view MST careers, the importance of these subjects in their lives, and the value they place on these subjects in the school curriculum. This study resoundingly confirmed what was observed in an earlier Public Agenda national study. Parents and students have not received a clear message about the importance of MST to life, learning, and

> earning in this new millennium despite a multitude of national reports and pronouncements by national policy makers. The challenge ahead of us is to more fully inform and engage parents and students as full partners in educational reform.(Hammil-Remaley & Torchia, ¶ 3)

Effects of Parental Involvement on Student Achievement

Research supported the theory that education in the United States is dependent upon parental involvement (Cotton & Wikelund, 2005; Epstein et al., 2002; Hopkins, 2000; Lewis, 2003; Mapp & Henderson, 2002). Society has a huge impact on school-aged children. As a result, parents must closely monitor their children's commitment to achieving success in school (Fan, 2007). Also, research has overwhelmingly demonstrated that parental involvement in children's learning is positively related to assessment performance, having a larger impact on student achievement than any other factor, including socioeconomic status (Cotton & Wikelund, 2005; Epstein et al., 2002; Hopkins, 2000; Lewis, 2003; Mapp & Henderson, 2002). According to Fan (2007), the vast majority of related literature showed that parental concerns for their child's education exhibited the strongest relationship with student achievement, whereas home supervision had the weakest relationship.

An annual synthesis entitled *A New Wave of Evidence, 2002* contained information from fifty-one studies on the topic of parental involvement and revealed specific and measurable ways children benefit. These included earning higher grades and test scores, enrolling in higher level programs, being promoted and earning more credits, improved attendance, having higher graduation rates, and enrolling in postsecondary education. Many of the studies also revealed that schools with highly-rated partnership

programs made greater gains on state assessments than did those with lower-rated programs (Mapp & Henderson, 2002). Family involvement was also positively correlated with facets of children's education, such as behavior, and motivation (Brooks, Bruno, & Burns, 1997; Cotton & Wikelund, 2005; Epstein et al., 2002; Mapp & Henderson, 2002). For these reasons, society must adopt a cultural norm that encourages parents to become and remain involved with their children (Deutscher, 2004).

Supportive families make critical contributions to student achievement in countless ways from pre-school through high school (Mapp & Henderson, 2002). Another meta-analysis consisting of fifty-two studies exposed the importance of continued parental involvement during the child's secondary school years. Statistical analyses were done to determine the overall impact of parental involvement, and all academic variables examined were found to be significant, regarding achievement for both white and minority children (Jeynes, 2007).

Mapp & Henderson (2002) indicated that being involved at home and at school is equally important. A home environment that encouraged learning was more important to student achievement than income, education level, or cultural background (Mapp & Henderson). In other words, children attending mediocre schools, but from supportive communities with engaged parents, will fare better than children from an indifferent family at a great school (Mapp & Henderson). The USDE (2001) cited over thirty years of research showing that parental involvement helps children get higher grades and test scores and complete more homework. Involved families have children who graduate in greater numbers and enjoy school more (Debell & Chapman, 2006).

Barriers between Parental Involvement and Schools

Differing philosophies regarding how and what children should learn is one hurdle the shared stakeholders of any educational institution must overcome. Effective schools make every effort to disseminate information to parents explaining teaching strategies and district educational philosophies, to avoid confusion, frustration, and a communication breakdown. School personnel largely bear the responsibility for overcoming these obstacles through initiatives designed to connect parents and the surrounding community in authentic and meaningful ways that demonstrate the school's commitment to inclusion (Payne, 2006). Other possible barriers may include a parent's own negative school experiences, cultural differences, and/or a disparity between the parents' and the schools' disciplinary philosophy (Barbour et al., 2005).

The National Center for Educational Statistics (NCES, 2003) investigated the topic of parent and community involvement in schools. The survey collected responses of over 12,000 Americans who had children attending grades kindergarten through twelfth. Subjects in this study were randomly selected and included parents with children in public and private school settings from all fifty states and the District of Columbia. Parents were asked what methods the school implemented to communicate with families. Specific practices regarding telephone calls, e-mails, and newsletters to inform parents of involvement activities and student performance were the focus of the research. Findings indicated that communicative efforts by schools decrease as a student's grade level increases (Vaden-Kiernan & McManus, 2005). This barrier may be eliminated as educators recognize that secondary students still benefit from involved parents and incorporate strategies into the classroom for ensuring parental inclusion.

Issues surrounding discipline may also lead to problems, when varying opinions exist, regarding an acceptable degree of strictness for the students in a school (Barbour et al., 2005). Whether parents perceive the school's approach to discipline as too harsh or too lenient, friction between the two entities may result and lead to problems that diminish communication. When disciplinary expectations are clearly communicated upfront, trust may be enhanced making routine home-school communication more likely (Barbour et al.). Discipline policies posted on a school's Internet web page would allow more parents access to the valuable information, possibly in advance of behavioral issues.

Parents who have had unpleasant school experiences themselves are less likely to get involved with their own children's schools. Insecurities parents may have about their intellectual abilities often leave them reluctant to establish any form of routine contact with the school (Barbour et al.). The isolation this barrier breeds creates further distrust and fear of an academic institution's motives, making parent involvement less likely. Individuals coming from very different backgrounds often struggle to reach a consensus on any issue. Varying cultural, socioeconomic status, educational levels, and value systems all serve as possible barriers to effective relationships between families and schools (Barbour et al.).

Family-like schools welcome all families, even those with whom it is more difficult to develop relationships (Epstein & Jansorn, 2004). These schools recognized that every student is an individual and take the steps necessary to make the child feel special and included. Practices of family-like schools may include the creation of academically focused opportunities for families which foster a sense of ownership in the school. Such schools also include families in decision and policy-making procedures, and

provide instructional strategies to families to support the learning process at home (Epstein & Jansorn).

Teacher attitudes may present a barrier when teachers are not confident about their teaching skills. These teachers may inadvertently send messages, verbal or non-verbal, that parents are not welcome in their classroom. Unwelcoming signals are often transparent in nature and easily seen by the constituents of a district (Barbour et al., 2005).

If school personnel become consumed with student learning and fail to recognize the importance of parental involvement activities, another obstacle may present itself. Occasionally the notion may arise that there is simply no time or energy for these types of events, and involvement activities do not happen. These schools become obsessed with performing well on standardized testing and do not recognize the benefits involvement activities offer to their achievement goals. When this happens, an unspoken message is communicated to parents that their involvement is unimportant (Barbour et al.).

The sensitive intervention of the professionals within a district, who reach out to parents in genuine ways that demonstrate the parents are welcome, valued, and wanted in the school, may best be accomplished over time. When trust is fostered and established between the school and home, students benefit. Offering a series of low-stress, contact opportunities may lead to meaningful relationships that are based on shared educational goals for the children (Epstein et al., 2002).

Parent Involvement Activities

Specific and measurable activities emerge from topic-related research that enables schools and families to identify the most beneficial forms of involvement (Brooks et al.,

1997; Cotton & Wikelund, 2005; Epstein et al., 2002; Mapp & Henderson, 2002). By investing resources such as time, effort, and money in the most productive activities schools are more likely to have students who make experience more significant academic gains. Epstein (2002) identified six types of involvement that included parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community as necessary to accelerate student performance and enhance school climate. These goals may be achieved and enhanced via technology, such as school web pages, electronic mail, and school information systems. These technologically based forms of communication can all serve to connect families with schools and encourage parent involvement.

The importance of these types of involvement was emphasized in *School, Family, and Community Partnerships* (SFCP) which stated that when they are coupled with a goal-oriented approach to partnerships, will lead to a program more likely to attain school improvement aspirations. Epstein and Jansorn (2004) suggested the SFCP develop four goals a year that are aligned with the district's improvement plan: two of these goals academic in nature, one nonacademic goal, and an overall goal seeking to enhance a school climate of partnerships (Epstein & Jansorn, 2004). An effective SFCP offers guidance to schools, which must assume the responsibility of reaching out to parents in meaningful ways that will enable them to facilitate learning at home (Payne, 2006). A more in-depth review into each of the six types of involvement follows:

Parenting.

Parents generally wish to be involved in their child's education, but often lack clear ideas regarding how to do so. Administration, teachers, and guidance counselors

who create involvement activities designed to train parents in effective practices that encourage learning at home will enhance academic progress (Cotton & Wikelund, 2005; Epstein et al., 2002; Mapp & Henderson, 2002). Parents who, in turn, embrace their obligation to help their child with academic endeavors in the home by supporting the learning targets of the classroom communicate the value of education. Children witnessing supportive partnerships between the family and school become more comfortable participants in their own education (Epstein & Jansorn, 2004).

A great deal of education occurs outside of the classroom walls and may be referred to as the home, or informal curriculum (Barbour et al., 2005). Though they vary them from day to day, families establish routines that require children to assume roles and responsibilities within it. These routines include the process of getting up and ready for the day, mealtimes, aesthetics, and bedtimes (Barbour et al.) It is during these times that parents will either enhance or diminish their child's emotional, intellectual, social, and physical development (Brooks et al., 1997; Cotton & Wikelund, 2005; Epstein et al., 2002; Mapp & Henderson, 2002). When parents create dependable routines that nurture and support the whole child, it is no surprise that these children thrive.

The more intensively parents engage in their children's learning, the more significant the achievement effects (Cotton & Wikelund, 2005). This holds true for all types of parent involvement with relationship to learning and for all types of students. Active practices include, but are not exclusive to, helping with homework assignments, attending and supporting school activities, and/or providing assistance in the classrooms or on field trips (Cotton & Wikelund). Other involvement strategies include reading to the child, speaking positively about the school, volunteering for school activities,

incorporating activities that are supportive of the school's curriculum in the home, and having on-going conversations with the child about learning, grades, and concerns held, and collaborating with the school to better meet student needs (Deutscher, 2004; Epstein et al., 2002; Mapp & Henderson, 2002).

According to the National Education Association (NEA, 2002) parents who read to their children before they enter school give their children a head start toward reading success. The communication of this strategy to parents and families plays an important role in furthering efforts to aid in the educational advancement of their children and is not to be diminished. When parents continue this practice once their children enter formal school the positive impact is even greater, according to the NEA. Families who talk to their children about books and stories support reading achievement which depends more on learning activities in the home than does math or science. The importance of reading to one's child has been well publicized from an array of sources (Epstein & Jansorn, 2004) which may start as early as the first pre-natal visits and likely to be communicated throughout early childhood and on. Parents wishing to go beyond this crucial strategy may seek guidance from educational leaders to enhance the education of their children (Epstein & Jansorn).

Some passive forms of involvement include receiving phone calls, attending and listening during parent-teacher conferences, and reading and signing written correspondence from the school (Epstein & Jansorn). While these activities are certainly better than no involvement, they are not as effective as the more active counterparts. (Mapp & Henderson, 2002). Children are certain to witness actively engaged parents

throughout their school career and may question why their own parents are not motivated to do the same.

Communicating.

Messages sent by the district making it clear that parents are welcome within the school may be communicated via school signs prominently displayed at entrances, newsletters, web pages, telephone contacts, school directories, electronic mail, guest books, and announcements made during functions (Payne, 2006). In order to gain the trust and support of the parents, and in an effort to elevate achievement levels and enhance school climate, school leaders should seek to communicate clearly and concisely the goals of the district (Duffy, 2008). This may be accomplished through the creation of teams that are representative of the shared stakeholders, who meet in a forum type of setting to discuss and receive feedback regarding the district's vision and goals (Duffy, 2008; Dufour et al., 2005). In these meetings common ground is likely to be established in a powerful way that leads to an increased sense of ownership and commitment to a district's aspirations and better meets student needs (Duffy; Dufour et al.). It is often during these occasions that schools build strong home-school connections. Two-way communication empowers the invested parties and enhances trust and opportunities for all involved (Duffy; Dufour et al.).

Not to diminish the importance of personal meetings among educators and parents, researchers have found that busy parents like the convenience that electronic communications offer (Nelms, 2002). While technology has added another communication option for school personnel to reach out to parents, the importance of interpersonal skills must not be forgotten (Schargel et al., 2008). The use of teacher-

created web pages and e-mails to communicate is gaining in popularity among educators and parents alike (Hernandez & Leung, 2004). Tobolka (2006), a veteran educator from Texas, conducted a six week action research study and found that eletronically communicated information regarding curriculum, classroom news, and student performance increased student and parent knowledge and interest about daily class activities (Tobolka, 2006). Along with the classroom web page, parents in the study corresponded with her through weekly e-mails and wrote positive messages illustrating their appreciation for this form of communication. These parents believed it to be more convenient and timely than traditional forms of correspondence, and expressed a desire for future teachers to communicate with them in this way (Tobolka, 2006).

An additional advantage of using technological-based communications exists, in that technology is built around a universal vocabulary and language, thus offering an excellent and unbiased platform for educators to correspond with all parents (Bessell, et al., 2003). For example, non-English speaking parents can still assist their child with homework by operating spelling and grammar software programs with computer-highlighted queries translated by students or marked by parents for students to solve independently. A large number of software programs are also available in multiple languages. Technology affords families more opportunities and varied means of assisting with their children's learning activities (Bessell et al.).

A positive relationship exists between school-related discussions with children and achievement levels. The more parents conversed with their children about classroom learning, the greater the improvement in student achievement. For parents to have these critically important, on-going dialogues with their child, they must become and remain

informed about student learning (Parks & Schulte, n.d.). Psychologist, Dr. Phil McGraw reported that, even when children seem reluctant to participate in these types of conversations, they still internalize the message that their parent values education and is concerned about the child's well-being (McGraw, 2006).

Volunteering.

Providing authentic and meaningful ways for parents to volunteer at school is more likely to create the necessary buy-in these stakeholders need to appreciate the importance of the assistance they have to offer, according Principal Peggy Scott. Scott (2007) conducted a year-long action research study that sought to increase the interaction of parents with teachers and school administration. Scott attributed a portion of the study's success to creating a program in response to data received on a parent-needs survey the district conducted. By listening and responding to what the parents had to say, the district was better able to communicate to the community that they were valuable, welcome, and wanted in the school (Scott). School personnel should be instructed in ways to effectively recruit and train interested parents to volunteer, while simultaneously remaining well aware of the legalities surrounding volunteer programs (Epstein & Jansorn, 2004). Volunteers, usually parents, need to feel welcomed and useful. Scott's faculty provided the volunteering parents with what was referred to as cheat sheets, in an effort to increase their comfort level as they aided the teacher in differentiating the instruction the students received. One parent emotionally reported that she felt she had contributed in a concrete way to help kids, and preferred this type of involvement over "buying more gift wrap in the PTO fundraiser" (as cited in Scott, 2007 p.49).

Learning at Home.

