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Effects of Autonomy-supported Learning on Academic Achievement in Indiana Schools

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EFFECTS OF AUTONOMY-SUPPORTED LEARNING ON ACADEMIC ACHIEVEMENT IN INDIANA SCHOOLS

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ABSTRACT

The purpose of this quantitative study was to determine whether there are significant differences among the five indicators of autonomy (assessment, expectations, instruction, learning environment, and relationships) based on school type (elementary or junior high) and if there are differences among the indicators between Title I schools and non-Title I schools. This study also examined if the five indicators of autonomy are able to predict academic achievement as measured by ISTEP+ scores for mathematics and language arts. Based on the findings, this study determined instruction is an area of autonomy that significantly impacts academic performance as measured by language arts ISTEP+ and mathematics ISTEP+. Instruction is the area of autonomy where a significant difference between elementary and middle/junior high schools was found.

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CHAPTER 1

INTRODUCTION

School leaders across the nation are challenged with making sure their schools are successful. This challenge is not unique to public, private, or charter schools and has been a challenge school leaders have faced for decades; it is just evermore present as schools must ensure 100% of their students are meeting standards by 2014.

In 2002, President George W. Bush signed No Child Left Behind (NCLB) into law. NCLB was enacted because the United States felt that to continue its world success experienced during the 1990s, students needed to be held to higher standards of education in order to compete in a global world (Kennedy, 2005). The goal of NCLB was to decrease the achievement gap among subgroups of race, socioeconomic status, students with disabilities, and English language learners. The law required all schools in all states to meet the same standards of success and required each state to design a plan to achieve this success by 2014 (Kennedy, 2005). Finding the best way to conquer the educational challenges set forth in NCLB is a task that will never disappear.

Some researchers have said charter schools were the answer to the educational challenges school leaders face because they are "exempt from significant State or local rules that inhibit the flexible operation and management of public schools" (Spring, 2006, p. 168). Charter schools are based on a mission and are originated on the desire "to provide an education for students that

was not otherwise available" (Stephens, 2008, p. 99). Miron and Nelson (2002) believed staff members who choose to work at the charter school and parents who choose to send their children to the school truly believe in the mission of the school.

Other experts argue that typical public schools, with sanctions lifted and greater autonomy given to teachers, can survive in the competitive market of education. "Increased teacher autonomy is grounded in the conception of the teacher as expert (Hoxby & Muraka as cited in Berends, Springer, & Walberg, 2008, p. 45). When teachers are given the autonomy to develop curriculum based on student needs, academic achievement increases (Bulkley & Wohlstetter, 2004; Miron & Nelson, 2002). Teacher autonomy is a powerful tool when used correctly.

Effectively measuring student success has been a question school leaders have tried to answer throughout the history of education. Research has indicated there is a relationship between exit exams, school autonomy, and academic achievement (Wöbmann, Ludemann, Schutz, & West, 2007).

Cuypers (2009) defined autonomy as "a property of mental states and events: choices, decisions, beliefs, desires, preferences, action, etc. If these are autonomous, then a person, as a whole, is" (p. 192). Giving teachers autonomy can greatly improve morale (Cookson, 1994). Improved teacher morale can be a great promoter of student success when schools are trying to ensure that all students reach the goal established by NCLB.

Allowing educators to display autonomy can serve to motivate them, but finding the key to student motivation is much more difficult. Teachers may find it easier to assign pages to read and give a worksheet to check for understanding because this eliminates subjectivity when faced with numerous state and national guidelines for student performance (Goodlad, 1984). However,

many students do not respond well to this type of motivation.

Reeve and Deci are advocates for student autonomy (Reeve, 2006). However, teachers and schools are reluctant to offer the level of autonomy suggested because control is given to students and it is, ultimately, the school's responsibility to ensure student success (Niemiec & Ryan, 2009). Self-determination theory contends when students' need for autonomy is met, students are more engaged in their learning (Niemiec & Ryan, 2009).