School, like families, recognize that children are also students, and reinforce what takes place at school, as well as the importance of education (Barbour et al., 2005). They are aware of the curriculum being taught and practice instructional strategies to support that curriculum. These families assist children with homework and are supportive of their children's teachers. They model an interest in academic pursuits and value life-long learning (Epstein & Jansorn, 2004; McWayne, et al., 2004).

Teachers who design authentic homework assignments that spark academic interests and involve family members enhance learning at home opportunities that will likely translate into elevated achievement levels for the students (Jensen, 1998). These teachers were likely to be aware of educationally related brain-based research which emphasized the importance of assigning meaningful tasks that were clearly communicated to students and parents (Jensen). Teachers should avoid homework assignments too difficult to be easily understood by parents or that fall under the category of busy work, as these assignments often serve to put parents and children off and may also extinguish an excitement for learning (Appleseed, 2006; Jensen, 1998).

When learning is supported in the home, a child's education is positively affected; however, it is not fair to assume that all children have a parent with the ability to help, the time to work, or even a quiet place to do so (Appleseed, 2006). Schools that genuinely care for students will author homework policies with the welfare of them and their families in mind. To neglect to do so creates the risk of student apathy and family alienation (Appleseed; Schargel et al., 2008).

Decision-Making.

Shared decision-making is a philosophy that has been pushed by both the National Education Association and the American Association of School Administrators. It involves changing the way schools operate and alters the roles of everyone associated, according to educational researcher, Allen (2005). Dr. Scott Bauer, associate professor and program coordinator in the Education Leadership program at Cornell University, cited some common beliefs associated with shared decision-making as it is related to public schools:

1. Those closest to the children and "where the action is" will make the best decisions about the children's education.
2. Teachers, parents, and school staff should have more say regarding policies and programs affecting their schools and children.
3. Those responsible for carrying out decisions should have a voice in determining those decisions.
4. Change is most likely to be effective and lasting when those who implement it feel a sense of ownership and responsibility for the process. (Bauer & Bogotch, 2006, p. 448)

The primary goal of shared decision-making is to improve student learning and ensure the school remains committed to meeting student needs (Bauer & Bogotch). Increasing the number of people involved in decisions obviously brings new challenges to the table, but also creates greater opportunities to generate more ideas, which may lead to heightened enlightenment and innovative approaches to issues. Epstein emphasizes the importance of establishing agreed upon group norms at the onset of the creation of a

decision-making body of people, and believes that the group should include all subgroups found within the school population (Epstein & Jansorn, 2004). Sharing views, solving problems, and taking actions to improve the school climate must remain the focus of all participating parties to avoid power struggles counterproductive to the to mission of the group (Epstein et al., 2002).

Collaborating with Community.

Communities are largely responsible for the culture that children internalize, and also act as contributors to learning by either providing, or disallowing, opportunities in sports and recreational facilities, libraries, museums and arts areas, and medical facilities (Barbour et al., 2005). Communities have an impact on lifestyles, attitudes, and relocation patterns. The local way of doing things may be referred to as the community ethos and, just like the established routines of the home, also become part of the child's informal curriculum (Barbour et al.).

When schools collaborate with the community, they increased opportunities for all students by identifying resources that could be, or were in alignment with the goals of a district (Epstein et al., 2002). Families from every ethnicity, socioeconomic status, and level of education should be made equally aware of and enjoy equal access to community programs and services. Effective schools align resources from talented individuals, businesses and organizations, and community volunteers with school goals to support the students, families, and the school. Collaborative activities might include, for example, mentoring and tutoring programs led by trustworthy and educationally committed community members, as well as businesses (Epstein et al.).

Transformational Change into the Information Age

The Association for Educational Communications and Technology (AECT) created an initiative, located in Indiana known as *FutureMinds: Transforming American School Systems* whose mission is to aide state educational agencies as they attempt to smoothly move from the Industrial Age into the Information Age (Taylor, 2007). Those associated with *FutureMinds* do not believe educators can meet the needs of students without significant change. They recognize that in today's society a work force which was mostly made up of manual laborers had been replaced by one largely comprised of knowledge-based workers. This creates the necessity for schools to respond to new demands, when it comes to learning goals designed to meet student needs. *FutureMinds* supports the notion that a variety of routes exist for schools to determine successfully what they envision for the future of their school (Taylor, 2007). Along with those associated with Missouri's state education-technology long-range planning team (MDESE, 2008e), authors of *SFCP* (Epstein et al., 2002), and the authors of a paper released by the State Educational Technology Directors Association (SETDA), the International Society for Technology in Education (ISTE), and the Partnership for 21st Century Skills, members of the initiative agreed that educational institutions must create teams representative of the stakeholders, to decide where they need to go and how best to get there (Adkins et al., 2004; Duffy, 2008; MDESE; Reigeluth & Duffy, 2007).

American schools were originally designed around policies written to meet needs of the Industrial Age. Students were expected to learn the same material, at the same rate, and in the same manner as their peers. This type of educational approach mirrored the expected output of a factory's assembly line (Banathy, 1992; Bracey, 2004). Since the

need for realignment between educational and societal aspirations was first recognized, much has been done to improve a school's administrative response to the changing world. Yet the traditional approach many state agencies still embrace has become ineffective. These outdated practices often reflected a philosophy of change for one school at a time and one program at a time and were no longer effective in meeting the needs of a society competing in the Information Age. Rather than taking a traditional approach to school reform many supported a transformational approach (Duffy, 2008; Fullan, 2004; Nagel, 2007). To overcome the obstacles associated with outdated practices, educational leaders must enmesh technology into every aspect of our schools, thereby joining other competitive United States markets which have already made technology an integral part of day to day operation (Nagel).

Technology must be incorporated into every facet of the organization, or it cannot expect to compete in an increasingly digital world. Despite this information the education sector came in dead last, when compared to all other major industrial populations according to SEDTA, ISTE, and the Partnership for 21st Century Skills (Taylor, 2007). This is an unfortunate circumstance for all Americans, and must change in order for us to remain globally competitive (Taylor).

Schools were system-functioning institutions, meaning all that was accomplished by changing one program at a time was to make it incompatible with the rest of the system (Taylor). To increase successful change opportunities, AECT cited a need for state departments of education to work in cooperation with local communities and schools to foster and enable changes required to meet the needs of students born into the Information Age better. Transformational change in this context referred to schools that

worked simultaneously towards improving the social infrastructure, developing positive relationships with the external environment, and upgrading policies and procedures mandated by building administration (Taylor).

Most people accepted that for a public institution to remain current with relevant practice it must have the political support of those surrounding it; those making decisions via the election process (Barbour et al., 2005). Systematic transformational change for a school can only result when the majority of voting parents and the community embrace the district's mission, vision, values, and goals (Fullan, 2004; Reigeluth & Duffy, 2007).

How will American schools remain competitive? This question was addressed at the SETDA Leadership Summit (Taylor, 2007). Two major hindrances were identified for American schools. One was the narrow approach to the use of technology in schools and the other was the assumption that technological use might already be described as effective and routine (Taylor). One suggestion made by these technological-based entities included the use of technology to create actively engaged and empowered education support systems comprehensively. When this happened everyone involved sought to become proficient users of technology and developed opportunities to communicate 21st century skills throughout. For example, when understood and implemented effectively, networking technologies support instructional staff by making it possible for all stakeholders to communicate regarding every aspect of the institution in a number of ways that might include, but weren't limited to, teleconferencing, electronic mail discussion groups, and message boards (Taylor).

For transformational change to occur, internal and external stakeholders alike must be willing to assume some fundamental and philosophical paradigm shifts

surrounding their personal mindsets regarding education(Reigeluth & Duffy, 2008). An adoption of a sytems-thinking approach to whole-school reform is necessary. Through systematic instructional planning, combined with parental involvement the strategically-aligned goals of the district become more likely to occur (Reigeluth & Duffy). Society needs institutions committed to making the use of technology ubiquitous, to better ensure our students were led into the 21st century prepared and confident to compete in the Information Age (Debell & Chapman, 2006).

Technology as a Communication Tool

Technology afforded families an increasing number of alternatives to integrate into the academic experiences of children. Research suggested limitless involvement opportunities technology offered to impact education positively (Bessell et al., 2003). Gaining insight into the most effective ways for educators and parents to partner in efforts to increase student achievement would allow schools to better meet the demands of NCLB and the needs of Missouri students.

Teachers had traditionally made use of a class newsletters or individual notes home to meet communication needs with parents. Problems arose from these methods when notes were lost, or newsletters went undelivered. Telephone calls home might have solved some of the problem, but, with increasing numbers of parents working a variety of hours, it was sometimes difficult to reach them in this manner. For these reasons, some educators looked to modern technology for a more timely and efficient way of maintaining home-to-school connections (Debell & Chapman, 2006; Mckenzie, 2000).

Finding a time when both parent and teacher were available was difficult, and one obstacle that presented itself with telephone communication. In addition, many teachers

did not have phone access in the classroom. One solution was voice mail, which allowed teachers to record messages that could be heard and responded to at the parent's convenience (Adkins et al., 2004). Other opportunities that did not rely on real-time communication, but were considered by many to be more effective and efficient than the newsletter or the individual note home, included electronic mail, Internet, personal digital assistants, and school record-keeping software (Adkins et al.).

Electronic mail, or e-mail, offered a communicative device that allowed educators to send important messages to families via the Internet, that could be responded to when convenient, and after some time for parents to think about the information contained within the post. It was not uncommon to end a telephone conversation only to remember a forgotten but important question one forgot to ask. When this happened, the person might have been reluctant to phone back. E-mail offered parents a two-way form of communication that allowed them to ask questions, disclose school-related concerns, or offer assistance to the teacher when areas of personal expertise related to classroom learning (Adkins et al.). Another advantage to this form of communication rested with the fact that both parties were able to reflect on response options as they communicated in their own time. Considering the many barriers that sometimes prevented parent involvement, e-mail had the potential to overcome communication related obstacles and created an additional avenue for families of all socioeconomic differences, disabilities, and ethnic diversities (Duffy, 2008).

For e-mail to be a viable communication option, however, parents must have access to an Internet connected computer and the knowledge-based skills necessary to use the technology. As society moves further into the digital age the problem is expected to

decrease. Students today, also known as digital natives, are more likely to use modern technology than their parents who are sometimes referred to digital immigrants (Taylor, 2007). Kleiner and Farris (2002) reported 99% of schools were Internet-connected with e-mail and web-based pages which provide parents with a wealth of pertinent information. Although the digital divide is closing, founder of *Eduguide: Partnerships for Learning*, suggests educational professionals only rely on technologically based forms of communication to the extent it is able to meet the needs of those involved (Taylor).

A mailing list, sometimes referred to as a Listserv, allowed school administration to create, manage, and control electronic mailing lists (Neely, 2005). Each list had a topic of interest, just as a company could have had a postal mailing list to distribute a catalog. Sometimes mailing lists were public; anyone with an email account anywhere in the world could subscribe. Sometimes these lists were private or confidential, limiting access to only desired subscribers. In situations involving schools this was usually the case. Schools might have offered one mailing list or several, based on the demographics of the institution. Parents who provided an e-mail address were added to the list and received messages from either administration or the teachers who operated it. Mailing lists made sending important messages to large groups of people much easier than traditional methods of correspondence. Group members needed only to maintain an electronic address and subscription status. Neely, principal of Marian Bergeson Elementary School in the Capistrano Unified School District believed his district's usage of the mailing list reached more parents than the school's web page, individual e-mails, or the telephone messaging service (Neely). Neely described the mailing list as a district-hosted system which allows messages to be broadcast electronically to all families and community

members (Neely). Administrators could send a variety of information to the constituents of the district in one mass e-mailing. Neely used his mailing list to make parents aware of school calendar items and safety alerts, to recognize student and staff accomplishments, and to embed Web site links that provided parents with valuable resources (Neely).

The classroom web page was called, "… the best communication tool that I have used" by educator, Stacy Chastain (personal communication, September 18, 2008). This fifth grade teacher described how she moved from traditional weekly newsletters, to e-mailing, to a classroom web site. Chastain indicated a satisfaction with the flexibility of e-mail communications, but felt the web site offered a more convenient method to post large amounts of relevant and timely information which concerned what was happening in the classroom. Some of the information parents were able to access on the web site included daily assignments in every subject, links to other Internet sites that provided further practice of the skills the assignments addressed, pictures of classroom activities, samples of student work, and current announcements pertinent to the smooth operation of the class. Parents were informed of important documents sent home with children, which occasionally needed to be signed and returned to school in a timely manner. Chastain spoke of an ability to remain connected with busy parents in a manner that was mutually beneficial and that had not existed prior to using e-mail communications and the web site (S. Chastain, personal communication, September 18, 2008).

Similar problems existed with classroom web sites that were found with Listserv or individual e-mail communication methods. Unfortunately, many parents remained unconnected and without the capabilities needed to use these technologies (Couchenour & Chrisman, 2008). Continuous training was necessary in order for all parents and

teachers to communicate effectively using these methods. Schools needed to develop many forms of communication to encourage parental involvement and the participation of all families. Teacher-created web pages should have been considered one possibility, but could not used to the exclusion of the many other communicative options (Couchenour & Chrisman).

Personal Digital Assistants (PDAs) were being used by some schools to communicate with parents (Brown, 2001). Teachers were able to download grades and send notes concerning performance, behavior, upcoming assignments, and other school related information by loading the information onto student PDAs. Students in these schools were assigned a PDA, or handheld computing device, that was similar to other forms of technology these digital natives were accustomed to using. PDAs were similar in appearance to Nintendo's Gameboy, a popular gaming device used among children. The PDA was small enough to carry in a pocket or a purse, and originally intended for busy executives. But some teachers had recognized what the handy little gadgets were able to contribute to education (Brown). By simply aiming one PDA towards a receiving PDA, a teacher was able to beam messages, assignments, and links to learning-related websites (Adkins et al., 2004). These inexpensive devices could travel with students wherever they went and were becoming increasingly commonplace in school settings (Brown).

Some drawbacks to the PDA did exist and should be disclosed. Warhaftig (2001), an American literature teacher at the Fairfax Magnet Center for Visual Arts in Los Angeles and coordinator of the nonprofit organization, *Learning in the Real World*, said more research was needed before schools squandered their money on PDA computing

technology. Warhaftig used a Palm IIIxe to keep his students' contact information, but disclosed a fear the students might use the devices' infrared capability to beam notes to each other and play games, rather than read or complete assigned material (Brown). "I know when I'm in a faculty meeting that is boring me to tears, I will read *The New York Times* on AvantGo, a handheld software program enabling users to access the Internet, and look like I'm (concentrating) on the meeting," stated Warhaftig. "The magic in the classroom is getting kids to concentrate" (as cited in Batista, 2001).

Teacher and parent training for the effective incorporation of the PDA into the classroom was timely and intimidating process for some. Other concerns included the complexity of setting up an entire classroom of handhelds and obtaining cost effective learning software, and repairs often became time-consuming experiences that left students with a malfunctioning PDA, or without one, for extended periods of time according to Walery (2005). Walery's school district placed 2,200 PDAs into the hands of students, despite the possible obstacles associated with them. He remained an advocate for handhelds in school settings, and believed the PDA pros far outweighed the cons (Walery). PDAs offered opportunities for parents to communicate with school via e-mail or memo software. In addition, parents who wanted access to school web pages had the ability to do so using the device.

School Information Systems (SIS) made it easier for schools to meet NCLB mandates. The law dictated that schools offer parents opportunities to remain informed and empowered decision-makers in their child's education. Schools with SIS made it possible for parents with Internet access to log on to the school web site with a security-protected password and see the child's grades on every assignment teachers had chose to

record, attendance, and other school-related topics. Schools who offered the service to parents eliminated the filtered information kids were sometimes known to relay to parents regarding school performance (Bird, 2006). The days when parents had to phone the principal or teacher to set up an appointment, in hopes of learning important information, were a thing of the past for those fortunate enough to have had Internet access and children in schools with SIS (Bird). An additional benefit of SIS included a school's enhanced ability to keep parents of children in upper-grades involved. The United States Department of Education (USDE) reported dwindling parental involvement as children progressed through school and stated schools shoulder some of the blame because less involvement opportunities occur as children get older. This problem could be somewhat alleviated by schools with SIS. These institutions communicated information thoroughly and effectively, in a manner that allowed parents to remain aware of the child's school performance and able to respond to the information in a timely fashion (USDE, 2007).

Corey Bazemore's mother was deployed to Iraq for sixteen months during his sixth grade year (Bazemore, 2006). He was surprised by how his school's SIS program affected his day to day life during his mother's absence. He was a good student and excited to log onto the web , which allowed his family to remain aware of academic performance. Three years later Corey recalled how his mom logged onto the SIS web site daily and noticed immediately when his math grade began to drop. Bazemore's mother quickly identified the source of his frustration and sought help from the respective teacher. Corey disclosed how his mother corresponded with his math teacher during that time (Bazemore, 2006). Parent and teacher communicated via e-mail and worked together to help Corey master skills with which he struggled. This student remained a

committed advocate for SIS programs, and while his experience may have been more personal than most, it was illustrative of how technological-based communication was the only option in some circumstances.

Parents might not have had Internet access or been able to afford the costs to obtain the associated technological components. In addition, teachers and administration had to keep data entry current, for the SIS program to remain an informative site where timely information could be obtained (Adkins et al., 2004). Obstacles associated with SIS were similar to the barriers surrounding e-mailing and web sites. SIS required the user to have the ability to navigate the Internet and possess computer-related skills associated with keyboarding.

Whether teachers and parents are digital immigrants or natives, they need to become more comfortable using the technology students often find commonplace. Technology has created opportunities for members of society to remain connected with each other that did not exist twenty years ago (Starkman, 2008). Parents may choose to participate more actively in their child's educational world with the direct links to the teacher, immediate access to assignments, student progress, and grades that technologically based communications provided (Starkman). Furthermore, they required and deserved more than the typical report card and the annual parent-teacher conference to remain aware of their child's academic needs. More frequent communication was needed for students to realize the positive outcomes associated with authentic home-school connections (Debell & Chapman, 2006).

Use of Technological-based Communications

According to a nationwide annual report entitled *The Digest of Education Statistics*, the number of computers in public schools had increased. In 2005, the average public school contained 154 instructional computers, compared to 90, in 1998. One important technological advance that had came to classrooms following the introduction of computers was connections to the Internet. The percentage of instructional rooms with access to the Internet increased from fifty-one percent in 1998 to ninety-four percent in 2005. This meant nearly all American schools had access to the Internet by 2005 (Snyder & Dillow, 2008).

The Census of Technology (COT) report was designed to assess Missouri's continuing investment in K-12 education technologies and to help schools advance toward the effective inclusion of technology (MDESE, 2008a). This report provided important data for the Department of Elementary and Secondary Education (DESE) to share with state and national decision-makers, to increase public awareness and advance public policy and support for education technology. It also provided local school districts with data necessary to identify needs and develop strategies that facilitated school improvement processes and compared district progress with statewide data. The COT was aligned with the *Missouri Education Technology Strategic Plan* (METSP) and was a primary data source for measuring progress toward meeting state goals and objectives (MDESE, 2008e).

A technology survey had been collected by the state educational department annually since 1997. In 2001, the census was incorporated into the April cycle of MDESE's online core data collection system. The 2001 COT was the first instrument to

report technological information for every district (MDESE, 2008a). The COT had two parts: a district-level survey and a school building-level survey. The District Census assessed the levels of planning and training for the district as a whole and concentrated on hardware, software, and levels of connectivity for the administrative buildings and offices. Completed by district-level administrators and/or information technology specialists, the District Census included information for all Missouri school districts (MDESE).

The Building Census assessed planning and training needs for individual school buildings and focused on hardware and levels of Internet connectivity in computer labs, libraries, and classrooms. The Building COT also collected data from preschools, elementary schools, middle schools, junior high schools, high schools, area career centers, and the majority of charter schools, but only if they had been in operation at least one full year prior to the Census date (MDESE). The annual *Census of Technology Report* arranged current data for both the district and building levels related to technology planning, technology professional development, hardware and support, Internet connectivity-distance learning, technology usage, and technology funding, and compared current data with information from previous years (MDESE, 2008a).

Item five, found under the COT report's Technology Usage heading asked schools to identify the buildings' use of technological-mediated feedback systems. These systems allowed users to locate, view, and assess school information. Specific systems the instrument inquired about included automated absentee reporting, electronic bulletin boards, e-mail, homework hotlines via the web and telephone, Listservs, and voice mail. Item five was added in 2002 and designed to facilitate effective communication between

schools and patrons, including students and parents (MDESE). The item distinguished between one-way information dispersal and interactive systems that offered patrons information and the opportunity for inquiry and concerns to be addressed. Feedback systems were reported to exist in all but fifty-seven of Missouri school buildings on the COT report conducted in 2007-2008 (MDESE, 2008a).

Since 2002, the number of Missouri schools that had access and reported to using e-mail as a communicative tool had more than doubled. Thirty-nine percent of Missouri schools indicated using the technology in 2002, compared to ninety-seven percent reporting the same in 2008. Increased usage was also reported for other technological-mediated feedback systems, but not to the degree of electronic mail (MDESE).

Item two, also found under the report's Technology Usage heading asked schools to estimate administrator's, teacher's, and student's routine use of technology for a variety of purposes (MDESE, 2008a). Some item choices were the frequency used to communicate with parents and to manage, track, and assess student performance. In 2004, 452 Missouri districts reported a routine use of technology to communicate with parents through e-mail. By 2007, the number had increased to 507, or ninety-seven percent of Missouri school districts. Steady increases were reflected in the state-collected data for each of the technological categories. Telephones were showing up in classrooms, labs, and school libraries more often, identifying an eight percent average increase from 2006 to 2007. Numbers of teachers who reported using technology specifically to communicate with parents and students had increased by thirty-two percent since 2000 (MDESE).

School information systems (SIS) were not mentioned specifically on the COT; however, the use of technology to manage student information and track performance was inquired about on the instrument. These items were components normally found in an SIS computer program. Since the inception of the report, building administrators had shown the greatest technological increases in these areas (MDESE).

The numbers of Personal Digital Assistants (PDAs) found in Missouri schools had increased every survey year, yet they only made up four percent of what technology existed in schools (MDESE). Data derived from the COT reported that the largest percentage of technological tools were desktop and laptop computers. Ninety-six percent of technology found in schools fell into one of these categories. Ninety-nine percent of Missouri school buildings had reported that virtually all of the computers were Internet connected, which made web pages, on-line student management programs, and electronic mail possible (MDESE, 2008a).

Technological-based Communication Initiatives

According to the National Education Association, 2008, an imperative to prepare our students to function effectively in the digital age existed. To respond to the unfortunate circumstance, a program known as *FamilyTech* in southern Florida was created that routinely engaged parents with schools through the use of electronic communications. Despite the importance of technological-based learning to students, access to the necessary components remained a barrier for many families (Frederick & Shockley, 2008). Participating districts loaned refurbished computers to parents, and provided the necessary tutorials to use and maintain them effectively (Bessell et al., 2003). Educators completed professional development activities that ensured their ability

to incorporate technology into classroom instruction and convey the academic experiences electronically. Participating teachers reported a significant increase in parent involvement, and stated that it had more than doubled as a result of the *FamilyTech* program. Achievement results were also dramatically enhanced, according to pre- and post-program data. *FamilyTech* students were more likely to perform at or above the fiftieth percentile on state standardized tests in mathematics (57% versus 19%) and reading (44% versus 14%) than their non-*FamilyTech* counterparts (Bessell et al.).

Eduguide was an award-winning and nationally recognized non-profit organization, designed to engage parents with schools at all levels. Some of the most effective technological-based forms of communication, as cited in a report conducted by *Eduguide*, entitled *Digital Disclosures*, included web sites, electronic mail (e-mail), text messaging, and informational teleseminars. This report stated that educators should not rely solely on technologies to communicate with parents, as many were not yet electronically connected, which made correspondence in those ways impossible. However, also disclosed was the fact that the numbers of people from all walks of life who were connected was increasing daily, which led to increased opportunities to close the home-school gap regardless of socioeconomic differences, disabilities, and ethnic disparities (Taylor, 2007).

Long-Range Technology Planning for Missouri Schools

One of the goals of the Outstanding Schools Act of 1993 was to expand the use of technology in Missouri's public schools. The law authorized special grants to help school districts acquire new technology for instruction and management, and earmarked funds for related professional development activities at state and local levels. The provision

proved to be a major asset in supporting technological-based training for school personnel. MDESE prepared a publication entitled, *Education Technology Strategic Plan 2007-2011,* in an effort to assist school districts in various stages of providing technology for students and staff. MDESE staff used several sources in developing the guide, which was meant to assist school districts of all sizes, consultants, and information technology directors. Included in the document was a compilation of ideas and suggestions that would help teachers and school district leaders develop effective, long-range plans for using technology in all aspects and levels of education (MDESE, 2008e).

To involve all the major stakeholders on a technology planning committee was identified as the first crucial step in the process of long-range technology planning. All committee members should have decision-making opportunities and feel comfortable giving input, in order to create ownership in the process, as well as the final product, according to the publication (MDESE). The publication also encouraged technology committee members to visit other school districts with technology-related accomplishments they would choose to replicate. The individuals involved might need various degrees of professional development in how technology can meet the changing needs of students, parents, and educators and help the school district respond to societal expectations. Once these norms were established, the committee could identify the district's related strengths and weaknesses to form a technology mission statement (MDESE). MDESE cautioned school districts to align the mission statement with other pre-existing district mission statements. Once the technology mission was written and accepted by the stakeholders as a document worthy of their commitment, the committee might choose to form subcommittees to document the logistics of technology as it

currently existed in the district. There would also be a need to analyze the school setting, learner characteristics, school and community resources, and perceived current and future technological needs. By identifying existing sources of information, and deciding what data would need to be collected, they should be able to better determine the key technological issues at hand (MDESE). Input from all stakeholders using or affected by emerging technologies was important to arriving at accurate and relevant conclusions. These types of committees should conduct individual and group interviews to question school faculty and others about current uses of technology, their attitudes about the potential for improving students' performance with technology, and recommendations for implementing new technology in order to improve school climate and culture (MDESE). In addition, committees must author technology plans that are in compliance with the district's other mission statements and visionary plans. It is considered good practice and should foster a sense of ownership in the final product by including all committee members in the formal presentation of the plan. The district should routinely evaluate the effectiveness and validity of the plan, which incorporated ongoing planning, implementation, and evaluative processes (MDESE). A well-rounded committee of school personnel from all levels, parents, community members, and students should work to identify a philosophy and rationale for the technology plan. To create the most promising document MDESE advised schools to conduct a district needs assessments, oversee progress, and communicate the plan to others (MDESE, 2008e).

Summary

Despite the good intentions of all involved, finding meaningful ways for schools and parents to collaborate on student learning remained a difficult task. Nationwide,

schools have sought to develop partnerships that improve home to school communication. Increased and meaningful communication between home and school encouraged parent involvement. The research clearly and overwhelmingly stated that parental involvement in education had a larger impact on student achievement than did any other factor, including socioeconomic status (Epstein et al., 2002; Hopkins, 2000; Lewis, 2003; Mapp & Henderson, 2002). For these reasons, the researcher chose to focus on the impact of technological-based communication to engage parents with schools. According to Missouri's Department of Elementary and Secondary Education's (MDESE) Census of Technology Report, 2008, ninety-nine percent of Missouri schools were connected to the Internet, and of these schools, ninety-five percent had e-mail capabilities. Eighty-six percent of Missouri principals and seventy-eight percent of Missouri teachers reported routinely using electronic mail to communicate with parents. The Census of Technology Report defined routine on the survey instrument as three or more times per week (MDESE, 2008a). Technology had the potential to decrease existing communication barriers and bridge the home-school gap for all students and their families (Lewis, 2003). It logically followed that schools placing an emphasis on clearly communicated learning goals, roles and responsibilities of the institution and the parents, and who valued the input of all of the shared stakeholders should realize more success than those that did not.

Technological-based forms of communication, such as e-mail, school web sites, and electronic mailing lists, provided a multi-pronged approach for an infinite number of possibilities that supported every aspect of the six types of parental involvement identified (Epstein et al., 2002). Regardless of the avenue schools chose to utilize in their

efforts to connect with parents, what could not be denied was the fact that their involvement was mandated by federal legislation and crucial to the success of the institution and students alike (Appleseed, 2006; Cotton & Wikelund, 2005; Epstein et al., 2002; Henderson & Mapp, 2002; Hopkins, 2000).

Collaboration between schools and families was becoming more commonplace as stakeholders became increasingly aware of the achievement gains that resulted. Research overwhelmingly supported the notion that when schools build partnerships with families, respond to their concerns, and honor their contributions, they built sustainable connections with the ability to improve student achievement (Epstein et al.; Deutscher, 2004). Simply put, parental involvement was mandatory for student success and school improvement (Appleseed, 2006; Cotton & Wikelund, 2005; Henderson & Mapp, 2002; Hopkins, 2000; Epstein et al., 2002).

The reader was offered background information regarding the importance of parent involvement in schools and how it was related to student achievement in Chapter One. A thorough review of the most current research regarding parent involvement in schools and how technology may be used to bridge the home-school gap was explored in Chapter Two. The study's subjects, design, and methodology were explained within Chapter Three. Chapter Four contained an analysis and an interpretation of what the collected data reflected regarding the extent and methods to which top-performing Missouri schools and parents collaborate to increase student achievement. Implications the findings of this study may have on the operation of effective schools were examined in Chapter Five.