"Self-determination theory based research has consistently demonstrated that more autonomous forms of motivation are associated with a host of positive outcomes from greater academic performance, creativity, and persistence, to enhanced learner wellness" (Niemiec & Ryan, 2009, p. 225). In an autonomy-supportive classroom, students possess a greater self-concept, are more creative, prefer challenge, perform better academically, and are more intrinsically motivated (Reeve, 2006).

In an autonomy-supportive classroom, using assessment effectively is key to academic success. Formative assessment allows teachers to stop and adjust their teaching as instruction unfolds. Formative assessment includes giving specific, meaningful feedback to students in order to improve academic performance (Reeves, 2009). Marzano and Pickering (2011) believe that to increase student ownership in learning, students should set goals and track their progress at specific assessment windows by charting their performance.

A positive learning environment makes all students feel welcome. Teachers can create this environment by interacting with students early in the year about rules and procedures. Students have a voice in this process and they also understand each rule and its importance to the learning environment (Marzano, 2007). Marzano and Pickering (2011) also noted when teachers provide choice through what to learn, how to learn, how to report learning, and which tasks

accomplish learning, students are more engaged.

"I realized that incentives and sanctions were not the right levers to improve education" (Ravitch, 2010, p. 102). Marzano and Pickering (2011) believe a teacher's attitude is one of the most important factors affecting student engagement. They also noted to maintain student engagement teachers should compare activities and learning outcomes to topics that are of personal interest to students.

Effective instructional strategies are an integral component of successful student learning. Marzano and Pickering (2011) noted effective schools can make a difference by having "a well-articulated curriculum and a safe and orderly learning environment" (p. 1). Pollack and Ford (2009) noted identifying objectives at the beginning of a lesson sets a strong focus from the onset of teaching and will engage students because they know the purpose for learning. Effective transitions are also critical to reduce loss of instructional time (Marzano & Pickering, 2011).

In order to build relationships with students, teachers should "know about local events' significance to students, know about rivalries between different groups of students, and know popular terms and phrases used by students" (Marzano, 2007, p. 155). Marzano (2007) believed that to develop strong relationships with students one must be able to put the actions of individual students aside and to not take them personally.

Offering effective feedback is another way to develop rich relationships with students. Marzano (2007) noted offering specific, focused reinforcement to students allows students to recognize the connection between learning and effort. Using verbal reinforcement correctly can enhance the relationship among students and teachers and can have significant positive impacts on student learning (Marzano, 2007).

Statement of the Problem

Every school in the United States is facing increasing accountability measures. School leaders are looking for what can be done to increase academic achievement of their schools so they can remain open for business (Rothstein, 2004) and placing higher standards on schools and increasing the number of testing instruments used does nothing to motivate schools to perform better (Kohn, 1993).

In the wake of the measures placed on schools to perform, Ravitch (2010) noted, "It is assumed that higher test scores on standardized tests of basic skills are synonymous with good education" (p. 111). Marzano (2007) would argue test scores do not make the difference in school performance, but the teacher in the classroom who relates with students every day that has the greatest impact on performance does. Being mindful of student interactions among each other is just as important as the relationship among students and teacher (Marzano & Pickering, 2011).

Albrecht, Haapanen, Hall, and Mantonya (2009) indicated when students are intrinsically motivated, they will perform. There are two ways to motivate people: intrinsic and extrinsic. Pink (2009) noted, "Mechanisms designed to increase motivation can dampen it. Tactics aimed at boosting creativity can reduce it. Programs to promote good deeds can make them disappear" (p. 33). Motivating student performance by offering an incentive if a certain level of performance is attained will often cause students to underperform because their autonomy is reduced (Pink, 2009). In order to engage students in their learning, Kohn (1993) suggested educators create a learning environment where students are inspired to learn. Allowing student participation in classroom decisions will keep them engaged.