CHAPTER THREE - METHODOLOGY

Introduction

Nationwide, school districts struggle to meet the challenging criteria set forth by the No Child Left Behind (NCLB) Act in order to maintain government funding (USDE, 2002). The Act requires all schools to have 100% of students performing at the Proficient level or higher by the year 2014 on state administered standardized tests. Missouri's Department of Elementary and Secondary Education (MDESE) was recently granted permission to incorporate a growth model into the way Missouri students are academically judged. The model should make meeting the demands of NCLB a bit more flexible for school districts, in that it allows students who were considered to be on track according to preset growth model guidelines to be counted as Proficient on the MAP assessment (MDESE, 2008b). However, while a growth model has been approved for Missouri schools it had not been implemented at the time of this study.

School districts that demonstrated exemplary performance on these high-stakes tests used a variety of strategies to track student achievement and respond quickly to the results derived (Education Commission of the United States [ECS], 2008). Effective public schools in Missouri used varying strategies to pinpoint strengths and weaknesses within the district, and used the information to make data-driven decisions that improved student and school performance (MDESE, 2008e). Efficient schools authored improvement plans that identified district weaknesses and allocated resources to address any problematic issues (ECS, 2008). Nearly all successful schools used data to inform

and create school improvement plans, which are often required by state government educational agencies. In addition to the proficiency standard, NCLB instructed schools to include family involvement policies in the improvement plan. NCLB advised schools to author the involvement plan as a committee that was reflective of the institution's demographic profile. The primary goals of the policies were to enhance student learning and demonstrate the school's commitment to partnering with the important stakeholders (USDE, 2001).

The rationale for this study was based on the necessity for schools to meet these lofty goals. A plethora of research had proven that parental involvement was the biggest predictor of student achievement (Appleseed, 2006; Cotton & Wikelund, 2005; Henderson & Mapp, 2002; Hopkins, 2000; Epstein et al., 2002). Therefore, schools needed to engage parents through any viable means. As the digital divide decreases, busy parents and educators may prefer to communicate via modern technological-based methods (Christie, 2005; Tobolka, 2006). Research demonstrating any practice leading to positive achievement outcomes should result in school leaders who are more confident making expenditures supportive of the initiative. All schools have limited resources which must be distributed in efficient ways most certain to lead towards enhanced achievement for students (Adkins et al., 2004). Determining the most productive investments for resource dispersal is crucial to the success of the institution (Adkins). It was the focus of this study to determine the significance and magnitude of relationships that might exist between achievement levels and perceptions surrounding parental involvement. Also considered were the degree and types of technological-based forms of

communication Missouri's top performing elementary school leaders utilized to increase parent involvement and student achievement.

Subjects

Three components made up the criteria by which schools were selected as participants in this study. First, the researcher chose to focus on elementary schools, due to a personal opinion that, when involvement routines were established early, they were more likely to continue throughout the child's academic career. Second, all elementary schools identified by the Missouri state educational agency as a top ten performing school were selected for an in-depth analysis of the involvement practices of those experiencing the most achievement success. To maintain the integrity of the study these schools also had to be involved in the Missouri School Improvement Plan's (MSIP) fourth cycle review process during the 2007-2008 school year, and to have administered MSIP's Advanced Questionnaire to parents and school personnel. This made it possible to compare cumulative MAP scores in communication arts and mathematics to beliefs reported on the survey instruments. These Missouri schools were located across the state and, due to demographic and geographic diversity, represented a cross section of Missouri schools. Sixty-eight schools met the criteria and served as the study's subjects. Of the sixty-eight participating schools, twenty-four had a student body of 250 or fewer. There were also twenty-four school districts with 250-500 students. Twenty schools had at least 500 students. Stratification of the study's sample was done by district size. However, also investigated were the numbers of students enrolled in the school's free and reduced lunch program. Study data demonstrated an inverse relationship between school size and numbers enrolled in their free-reduced school lunch program and were displayed

in Figures 1-3. This phenomenon may have been study-specific, and it was not the intention of the researcher to insinuate that it described a trend that could be said of all Missouri schools. Both variables allowed for a more intense look into the relationships analyzed and created more specific study results.

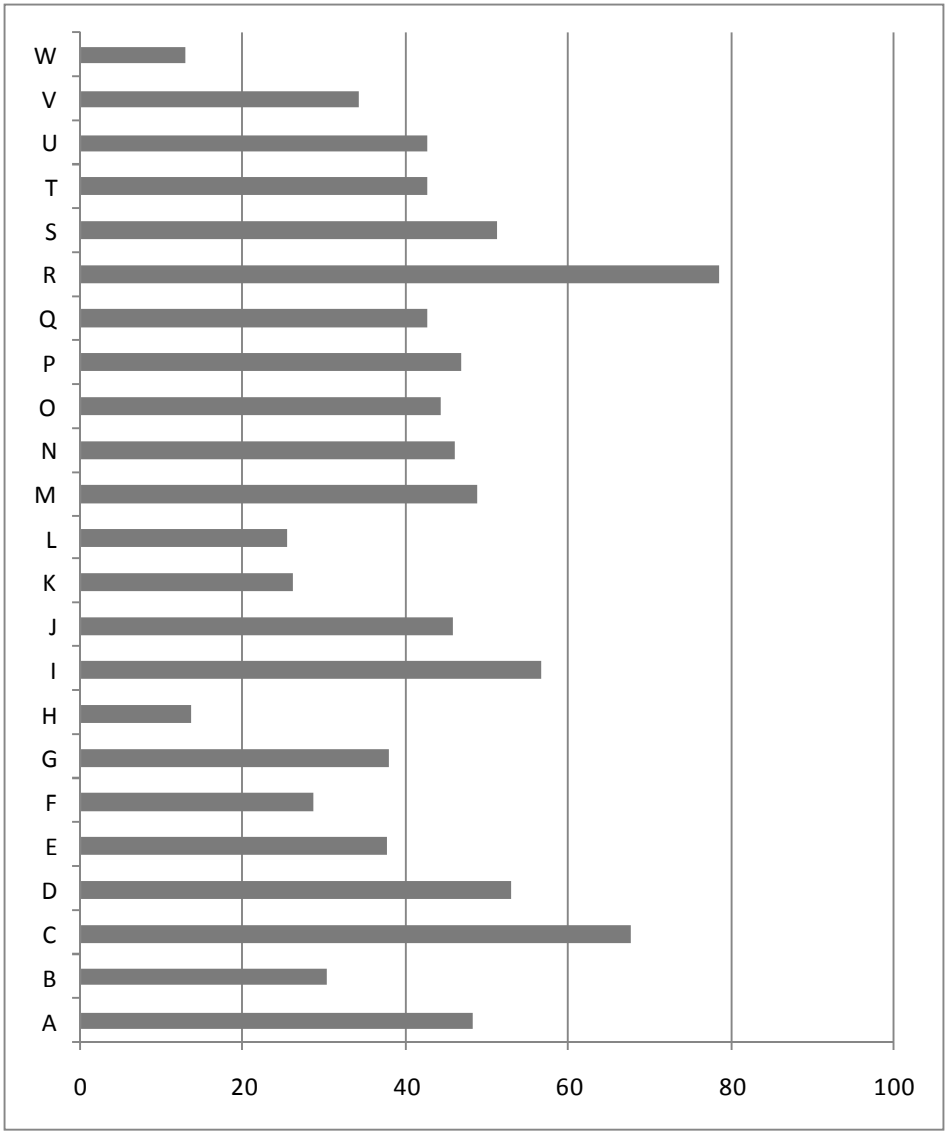

Figure 1. 2007 Enrollment Percentages in Free-Reduced Lunch Program for Schools with 0-250 Students

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Note: Mean = 41.82.

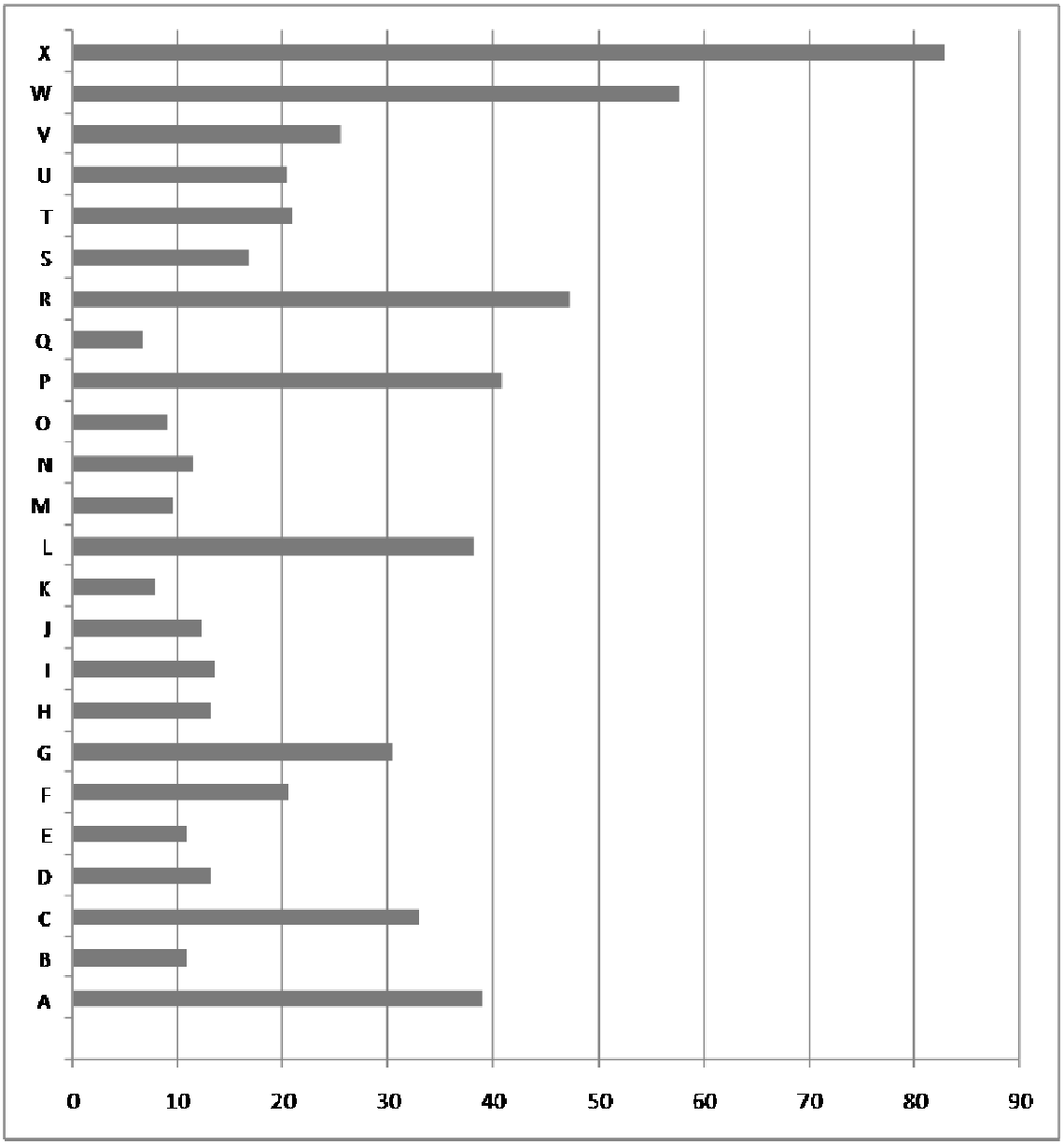

Figure 2. 2007 Enrollment Percentages in Free-Reduced Lunch Program for Schools with 250-500 Students

Note: Mean = 24.07.

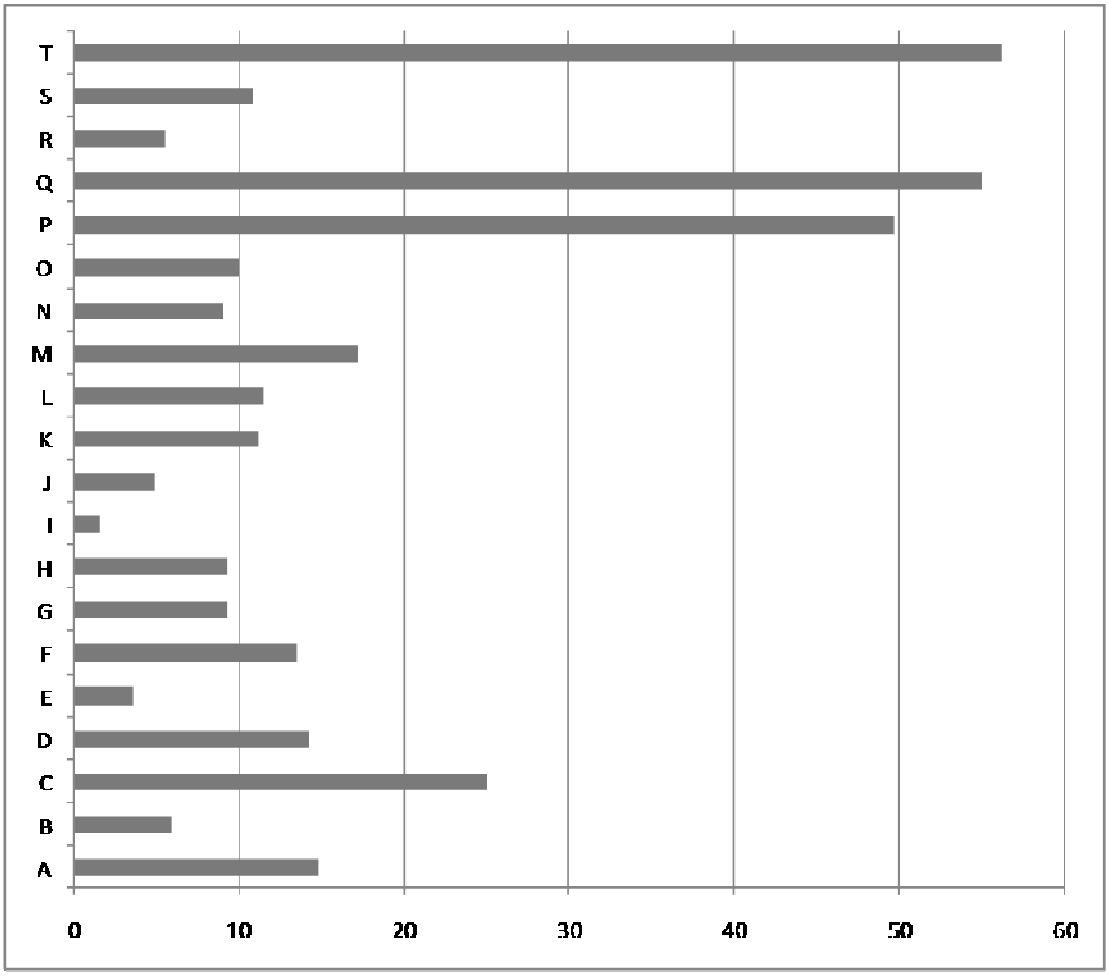

Figure 3. 2007 Enrollment Percentages in Free-Reduced Lunch Program for Schools with at Least 500 Students

Note: Mean = 16.94.

A range of 80.2 percentage points existed for all study subjects, when numbers enrolled in free-reduced lunch program were considered, meaning that a wide demographic for the variable was covered within the sample population. Findings revealed that 24 of the study's schools had less than 15% of students enrolled in this program, while 21 had at least 40% enrolled, and 23 had enrollment numbers between 15% and 40%. These statistics made it possible to exclude the economic status of the

school as an extraneous variable for study conclusions since all levels were equitably represented.

Research Procedure

This quantitative study initially analyzed survey data taken from parents and school personnel and compared it to the student achievement of Missouri elementary schools whose MAP achievement results were in the top ten for the state and described as exemplary (MDESE, 2008c). Raw data taken from the instruments were converted into percentages, in order to create a standardized scale, which made comparisons with achievement data possible. The Pearson Correlation Coefficient (*r*) provides researchers with a statistic that describes the extent data fits into a linear model. The coefficient ranges in value from -1 to +1. The closer the coefficient is to either, the stronger the relationship for variables under examination is considered. The strength of a relationship may be referred to as magnitude. For a relationship to be considered statistically significant, a magnitude of >.49 is necessary and said to have a large degree of magnitude. Relationships with a large degree of magnitude had to be identified in order for rejection of the null hypothesis to be possible. As a coefficient approaches zero, the strength of the relationship decreases. Although the Pearson *r* does not prove causality, it does reveal existing relationships and the degree to which the study's variables were related (Runyon, Coleman, & Pittenger, 2000, p. 177). Positive coefficients with a large degree of magnitude indicate that as an increase in the independent variable transpires, so will an increase in the dependent variable (Runyon et al.)

A formula located on the MDESE (2008b) website was used to convert an index score for the grade, subject, and achievement level into a cumulative score for that school

that only included elementary grades. By dividing what was earned by the possible points a percentage was identified which made it possible to compare perceptions revealed on the AQ instruments to achievement levels. Two schools that consisted of only a sixth grade; served as study participants, these schools had a total of 1800 cumulative MAP points possible in communication arts and mathematics. The other schools had either three or four grades in the elementary school. These schools had 5400 and 7200 cumulative MAP points possible, respectively. The AQ instruments used a Likert scale that included choices of *strongly agree, agree, neutral, disagree, and strongly disagree*. The researcher combined percentages from the strongly agree and agree categories for each of the independent variables when comparisons were made with achievement levels.

Descriptive statistics from the Census of Technology (COT) building report disclosed the technological-based communicative methods and extent they were used by participating schools. Under the section of the report entitled, Technology Usage, schools were asked to estimate their routine use of technology to produce web pages and communicate with parents. The instrument defined routine use as three or more times a week. This data allowed the researcher to identify the extent and methods of technology used to make school-related information available to parents (MDESE, 2008a).

Independent Variables

Missouri School Improvement Plan's (MSIP) Advanced Questionnaires (AQ) served as the study's independent variable. MSIP's Advanced Questionnaire (2007) was a survey instrument administered to parents, faculty, and students, and served as one component of a school district's state review. Six items from each of the faculty survey

and the parent survey were directly related to parent involvement. All of these items served as independent variables and were compared with MAP data (MDESE, 2008d).

Dependent Variable

The dependent variable for the study was the MAP results from the top-performing elementary schools in 2007-2008. These school districts were identified by Missouri's Department of Elementary and Secondary Education (MDESE, 2008c). The top-performing elementary schools for the communication arts and mathematics assessments were identified separately. One hundred and forty-seven schools met the initial criteria and were considered to serve as study participants; however, only sixty-eight gave the MSIP's AQ during 2007-2008 academic year.

Hypotheses

H_0. #1. Specific parental involvement perceptions will not increase student achievement.

H_0. #2. Specific attitudes held by school personnel regarding parental involvement with schools will not increase student achievement.

Research Questions

To examine the use of technology to enhance parental involvement and student achievement thoroughly the following questions were examined:

1. What statistically significant relationships exist between specific parental involvement attitudes and student achievement?
2. What statistically significant relationships exist between specific school faculty attitudes surrounding parent involvement and student achievement?

3. What technological-based forms of communication are Missouri's top performing schools using and to what degree?

Summary

All Missouri school districts should aspire to engage parents actively, considering the abundant amount of research which reported their involvement to be the biggest predictor of student achievement. Other factors positively impacted included attitude, attendance, and behavior (Brooks et al., 1997; Cotton & Wikelund, 2005; Epstein et al., 2002; Hopkins, 2000; Lewis, 2003; Mapp & Henderson, 2002). Unfortunately, strengthening and maintaining the home-school connection remained a difficult challenge for all involved, due to a number of factors, according to research (Barbour et al., 2005). Trust between the two entities was crucial, if the stakeholders intended to work collaboratively towards the shared goals of student success and school improvements (Dufour et al., 2005, Epstein et al., 2002).

The researcher in the study investigated parental involvement protocol and opinions reported by those associated with Missouri's top performing schools (MDESE, 2008c), in an effort to identify relationships that may exist with student achievement. If a statistically significant relationship could be established, then it would logically follow that Missouri schools stood to benefit from allocating resources accordingly by building connections to parents using all methods available. Technology may provide busy parents and school faculty with the most efficient and effective tools for maintaining the invaluable home-school connection (Taylor, 2007). Furthermore, technological-based communications were in alignment with, and could be used to encourage each of the six

types of parent involvement (Epstein, 2002) identified: parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community.

In support and recognition of technology's importance to education, President, Barack Obama (2008) made the following statement:

> As a country, we have ensured that every American has access to telephone service and electricity, regardless of economic status, and I will do likewise for broadband Internet access. We, [Obama and Biden] believe we can get true broadband to every community in America through a combination of reform of the Universal Service Fund, better use of the nation's wireless spectrum, promotion of next-generation facilities, technologies and applications, and new tax and loan incentives. (Obama, 2008)

Chapter One offered the reader background information regarding the importance of parent involvement in schools and how it was related to student achievement. In Chapter Two, a thorough review of the most current research regarding parental involvement in schools and how technology may be used to bridge the home-school gap was explored. In Chapter Three the study's subjects, design, and methodology were explained. An analysis and an interpretation of what the collected data reflected regarding the extent and methods to which top-performing Missouri schools and parents collaborate to increase student achievement was offered in Chapter Four. In Chapter Five, implications the findings of this study may have on the operation of effective schools were examined.

CHAPTER FOUR - RESULTS

Introduction

The No Child Left Behind (NCLB) Act of 2001 required schools to show annual growth on a state-authored standardized test, in order to maintain funding. The Act also dictated that schools involve families in meaningful ways that were documented and served as one component of the school's comprehensive improvement plan (MDESE, 2008). High stakes standardized tests were the universally accepted instruments by which schools were judged in the United States (No Child Left Behind [NCLB], 2002) making student performance on the instrument crucial to the institution's success. By examining the practices and attitudes held by those associated with top performing schools, leaders may be better prepared to obtain similar achievement results. Effective school leaders wisely invest limited resources in ways most certain to elevate the successes of the students and the school (Adkins, 2004). Additionally, school leaders who enjoyed the support of those with shared aspirations became more likely to make these ambitious pursuits a reality (Epstein & Jansorn, 2004).

This chapter presented and analyzed data collected from Missouri's top performing elementary schools surrounding the topic of parent involvement. The results varied by school size, yet some involvement trends did emerge for all schools and were more closely aligned to student achievement than others. The school's use of technology to inform parents and the extent to which various technologies were used revealed current practices of the study's subjects.

Results

Stratified and whole-study population data were run through a Pearson correlation statistical analysis to explore relationships among the variables. Data taken from the Missouri School Improvement Plan's (MSIP) Advanced Questionnaires (AQ) were organized, and then arranged in descending order into tables. All AQ study data were compared to MAP achievement, using a correlation coefficient and a coefficient of determination. The correlation of coefficients established if a statistically significant relationship existed among the variables and to what degree, or magnitude. Cohen (1988) suggested that correlation coefficients could be characterized as small, medium, or large, and provide insight regarding the strength of the relationship being analyzed. Coefficient of determination revealed the proportion of variance in one variable that could be explained by the other variable (as cited in Runyon, Coleman, & Pittenger, 2000).

Based on the statistical analysis, the first null hypothesis was rejected for two of the six variables considered from the parent and faculty survey instruments. Parents with children in schools who encouraged them to be involved and provided learning strategies designed for the home did experience elevated student achievement. Both of these variables returned a Pearson *r* with a large degree of magnitude and exhibited the strongest relationships of those compared with student achievement. In addition, the strongest relationships with student achievement emerging from the variables examined on the faculty AQ survey instrument included the practice of encouraging parents to be involved and providing learning strategies to be used in the home. It was noteworthy that practices most closely aligned with student achievement from the parent and faculty

survey instruments were mirror images. Tables 1-16 revealed the statistical analysis for the variables examined on both AQ instruments.

Table 1.

Comparison of MAP Results for Schools with 250 or Fewer Students and Items Examined – Parent AQ Instrument

Survey Item	Pearson *r*
#29 Parents are asked for input about school decisions.	.54***
#46 The school encourages parents to be involved.	.53***
#49 The school offers suggestions about how I can help my child learn at home	.40
#50 I am a partner with the school in my child's education.	.36
#38 I can talk with my child's teachers or principal whenever I need.	.33
#28 My involvement in my child's education has improved his/her achievement.	.32

Note: *** Correlation Coefficient is significant at the .500 level.

Table 2.

Coefficient of Determination for Schools with 250 or Fewer Students – Parent AQ Instrument

Survey Item	Coefficient of Determination r^2
#29 Parents are asked for input about school decisions.	.29
#46 The school encourages parents to be involved.	.28
#50 I am a partner with the school in my child's education.	.16
#49 The school offers suggestions about how I can help my child learn at home.	.13
#38 I can talk with my child's teachers or principal whenever I need.	.11
#28 My involvement in my child's education has improved his/her achievement.	.10

Table 3.

Comparison of MAP Results for Schools with 250-500 Students and Items Examined – Parent AQ Instrument

Survey Item:	Pearson *r*
#46 The school encourages parents to be involved.	.69***
#49 The school offers suggestions about how I can help my child learn at home.	.63***
#50 I am a partner with the school in my child's education.	.54***
#29 Parents are asked for input about school decisions.	.46
#38 I can talk with my child's teachers or principal whenever I need.	.40
#28 My involvement in my child's education has improved his/her achievement.	.34

Note: *** Correlation Coefficient is significant at the .500 level.

Table 4.

Coefficient of Determination for Schools with 250-500 Students – Parent AQ Instrument

Survey Item:	Coefficient of Determination r^2
#46 The school encourages parents to be involved.	.48
#49 The school offers suggestions about how I can help my child learn at home.	.40
#50 I am a partner with the school in my child's education.	.29
#29 Parents are asked for input about school decisions.	.21
#38 I can talk with my child's teachers or principal whenever I need.	.16
#28 My involvement in my child's education has improved his/her achievement.	.12

Table 5.

Comparison of MAP Results for Schools with at Least 500 Students and Items Examined – Parent AQ Instrument

Survey Item:	Pearson *r*
#28 My involvement in my child's education has improved his/her achievement.	.47
#38 I can talk with my child's teachers or principal whenever I need	.37
#49 The school offers suggestions about how I can help my child learn at home.	.36
#46 The school encourages parents to be involved.	.35
#50 I am a partner with the school in my child's education.	.25
#29 Parents are asked for input about school decisions.	-.03

Note: *** Correlation Coefficient is significant at the .500 level.

Table 6.

Coefficient of Determination for Schools with at Least 500 Students – Parent AQ Instrument

Survey Item:	Coefficient of Determination r^2
#28 My involvement in my child's education has improved his/her achievement.	.22
#38 I can talk with my child's teachers or principal whenever I need.	.14
#49 The school offers suggestions about how I can help my child learn at home.	.13
#46 The school encourages parents to be involved.	.12
#50 I am a partner with the school in my child's education.	.06
#29 Parents are asked for input about school decisions.	.0009

Table 7.

Comparison of MAP Results for All Participating Schools and

Items Examined – Parent AQ Instrument

Survey Item	Pearson *r*
#46 The school encourages parents to be involved.	.56***
#49 The school offers suggestions about how I can help my child learn at home.	.50***
#29 Parents are asked for input about school decisions.	.46
#50 I am a partner with the school in my child's education	.41
#38 I can talk with my child's teachers or principal whenever I need.	.37
#28 My involvement in my child's education has improved his/her achievement.	.30

Note: *** Correlation Coefficient is significant at the .500 level.

Table 8.

Coefficient of Determination for All Participating Schools – Parent AQ Instrument

Survey Item	Coefficient of Determination r^2
#46 The school encourages parents to be involved.	.31
#49 The school offers suggestions about how I can help my child learn at home.	.25
#29 Parents are asked for input about school decisions.	.21
#50 I am a partner with the school in my child's education.	.17
#38 I can talk with my child's teachers or principal whenever I need.	.14
#28 My involvement in my child's education has improved his/her achievement.	.09

Figures A1 and A2 illustrate the linear models for the two statistically significant relationships found between the associated variables for all participating schools. A perfect positive correlation of 1.0 would mean that a high score of X would result in a high score on Y (Runyon et al., 2000). The closer the values are to 1.0, the stronger the relationship. More data will fall along a straight line in a scatter plot, as the strength of the relationship among the variables increases (Runyon et al.)

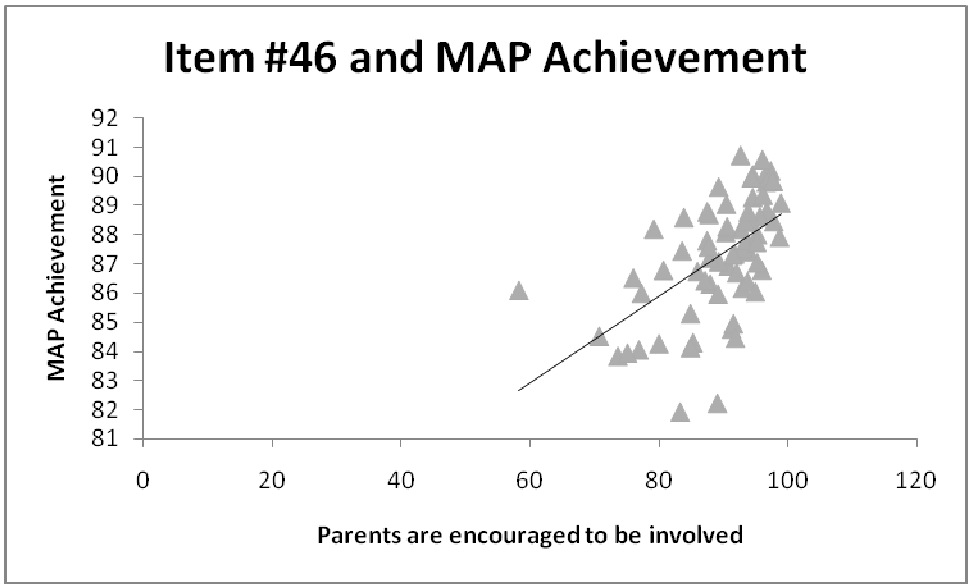

Figure A1. Linear relationship identified for the independent variable and MAP achievement.