Meeting psychological needs through autonomy supportive teaching relates to a positive

school experience (Jang, Reeve, Ryan, & Kim, 2009). Wilson indicated power must be equivalent to responsibility, or the amount of autonomy given must correlate to the level of accountability to which one is held (Bulkley & Wohlstetter, 2004).

Stephens (2008) stated, "Research into creating an environment conducive to student learning which supports a mission of high academic achievement would be interesting," and "What elements are most effective in creating this environment" (p. 113)? Wohlstetter and Chau found that schools with high levels of teacher autonomy tend to use strategies that are linked to student academic success (as cited in Bulkley, 2002). They also noted that additional studies linking teacher autonomy and student success need to be conducted to determine the impact of autonomy on academic performance (Bulkley, 2002).

Two hundred years ago the purpose of education was to serve the needs of the local communities and teach the ideals the local leaders felt were important to the progress of the area. Education slowly evolved to educating youth to be able to compete in an everchanging America during the era of World War I or II where industry dominated our culture. The evolution of the Cold War caused the purpose of education to change in order to become more ready to compete in a global world, which brings us to the purpose of education in the United States today: global competition.

Competition and success among schools in the United States and other countries is measured by academic performance on standardized tests and is regulated by NCLB. Schools and communities feel the growing pressure to be the best on the test and when scores fall short of expected levels of performance, reform measures are considered.

Solutions proposed include alternative schools, voucher systems, charter schools, and innovative teaching methods. In an education world where choices to succeed seem to be

limitless, school leaders are looking for the one method where resources can be invested to ensure academic performance and growth. Determining which indicators of autonomy impact student achievement will help school leaders focus their resources for professional development so that academic growth and success can be attained.

Purpose of the Study

The success of schools has long depended on a number of factors: enrollment, academic achievement, stakeholder satisfaction, or financial solubility. Relationships between school and teacher autonomy exist, but there is little research as to which indicator of autonomy impacts academic achievement. "Although autonomy-supportive teaching has been linked with increased student performance, this contention has not yet been explored in an experimental study" (Furtak, 2012, p. 284). Furtak (2012) further stated, "One might believe that the more autonomy given to students, the greater the level of student learning" (p. 285).

The purpose of this quantitative study was to determine whether there are significant differences among the five indicators of autonomy (assessment, expectations, instruction, learning environment, and relationships) based on school type (elementary or junior high) and if there are differences among the indicators between typical public schools and charter schools. This study also examined if the five indicators of autonomy are able to predict academic achievement as measured by ISTEP+ scores for math and language arts. Being able to ascertain this information will serve to inform school leaders on effective ways to impact academic achievement.

Limitations

The investigation was limited by whether participants were truthful in their responses. Also, the study used Growth Model data from the state of Indiana. If these data were not calculated correctly or not available, the study was limited.

Delimitations

The study used data from public schools housing Grades 4, 5, 6, 7, or 8 and did not consider other grade levels so that growth data was available. The study did not include data from private or parochial schools. With having three questions for each indicator of autonomy within the survey design, a possible limitation would be the ability of these questions to adequately inform autonomy in the classroom. This decision was made in order to make the survey less cumbersome to respondents as an attempt to secure a higher return rate. Finally, the study did not include data from my school district as an effort to limit bias.

Research Questions

The research questions guiding this study were as follows:

1. Are there significant differences in the five indicators of autonomy based on school type (elementary or middle/junior high)?
2. Are there significant differences in the five indicators of autonomy between Title I and non-Title I schools?
3. Do the five areas of autonomy serve as predictors of academic achievement as measured by language arts ISTEP+?
4. Do the five areas of autonomy serve as predictors of academic achievement as measured by math ISTEP+?

Null Hypotheses

The following null hypotheses were generated through the research questions:

1. There are no significant differences in the five indicators of autonomy based on school type (elementary or middle/junior high).
2. There are no significant differences in the five indicators of autonomy between Title I and non-Title I schools.
3. The five indicators of autonomy do not serve as predictors of academic achievement as measured by Language Arts ISTEP+.
4. The five indicators of autonomy do not serve as predictors of academic achievement as measured by Math ISTEP+.