Note: N = 68.

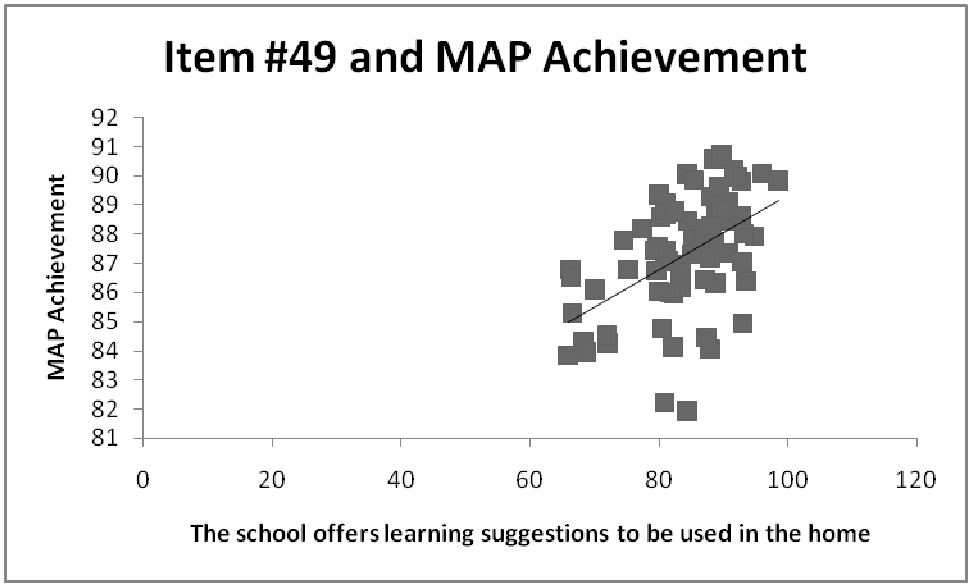

Figure A2. Linear relationship identified for the independent variable and MAP achievement.

Note: N = 68.

Table 9.

Comparison of MAP Results for Schools with 250 or Fewer Students and Items Examined – Faculty AQ Instrument

Survey Item	Pearson *r*
#65 My school has created specific strategies to better involve parents in the education of their child.	.39
#63 My school provides suggestions to parents on ways to assist with their child's learning.	.38
#19 In our school we communicate effectively to parents and the community.	.16
#64 My school views parents as partners in the educational process.	.12
#20 Parents are encouraged to discuss their child's educational needs with the school.	.12
#18 Effective vehicles are in place for parents and community to communicate with school.	.07

Table 10

Coefficient of Determination for Schools with 250 or Fewer Students – Faculty AQ Instrument

Survey Item	Coefficient of Determination r^2
#65 My school has created specific strategies to better involve parents in the education of their child.	.15
#63 My school provides suggestions to parents on ways to assist with their child's learning.	.14
#19 In our school we communicate effectively to parents and the community.	.03
#64 My school views parents as partners in the educational process.	.01
#20 Parents are encouraged to discuss their child's educational needs with the school.	.01
#18 Effective vehicles are in place for parents and community to communicate with school.	.0049

Table 11.

Comparison of MAP Results for Schools with 250-500 Students and Items Examined – Faculty AQ Survey

Survey Item	Pearson *r*
#63 My school provides suggestions to parents on ways to assist with their child's learning.	.63***
#65 My school has created specific strategies to better involve parents in the education of their child.	.53***
#64 My school views parents as partners in the educational process.	.49
#20 Parents are encouraged to discuss their child's educational needs with the school .	.35
#19 In our school we communicate effectively to parents and the community.	.28
#18 Effective vehicles are in place for parents and community to communicate with school.	.23

Note: *** Correlation Coefficient is significant at the .500 level.

Table 12.

Coefficient of Determination for Schools with 250-500 Students – Faculty AQ Instrument

Survey Item	Coefficient of Determination r^2
#63 My school provides suggestions to parents on ways to assist with their child's learning.	.40
#64 My school views parents as partners in the educational process.	.28
#65 My school has created specific strategies to better involve parents in the education of their child.	.24
#20 Parents are encouraged to discuss their child's educational needs with the school.	.12
#19 In our school we communicate effectively to parents and the community.	.08
#18 Effective vehicles are in place for parents and community to communicate with school.	.05

Table 13.

Comparison of MAP Results for Schools with at Least 500 Students and Items Examined – Faculty AQ Instrument

Survey Item	Pearson *r*
#63 My school provides suggestions to parents on ways to assist with their child's learning.	.52***
#65 My school has created specific strategies to better involve parents in the education of their child.	.50***
#64 My school views parents as partners in the educational process.	.37
#20 Parents are encouraged to discuss their child's educational needs with the school.	.36
#19 In our school we communicate effectively to parents and the community.	.34
#18 Effective vehicles are in place for parents and community to communicate with school.	.34

Note: *** Correlation Coefficient is significant at the .500 level.

Table 14.

Coefficient of Determination for Schools with at Least 500 Students – Faculty AQ Instrument

Survey Item	Coefficient of Determination r^2
#63 My school provides suggestions to parents on ways to assist with their child's learning.	.27
#64 My school views parents as partners in the educational process.	.25
#65 My school has created specific strategies to better involve parents in the education of their child.	.14
#20 Parents are encouraged to discuss their child's educational needs with the school.	.13
#19 In our school we communicate effectively to parents and the community.	.12
#18 Effective vehicles are in place for parents and community to communicate with school.	.12

Table 15.

Comparison of MAP Results from All Participating Schools and Items Examined – Faculty AQ Instrument

Survey Item	Pearson *r*
#63 My school provides suggestions to parents on ways to assist with their child's learning.	.46
#64 My school views parents as partners in the educational process.	.38
#65 My school has created specific strategies to better involve parents in the education of their child.	.32
#20 Parents are encouraged to discuss their child's educational needs with the school.	.27
#19 In our school we communicate effectively to parents and the community.	.21
#18 Effective vehicles are in place for parents and community to communicate with school.	.14

Table 16.

Coefficient of Determination for All Participating Schools – Faculty AQ Instrument

Survey Item	Coefficient of Determination r^2
#63 My school provides suggestions to parents on ways to assist with their child's learning.	.21
#64 My school views parents as partners in the educational process.	.14
#65 My school has created specific strategies to better involve parents in the education of their child.	.10
#20 Parents are encouraged to discuss their child's educational needs with the school.	.07
#19 In our school we communicate effectively to parents and the community.	.04
#18 Effective vehicles are in place for parents and community to communicate with school.	.02

Census of Technology Building Reports for the participating schools were also examined, in an effort to understand thoroughly what technology Missouri's top performing elementary schools utilized to engage parents. The academic successes of the schools made it worthwhile to investigate practices and procedures implemented for schools wanting to achieve similar results. Tables 17-20 disclosed technologically based feedback systems the study's subjects employed by school size and whole-study

populations. Illustrated in Figures B1 – B6 and Table 21 were the COT building data associated with the subject's use of technology to communicate to parents.

Table 17.

Technological-Based Feedback Systems Used by Schools with 0-250 Students

Feedback System	Routine Usage
Electronic Mail	92%
Voice Mail	50%
Listserv	33%
Online School Information Systems	22%
Online Homework Information	8%
Homework Hotline – Telephone	0%

Note: N = 24

Table 18.

Technological-Based Feedback Systems Used by Schools with 250-500 Students

Feedback System	Routine Usage
Electronic Mail	100%
Voice Mail	46%
Online Homework Information	29%
Online School Information Systems	22%
Listserv	17%
Homework Hotline – Telephone	21%

Note: N= 24.

Table 19.

Technological-Based Feedback Systems Used by Schools with at Least 500 Students

Feedback System	Routine Usage
Electronic Mail	100%
Voice Mail	95%
Homework Hotline – Telephone	25%
Online School Information Systems	22%
Online Homework Information	15%
Listserv	10%

Note: N = 20.

Table 20.

Technological-Based Feedback Systems Used by All Schools

Feedback System	Routine Usage
Electronic Mail	97%
Voice Mail	75%
Online School Information Systems	22%
Listserv	21%
Online Homework Information	18%
Homework Hotline – Telephone	15%

Note: N = 68.

Participating subjects used technology to communicate with parents, as evidenced by a mean percentage for all schools of 88.5. Seventy-five percent of these schools also employed teachers and administrators who utilized the Internet through school-related web pages to disseminate school information. Since technology played such a significant role in the involvement efforts of the participating schools, it may follow that its use also served to elevate student achievement.

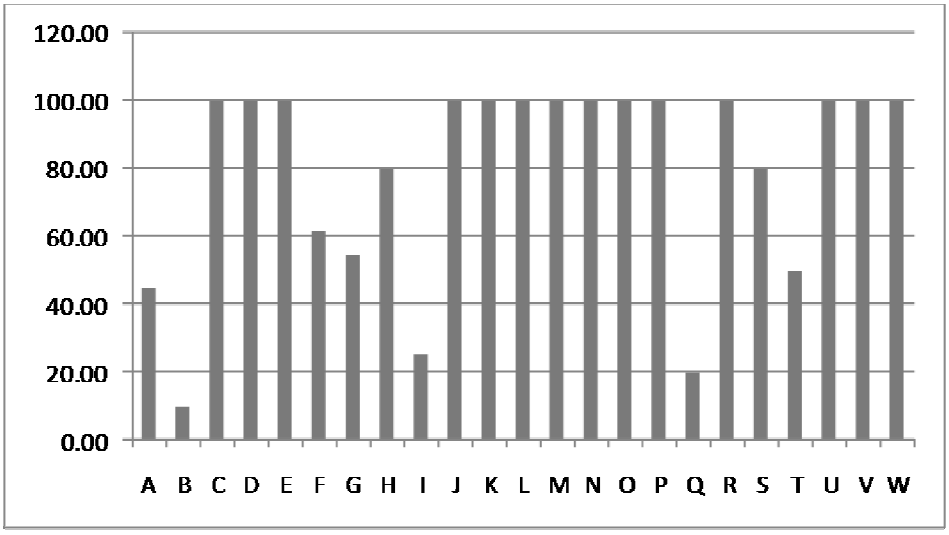

Figure B1. Teachers Use of Technology to Communicate with Parents for Schools with 0-250 Students

Note: Mean percentage = 79.43.

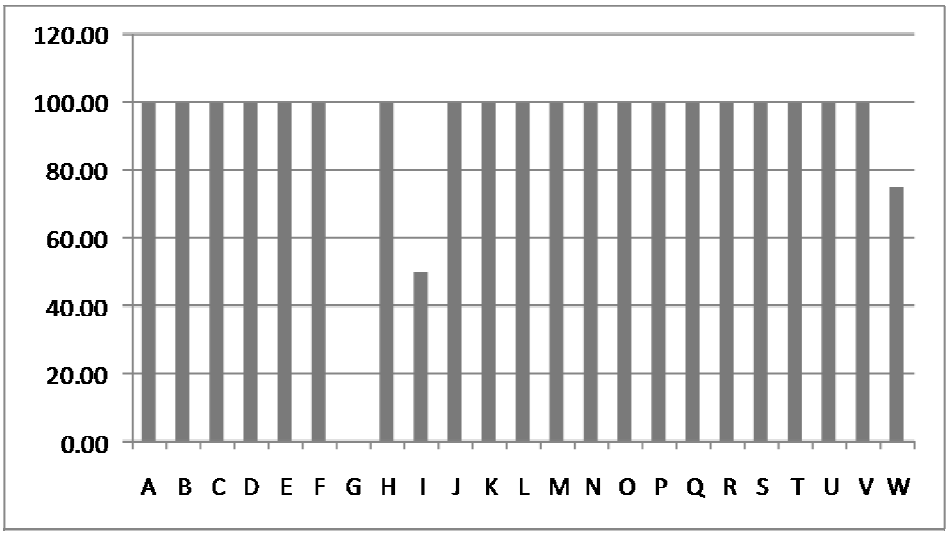

Figure B2. Administrative Use of Technology to Communicate with Parents for Schools with 0-250 Students

Note: Mean percentage = 92.39.

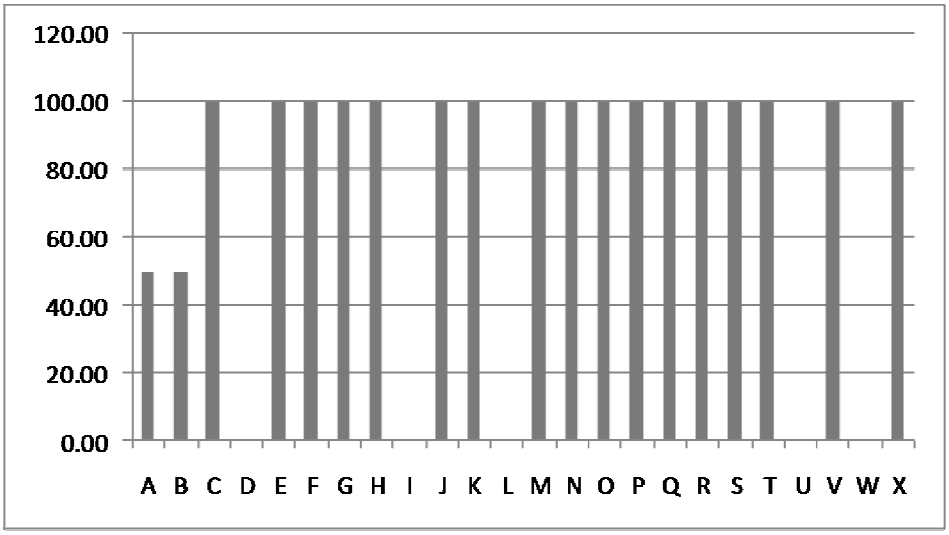

Figure B3. Teachers Use of Technology to Communicate with Parents for Schools with 250-500 Students

Note: Mean percentage = 75.