Definition of Terms

The following terms are defined for clarification in understanding this study:

Academic achievement is the success of students as measured by testing instruments in the areas of reading and/or math.

Assessment is goal setting and tracking progress at regular testing intervals (Marzano & Pickering, 2011).

Autonomy is "the capacity to govern oneself" (Cuypers, 2009, p. 192).

Autonomy-supported teaching is where teachers facilitate student needs by matching student needs and interests to learning objectives. Autonomy-supported teaching also creates opportunities for students to guide their own learning (Reeve, Jang, Carrell, Jeon, & Barch, 2004).

Charter schools are independent public schools designed and operated by educators, parents, community leaders, educational entrepreneurs, and others. They are sponsored by

designated local or state educational organizations, who monitor their quality and effectiveness but allow them to operate outside of the traditional system of public schools (U.S. Department of Education, n.d.).

Expectations are clearly defined standards for learning and classroom management (Balcikanli, 2010).

Indicators of autonomy are defined as assessment, expectations, instruction, learning environment, and relationships among students and teachers.

Instruction is defined as the effective use of wait time, differentiated instructional strategies, and meaningful opportunities for students to practice, apply, and demonstrate what they are learning (Danielson, 2007).

Learning environment is a room arranged in such a way that lends itself to collaboration among students; students share responsibility for routine operations and work together to accomplish shared tasks (Danielson, 2007).

Relationships are found in classrooms where students are given support and can support each other in the learning process, academics are celebrated/praised, and the teacher shows genuine interest in student opinions and thoughts (Danielson, 2007).

School autonomy is the freedom granted by a school district to a school with regard to resource allocations, such as capital, financial, and human (Gross, 2011).

School type is the classification given to a school based upon grades housed within the building.

Self-determination theory is one where “students possess inherent growth tendencies and psychological needs that provide a motivational foundation for their optimal functioning, academic engagement, constructive social development, and personal well-being” (Reeve, 2006,

p. 226).

Student autonomy is the freedom granted to students to develop learning objectives, have control over classroom activities, and to have an integral role in the development of classroom rules and discipline (Balcikanli, 2010).

Teacher autonomy is a teacher who has the freedom to develop assessments, curriculum, and learning modalities and objectives based upon working knowledge of student needs (Hoxby & Muraka as cited in Berends et al., 2008).

Typical public schools are schools managed by a public education authority or agency.

Summary and Organization of the Study

The ultimate goal of education is to provide students with an education that best prepares them for success in a global world. The NCLB dictates the continued success of schools in the United States and is directly dependent on the academic performance of their students. Many factors affect the success of students and finding the one method or teaching modality that produces the most success is the question that is left unanswered.

Chapter 1 provided an introduction, statement of the problem, stated the purpose of the study, identified research questions and the null hypothesis, and defined key terms. Chapter 2 presents a current review of literature. Chapter 3 provides information on the method of study, the population sample, survey development and administration, and methods of statistical analysis. Chapter 4 presents findings through a statistical analysis of Hypotheses 1, 2, 3, and 4. Chapter 5 summarizes the findings, conclusions, implications for schools and recommendations for further research.

CHAPTER 2

REVIEW OF THE LITERATURE

Leaders of education at the national, state, district, and school levels are looking for ways to support education efforts in the everchanging world. Leaders must determine the best way for schools to effectively compete with education systems around the world. Supporting school reform efforts is one way, among many, to encourage the nation's youngest people to outperform the youth in other countries. Finding the best reform method is challenging and is the pinnacle of the success of education in the United States.

Reform methods can be rooted in the classroom through the utilization of different teaching styles and intervention systems or by the investigation of what great teachers do differently and implement those techniques across schools. Student autonomy is one aspect of teaching that varies from one classroom to the next and is dependent on the teacher.