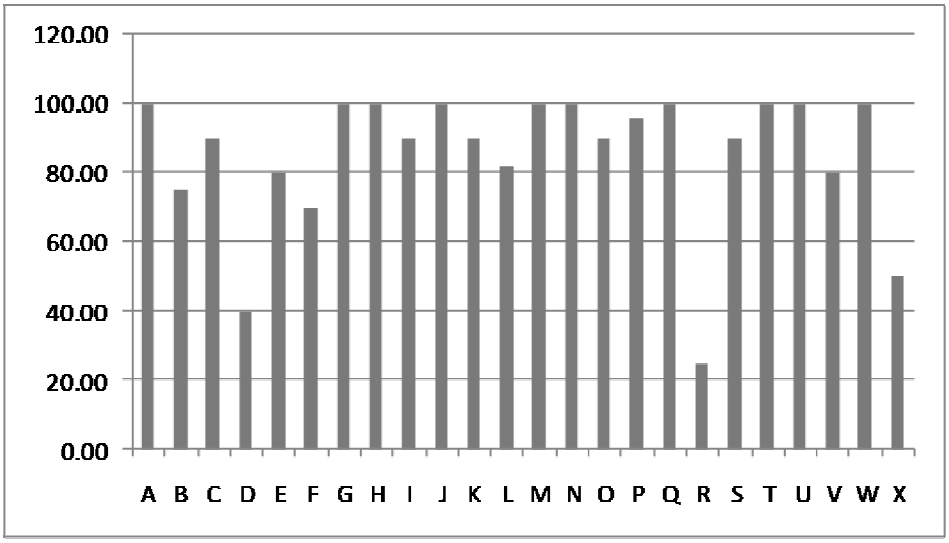

Figure B4. Administrative Use of Technology to Communicate with Parents for Schools with 250-500 Students

Note: Mean percentage = 75.

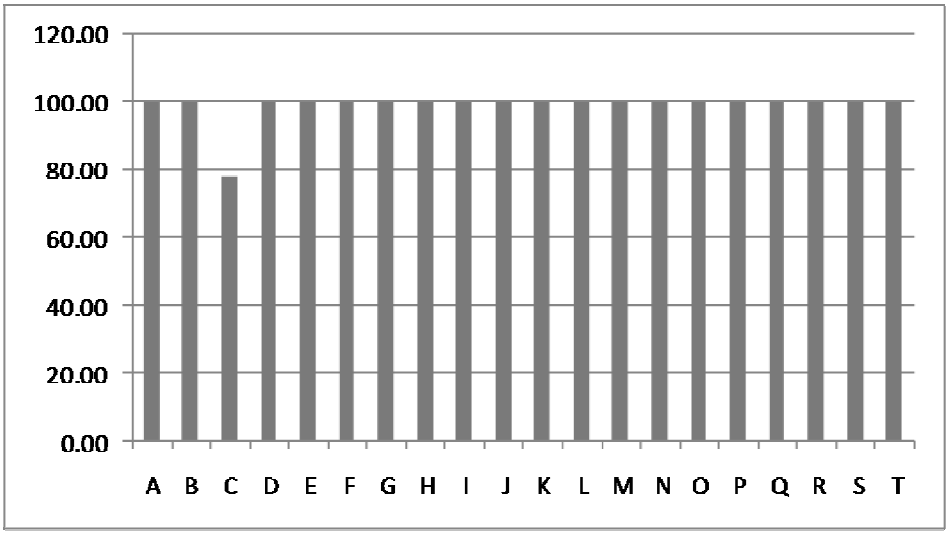

Figure B5. Teachers Use of Technology to Communicate with Parents for Schools with at Least 500 Students

Note: Mean percentage = 98.9.

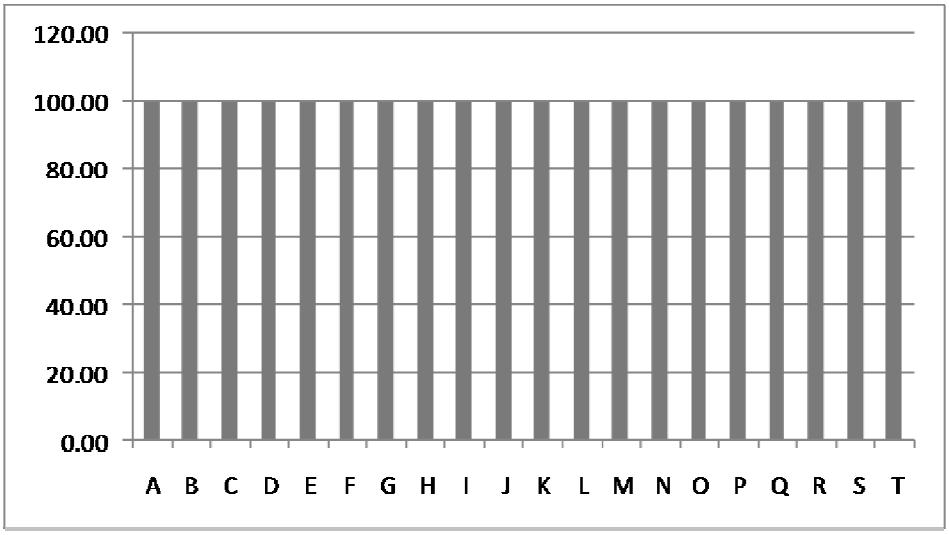

Figure B6. Administrative Use of Technology to Communicate with Parents for Schools with at Least 500 Students

Note: Mean percentage = 100.

Table 21.

Teacher and Administrative Use of Technology to Produce Web Pages and Communicate with Parents - All Schools

	Percentage
Teacher Usage of Technology to Communicate	88.26
Administrative Use of Technology to Communicate	95.96
Teacher Created Web Pages	76.81
Administrative Created Web Pages	70.37

Note: N = 68.

Analysis of Data

Research question one sought to determine if a statistically significant relationship existed between specific parental perceptions surrounding involvement and student achievement. Statistical analysis did not return a definitive answer for all schools. The correlations found between survey data and student achievement varied by type and school size; however, some patterns did emerge.

On the parent AQ survey instrument items 46 and 49 returned the most statistically significant relationships to student achievement, according to whole population data. Item 46 asked parents to what degree they agreed with this statement: The school encourages parents to be involved. The $\bar{x}$ percentage returned by Missouri parents who had a child attending a top performing school was 89.47 with a

Pearson *r* of .56. Item 49 asked parents if they felt their child's school offered suggestions about how they could help their child learn at home. The $\overline{x}$ percentage for this item was 88.85% with a Pearson *r* of .50. Relationships among variables with a correlation of > .49 are considered to have a large degree of magnitude by statisticians (Runyon et al., 2000). Identifying the coefficient of determination made it possible to interpret the impact of specific parental involvement beliefs on MAP achievement. Coefficients of Determination for items 46 and 49 were .29 and .28, respectively. The coefficients of determination may be interpreted to mean that 29% and 28% of the occurrence of elevated MAP scores may be attributed to the school's practice of encouraging parents to be involved and offering suggestions to parents about how to help their child learn at home. The data indicated the two practices to be more likely to increase student achievement than other items analyzed.

Stratified data revealed varying correlation results. Schools with fewer than 250 students experienced the most significant relationship for item 29, which had parents weigh in as to whether the school asked for input about school decisions. The relationship identified a Pearson *r* of .54 and made rejection of the null hypothesis possible when smaller schools were considered. Items 46, 49, and 50 were statistically significant to student achievement for schools with 250-500 students. As mentioned earlier, item 46 asked parents to what degree they agreed with this statement: The school encourages parents to be involved. Parents were asked if they felt their child's school offered suggestions about how they could help with learning at home on item 49. Item 50 read: I am partner with the school in my child's education, and only met the statistical criteria to

deny the null hypothesis for schools of this size. Schools with at least 500 students did not reveal relationships for any of the variables that could be considered significant.

Research question two investigated the attitudes reported by school personnel, concerning parental involvement practices of the school. Items 65 and 63 from the faculty AQ survey instrument asked school personnel if their school had created specific strategies to better involve parents, and whether they provided learning strategies for parents to assist their child with learning at home. Interestingly enough, these two items closely mirrored those from the parent survey and also revealed the most statistically significant relationships to student achievement. Both items returned a correlation coefficient which fell into the medium range (.46 and .38) of magnitude for all participating schools, when compared to student achievement. The $\overline{x}$ percentage for item 65 was 88.83% with a coefficient of determination of .21. Item 63 had a $\overline{x}$ of 95.03% and a coefficient of determination of .14. For the smaller-sized schools (0-250 students), item 65 and MAP achievement returned a Pearson *r* of .39, while item 63 had a .38 correlation coefficient. Both fell into a medium correlation when magnitude of the relationships was considered. Although, these strategies represent practices schools may incorporate to increase student test performance, no significant relationships were found among the variables that made it possible to reject the associated null hypotheses.

Schools which had at least 250 students returned statistically significant relationships for items 63 and 65. Both variables were considered significant to student achievement with correlation of coefficients that met or exceeded the >.49 statistical criteria (Runyon et al., 2000) The data allowed for the rejection of the null hypothesis for the larger schools on items 63 and 65. A correlation of .53 was revealed between item 64

and student achievement for schools that had 250-500 students. Item 64 stated: The school views parents as partners in the educational process. The relationship allowed for the rejection of the null hypothesis for that sized school.

Research question three examined technological methods top-performing Missouri elementary schools utilized to communicate with parents, regarding student learning and performance. Tables 17-20 represented data that detailed the various technological methods used to communicate with parents by school size and whole population. The overwhelming majority relied on electronic mail to maintain communication with parents. Voicemail feedback systems were used in 75% of the participating schools. Far less popular were the call systems, homework hotlines via the telephone and web, and Listservs. It remained unclear the extent these schools used School Information Systems (SIS) hardware to allow parents access to their child's day to day performance. The COT instrument did not specifically inquire as to the school's use of this technology. However, twenty-two percent of the subjects wrote in a use of an SIS program under a survey heading entitled, Other (MDESE, 2008a).

The degree these Missouri educators used technology to communicate and disseminate information pertinent to school was also disclosed on the COT instrument. The estimation for routine usage of modern technology to communicate with parents, and the percentage of teachers and administrators with school-related web pages revealed these schools do both. Electronic mail, the use of school web pages, and voicemail were reported on the COT instrument as the methods most frequently used to communicate with parents. Ninety-two percent of teachers and administrators reported using e-mail and 73.59 percent had school-related web pages.

Hypotheses

H_0. #1. Specific parental involvement perceptions will not increase student achievement.

H_0. #2. Specific attitudes held by school personnel regarding parental involvement with schools will not increase student achievement.

Deductive Conclusions

The null hypothesis stated that specific parental perceptions will not increase student achievement and was rejected for two of the six independent variables examined, when all schools were considered. Items 46 and 49 returned statistically significant relationships with student achievement. Schools with parents who believe the school encouraged their involvement positively impact student achievement, as evidenced by a correlation of .56. Parents who were offered suggestions about how to help their child learn at home also returned a statistically significant relationship with student achievement.

The second null hypothesis stated that specific attitudes held by school personnel regarding parent involvement with schools will not increase student achievement. Two of the six items analyzed closely mirrored those found on the parent survey and also returned the strongest relationships to impacting student achievement positively. A school's practice of creating specific strategies for parents to be involved and providing learning strategies to be used in the home returned correlations with medium degrees of magnitude, and may represent practices conducive to elevating achievement levels. However, the relationships were not strong enough to reject this null hypothesis, when whole population data was considered. However, for schools with 250 or more students,

items 63 and 65 reveal significant relationships with student achievement, with a large degree of magnitude allowing the null hypothesis to be rejected for the larger schools. The other four variables analyzed included perceptions regarding parents' belief they positively impacted their child's achievement, whether they felt the school asked for input about school decisions, whether parents had access to the child's teacher or administrator when needed, and whether parents were partners with the school in the child's education. All returned relationships with a medium degree of magnitude and may also serve to increase student achievement, but did not allow for the rejection of the null hypothesis.

Summary

Analysis of data from this study resulted in rejection of the first null hypothesis for two of the six independent variables, considered from the MSIP Parent AQ instrument. Schools that encourage parents to be involved and offer learning strategies to be used in the home experience elevated achievement. No statistically significant relationships were revealed for the independent variables considered on the AQ instrument taken by school personnel.

The reader was offered background information regarding the importance of parental involvement in schools and how it was related to student achievement, in Chapter One. A thorough review of the most current research regarding parent involvement in schools and how technology may be used to bridge the home-school gap was explored in Chapter Two. The study's subjects, design, and methodology were explained in Chapter Three. Chapter Four contained an analysis and an interpretation of what the collected data reflected regarding the extent and methods to which top-

performing Missouri schools and parents collaborate to increase student achievement. Implications the findings of this study may have on the operation of effective schools were examined in Chapter Five.

CHAPTER FIVE - DISCUSSION

Introduction

The purpose of this study was to examine perceptions surrounding parent involvement and investigate the impact on student achievement. Epstein's (2004) theory of overlapping spheres was founded on the notion that parents, schools, and communities form the major entities of influence on children's lives and provided the researcher with the lens through which the study was designed and viewed. The Missouri Assessment Program (MAP) was utilized as the study's dependent variable. This quantitative study analyzed the views of parents and school faculties from Missouri's top performing schools surrounding the topic of parental involvement, in comparison to their MAP performance. Additionally, the researcher analyzed the school's use of technology to communicate with parents by method and type.

The sample of the study included all elementary schools performing in the top ten on the Missouri state assessment in the 2007-2008 academic year, that were also involved in the fourth cycle of the Missouri State Improvement Plan's (MSIP) review process, and administered the Advanced Questionnaire (AQ) survey instruments. Building reports entitled, Census of Technology (COT) supplied data for the methods and extent to which the participating schools used technology to bridge the home-school gap, and additional insight into what schools may do to elevate achievement levels.

The data were gathered and analyzed through the Pearson product-moment coefficient of correlation (Runyon et al., 2000). Descriptive statistics were reviewed in

addition to the correlations analysis and revealed trends in the attitudes and practices relating to parent involvement in Missouri's highest achieving elementary schools (MDESE, 2008c). The quantitative data disclosed the degree to which these schools used a variety of technological-based platforms to communicate with parents (MDESE, 2008a).

Findings demonstrated that when schools encourage parents to be involved, student achievement is enhanced. These high performing schools made parental inclusion a priority. In addition, school personnel offered learning strategies parents could implement in the home. As a result of the practices, achievement levels were enhanced.

COT reports were considered in isolation to the AQ instruments, to investigate the types of technology top-performing Missouri schools used and to what extent. Again, schools aspiring to achieve similar academic success may look to those experiencing heightened success for guidance.

Implication for Effective Schools

Study results implied that using technology to increase parental involvement and student achievement could be a practice school leaders implement in their endeavor to meet the No Child Left Behind (NCLB) Act's criteria and enhance school climate (Epstein et al., 2002). In the Pearson's correlation analysis, actively engaged parents and school personnel, committed to their inclusion, commonly arose as an indicator of elevated student achievement. In alignment with the findings was President, Barack Obama's (2008) commitment statement that one day every American student would have Internet access in order to remain competitive in today's global market. Parents with children who have the electronic capabilities associated with Internet access would also

have communicative opportunities at their disposal that they might not have had before, and which, in turn, eliminates one of the primary barriers that prevent electronic forms of communication (Reigeluth & Duffy, 2007).