Regardless of school type, charter or typical public school, school leaders seek to impact the academic performance of students. A review of the literature will be presented in these sections: review of education, types of schools, autonomous learning, and measurements of success.

History of Education

Prior to 1850, education was a function of the community, and local schools were operated by churches or lay people of the area. In the late 19th century, education moved from

local to state control as a way to standardize education for immigrants (Finn, Manno, & Vanourek, 2000).

School reform continued to evolve over the next two centuries. Academies were first created in the mid-19th century. The creation of academies was opposed by many because they were not promoting education as the public thought they should. Instead, academies were developed to promote individualized special interests relevant to each community (Beadie & Tolley, 2002). Academies were funded primarily by tuition. The schools relied heavily upon the approval of the community for continued success (Beadie & Tolley, 2002).

Education came under great fire from 1960 to the late 1970s. The United States was trying to establish its position in the world as a leader. During this time government and education faced great public doubt (Goodlad, 1984). The Civil Rights Act of 1964 ensured desegregation occurred in schools. The Economic Opportunities Act offered tuition support to those in need who sought higher education (Goodlad, 1984). The Elementary and Secondary Education Act (ESEA) was extended in 1965, and entitlement programs were developed to support numerous aspects of education ranging from supporting low-income families to professional development (Goodlad, 1984).

Additionally, the 1970s saw a great reduction in the number of families that attended church and “approximately 55% of all mothers of school-age children held a job” (Goodlad, 1984, p. 7). Economic conveniences of supermarkets are also noted by Goodlad (1984) as a limiting factor on the support schools received from home. Gathering places, such as the local gas station, beauty salon, and market, ceased to exist and parents and community members had less opportunity to interact.

This era also led to rise of contentious relationships between schools and teachers due to

the rise of collective bargaining (Goodlad, 1984). This was a time period when relationships between schools and teachers were less about working together for the benefit of students and more about being an expert in a specified teaching area. Students were also being educated outside of home, school, and church as technology evolved and television use became more predominant in all households (Goodlad, 1984). Schools now not only faced the challenges of educating children but also the added pressure of righting the wrongs in society. The disparity about who was educating America's youth led to further change in schools ranging from increased private school attendance to, eventually, the charter school movement of the 21st century.

The years between 1970 and the mid-1980s saw an increase in private schools. Private schools were based on community beliefs and ideals (Beadie & Tolley, 2002).

> The academy promotes the values, beliefs, and culture of the local community. Because the local community and institution share the same values, teachers and administrators presumably have the support of parents in decisions involving policy, pedagogy, and curriculum. (Beadie & Tolley, 2002, p. 4)

Charter schools rose out of the desire to create a school with a specific mission and were founded on ideals of the organizing body. The first true charter school was developed by Ray Budde in the 1970s (Spring, 2006).

Types of Schools

Typical Public Schools

The purpose of education has always been determined by the state. The founding fathers of the United States did not include education in the Constitution because the very reason for coming to the United States was to experience freedom, both religiously and politically. By not

including education in the Constitution, the 10th Amendment provides for anything not covered in the document to be a function of the state (Brimley & Garfield, 2008). Therefore, each state decides how to best educate its youth, thus creating 50 different educational structures that are similar but unique to each state's needs.

The original function of education was based on the production of a work force. Therefore, schools taught children basic skills in order to function in an industrial society (Darling-Hammond, 2010). Kamal and Bener (2009) stated, "Education is one of the main foundations for the child's development and also for national human resource development" (p. 212). Darling-Hammond (2010) stated the current purpose of education is "to establish a purposeful, equitable education system that will prepare all our children for success in a knowledge-based society" (p. 2).

During the 2008-2009 school year, there were 49,265,044 students enrolled in school in the United States and they were served by 6,328,318 faculty (Sable & Plotts, 2010). As the purpose of education evolved, schools became more responsible for teaching students more than the basics. In 2006, Americans were surveyed to determine the importance of educational activities. Rothstein (2004) determined the following topics, in order of importance: basic skills, critical thinking skills, social skills and work ethic, citizenship, preparation for work, physical health, and emotional health.