The quantitative identification of using technology to increase parent involvement and student achievement has left some questions unanswered. Parent study participants believed their child's school involved them, but when asked if their child's school asked for their input regarding school decisions, a $\overline{x}$ of only 57% agreed with the statement. This was over 27% less than all other involvement related survey data, and indicated that schools either were not embracing parents in the decision-making process or were not effectively communicating to parents their desire for them to participate in these types of activities.

Parent survey item #28 asked parents if they felt their involvement increased their child's achievement level. When compared with student achievement, the item had the smallest correlation, when all schools were considered. Why wouldn't the parental opinion surrounding their ability to impact the child's academic success positively have a stronger relationship to achievement results? Similar to findings revealed in a study conducted by the Education Commission of the States (2008). These results suggest many parents were not convinced of the importance their role had on the child's academic success.

Two of the weakest correlations identified on the school personnel's survey were derived from items 18 and 19, which were closely related in nature. Item 18 asked to what degree personnel felt the school had effective vehicles in place for parents and the community to communicate with the school. Item 19 asked faculty members if the school

communicated effectively to parents and the community. In view of the fact that study after study had routinely demonstrated parent involvement was the biggest predictor of student achievement (Deutscher, 2004; Epstein et al., 2002; Epstein & Jansorn, 2004; Henderson & Mapp, 2002; Payne, 2006), one would expect stronger relationships to exist for the variables. Study results indicated that, although schools were becoming increasingly aware of the positive impact parents had on student achievement, there was still a long way to go towards meaningful inclusion which was recognized by all involved.

Should President Obama (2008) be able to fulfill his educational goal of making sure every student becomes Internet-connected, communication between parents and schools should increase and achievement be enhanced. It could be through technological vehicles that access to assignments and other relevant school information become available anywhere and at any time. Hectic schedules for parents and educators could become less of an obstacle through modern technology (Adkins et al., 2004).

Recommendations

Study results revealed that the vast majority of Missouri school's teachers used Internet connected computers to communicate with parents via electronic mail, web pages, homework hotlines, etc. However, for home-school partnerships to benefit optimally from technology, parents and teachers alike must recognize it for the invaluable communicative tool that it is. Future studies exploring parent perceptions regarding technological-based communications may benefit educational communities. Are parents Internet-connected in their home? Do they feel the expense surrounding being Internet-connected would be worthwhile, if it increased their child's academic performance? To

what degree are Missouri parents willing to use technology to remain aware of their child's academic world? These types of questions were asked of school personnel, who overwhelmingly indicated a capability, proficiency, and willingness to use technological-based communications. If these questions were added to the parent AQ survey, the responses would certainly add to existing knowledge and provide insight into how to further connect parents with school.

Summary

Technology's ability to meet the criteria of the six types of involvement Epstein (2002) outlined may make it possible for busy parents and educators to communicate more frequently and for parents to become better informed of important school information. Some trends emerged from the AQ responses and revealed statistically-significant relationships with student achievement. These relationships indicated that school leaders who made involvement practices a priority experienced more academic success for students and the institution. Technology was becoming increasingly visible in schools and the digital divide was decreasing (Reigeluth & Duffy, 2007). Initiatives designed to support and connect our students and families to the school via technology could only foster communicative efforts and further connect two parties so fundamental to a child's success.

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APPENDIX A

Section 1118 of No Child Left Behind Act

1. Provide parents with key information regarding curriculum, student performance on state assessments, qualifications of teachers, and overall school and district performance.

2. Allow parents to transfer their child to another school if the school in which they are enrolled is deemed persistently dangerous or if the child is a victim of a violent crime act on school grounds.

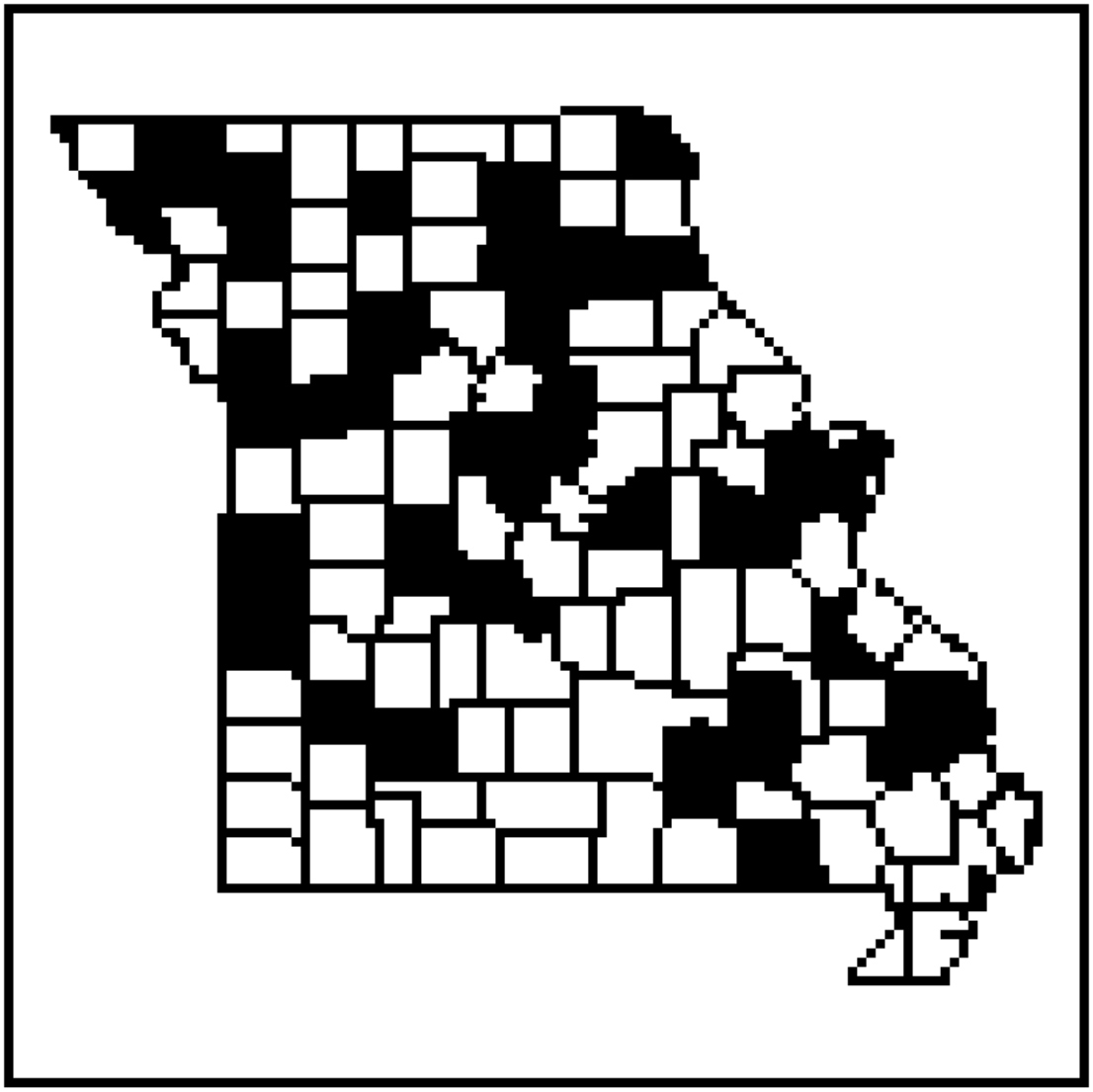
3. Establish a Committee of Practitioners in which districts, parents, teachers and others review and advise the state educational agency on any regulations to implement Title I and the Title I or consolidated state plan.

4. Develop a written school and district parental involvement policy for schools qualifying for Title I funding, which is to include a school-parent compact on the roles of the teacher, school, and
parent in raising the academic achievement of the student and conduct an annual meeting for parents to explain the Title I program and opportunities for parental involvement.

5. Notify parents with children enrolled in a Title I school of their right to participate in the development of the School Improvement
Plan. (United States Department of Education [USDE], 2005, p. 59- 63)

APPENDIX B

Study Participants by Location



APPENDIX C

Missouri School Improvement Plan – Partial Parent Advance Questionnaire

Indicate how much you agree or disagree with each statement by clicking one of the circles.

25. The school recognizes the accomplishments of my child.
26. My child's opinions are valued by teachers and administrators.
27. My child's school promotes an environment of mutual respect among students.
28. My involvement in my child's education has improved his/her achievement.
29. Parents are asked for input about school decisions.
30. Our school has a program that teaches and reinforces student self-discipline and responsibility.
31. My school has clear procedures for handling school emergencies.
32. There are students from my child's school that belong to street gangs.
33. The school values and respects differences among students and their families.
34. Effective assistance is provided for children having difficulty in school.
35. The way they teach at this school works well for my child.
36. My child is given a fair chance to succeed at school.
37. My child likes attending this school.
38. I can talk with my child's teachers or principal whenever I need.
39. I know how well my child is doing in class.
40. I feel my child is safe at school.
41. I receive information about the educational services available to my child at school.
42. My child's school building is in good condition.
43. The community provides enough money to for the schools to do a good job.
44. Discipline in my child's school is handled fairly.
45. If I could, I would send my child to a different school.
46. The school encourages parents to be involved.
47. In our community people tend to trust each other.
48. My child has been taught in school about respect for other cultures.
49. The school offers suggestions about how I can help my child learn at home.
50. I am a partner with the school in my child's education.
51. I know what my child's teachers expect in school.
52. The community is proud of this school.
53. My child's teachers are good teachers.
54. I expect my child to do well in school.
55. My child's teachers expect very good work from my child.
56. The school has helped my child establish educational and career plans.
57. The guidance counselor is available to help my child if he/she has a personal problem.
58. Career-Technical Education is an essential part of the district's program of studies.

59 I am aware of adult learning opportunities offered by the district.

APPENDIX D

Missouri School Improvement Plan – Partial Faculty Advanced Questionnaire

Indicate how much you agree or disagree with each statement by clicking one of the circles. If you have no experience on which to base a response or the item is not applicable to you, leave it blank.

13. Teachers in our school use effective practices to keep all students actively engaged in learning.
14. Educators in our school respond to inappropriate behaviors quickly and effectively.
15. Norms for conduct that foster collegiality and professionalism among professional staff and administrators are clear and routinely followed.
16. Teachers in my school are routinely involved in formulating school wide decisions and policies.
17. Teachers are routinely engaged in collaborative problem solving around instructional issues.
18. Effective vehicles are in place for parents and community to communicate with the school.
19. In our school we communicate effectively to parents and the community.
20. Parents are encouraged to discuss their child's educational needs with the school.
21. I routinely analyze disaggregated student data and use it to plan my instruction.
22. An assessment system is used that provides timely feedback on specific knowledge and skills for individual students.
23. My school administers assessments throughout the school year that are used to guide instruction.
24. My school uses assessment data to evaluate and align the curriculum.
25. Emphasis is placed on valuing and respecting differences among students and their families in our school.
26. Student opinions are valued by teachers and administrators.
27. Faculty and staff solicit input from diverse student groups regarding the improvement of our school.
28. I feel comfortable having discussions regarding racial / ethnic issues with my colleagues.
29. Individual student differences are appreciated at our school.
30. Students are provided with opportunities to construct and work on long-term projects of their own design.
31. In our school teachers are encouraged to be instructional leaders.

32. My school's principal fosters shared beliefs and a sense of community and cooperation.
33. My school's principal monitors the effectiveness of school practices and their impact on student learning.
34. Our principal identifies issues in the school that could potentially become problems.
35. My school's principal systematically engages faculty and staff in discussions about current research on teaching and learning.
36. Our school teaches and reinforces student self-discipline and responsibility.
37. Students who are prone to violence are systematically identified.
38. Our school promotes an environment of mutual respect among students.
39. The content considered essential for all students to learn versus that considered supplemental has been identified and communicated to teachers.
40. My school systematically ensures that teachers address essential content.
41. The amount of essential content that has been identified can be addressed in the instructional time available to teachers.
42. The essential content is organized and sequenced in a way that students have ample

opportunity to learn it.
43. Our principal promotes innovation.
44. I have the skills necessary to meet the needs of all learners in my classroom.
45. I believe that I can positively impact student performance.
46. I have received violence prevention training.

Appendix E

Census of Technology Building Report

TECHNOLOGY USAGE

1) Estimated percentage of administrators, teachers, and students routinely using following applications.

Application	Administrators	Teachers	Students
Educational software	%	%	%
Email	%	%	%
Electronic Resources:			
EBSCO host	%	%	%
Electronic encyclopedia	%	%	%
Newsbank	%	%	%

2) Estimated percentage of administrators, teachers, and students routinely using computers for following functions.

Function	Administrators	Teachers	Students
Produce media, web, or multimedia products to demonstrate learning, make presentations	%	%	%
Produce written or print products to demonstrate learning, make presentations	%	%	%
Communicate with peers, experts, others	%	%	%
Communicate with parents and students	%	%	%
Conduct online research	%	%	%
Participate in online courses (this year)	%	%	%
Manage student records (spreadsheet/database)	%	%	
Track student performance	%	%	
Assess student performance	%	%	
Deliver and present instruction	%	%	

Prepare lesson plan(s)		%	

3) Estimated total FTE of staff or others directly responsible for integration of technology into curriculum and instruction.

EMPLOYEES (Check all that apply)		NON-EMPLOYEES (Check all that apply)	
____Instructional tech specialist	FTE :____	____Students	Hours worked:____
____Library/media specialist	FTE :____	____Regional center/RPDC	Hours worked:____
____School administrator	FTE :____	____Other (specify) _____	Hours worked:____
____Teacher	FTE :____		
____School technical staff	FTE :____	____None	
____District technical staff	FTE :____		
____Other (specify) _____	FTE :____		
____None			

4) Estimated percentage of teaching staff fully integrating technology into curriculum and instruction. _____%

5) School (or district) supported technology-mediated feedback. (Check ALL that apply)

____Automated absentee system
____Electronic bulletin board
____Email
____Homework hotline via web
____Homework hotline via telephone
____Listservs
____Voice Mail
____Other (specify)_____
____None

VITA

Gina M. Wood currently teaches elementary education methods courses at Missouri State University in Springfield, Missouri. Teaching experiences have included elementary and middle school grades, masters level education courses for Lindenwood University, and undergraduate education courses for Missouri State University. Specific areas of interest include curriculum, data-driven instruction, parental inclusion in schools, and the incorporation of technology into classrooms.

Educational studies have resulted in an Education Specialist Degree in educational administration from Lindenwood University in St. Charles, Missouri, a Master of Arts Degree in middle school education from Drury University in Springfield, Missouri, and a Bachelor of Science in Education Degree in elementary education from Missouri State University, also located in Springfield, Missouri.