As the responsibility of schools to educate children increased, so did governmental requirements, many of which were not funded. Public schools receive funding from taxes (income, property, and sales), grants, lotteries, private foundations, and partnerships with business (Brimley & Garfield, 2008). Because of the inherent differences in funding due to socioeconomic status, no two states receive equal funding thus causing one state to have a

resource advantage over other states.

School leaders know what their needs are. For schools to be successful, Darling-Hammond (2010) recommended giving schools greater autonomy to allocate and spend funds to best meet the unique needs of the school and district. Many of the societal problems, such as unemployment and incarceration rates, the United States faces are blamed on poor education (Brimley & Garfield, 2008). Now more than ever it is important for schools to educate their students based on local needs to stave off future costs to the public.

Kamal and Bener (2009) discovered certain home factors that affect poor academic success: divorced parents, parents disinterested in their child's education, harsh discipline tactics, and parents who spend an inordinate amount of time on the computer, playing video games, or watching television. They also noted school factors affecting academic performance. Students with a strong dislike for a particular subject are less likely to be successful. Failing to complete homework, hyperactivity, disliking school, and high rates of absenteeism also contribute to poor school achievement. Whitted (2011) found that relationships between children and their parents prior to attending school lay the foundation for being able to learn. Poor relationships and social interactions at home cause our youngest learners to miss out on learning at an early age. Kamal and Bener discovered that school failure can be measured by retention rates. They noted that "8 to 16% of school-age children repeat a grade in school" (Kamal & Bener, 2009, p. 212). Left unattended, these problems are likely to continue.

Finding the key to school success is a must in order to educate youth to compete globally. Educational researchers worldwide designed schools using basic principles of authentic teaching and assessment, application of learning through technology, and high-level thinking (Darling-Hammond, 2010). Sunnyside High School, a high-performing, low socioeconomic school in

Washington, developed a program focused on building relationships, providing and developing meaningful experiences allowing students to participate in their education (Shepard et al., 2012). Roy and Kochan (2012) studied successful Alabama schools and found effective schools to possess effective leadership at all levels, effective relational skills, and a strong commitment to the school and its purpose. Impoverished Canadian schools have also experienced great success. Quality teaching, collaboration, and a high focus on instruction and community partnerships proved successful in Ontario schools (Parker, Grenville, & Flessa, 2011).

Many factors contribute to the demise of public schools. Failing public schools are often the result of poor leadership at the building and classroom levels and poor management (Stein, 2012). Developing successful schools is also based on deep relationships between staff members and students and an engaging curriculum with high expectations and clearly articulated learning objectives (Darling-Hammond, 2010). Whitted (2011) also found strong school relationships can help students overcome relational deficits stemmed from home.

Successful schools will rely not only on relationships but data to help them close the gaps in academic success. Stein (2012) noted successful schools used data to determine areas for professional growth and focused on getting back to the basics of reading and mathematics. Data and high expectations seem to support each other. Teachers with high expectations for learning outcomes can also help to overcome deficits from the home (Whitted, 2011).

Furthermore, Stein (2012) suggested when change is imminent, school leaders need to create a sense of urgency, take immediate charge by setting clear objectives, be visible, communicate clearly and often, and remove ineffective staff. Darling-Hammond (2010) further found schools that had achieved academic success were not afraid to reapportion staff; alter curriculum, assessment, and instruction; and reallocate time and finances to meet student needs.

Some school leaders would find these tasks to be difficult, but effecting change, in some way, is a must for school success.

Typical public schools and charter schools both fail with regard to academic performance. Walberg and Bast (2003) found that government funded schools fail for eight reasons: "lack of competition, ineffective school boards, union opposition, conflicts of interest, political interference, lack of standards, centralized control and funding, and anti-academic classroom incentives" (p. 33). Success in charter schools will also be explored so that commonalities and differences can be explored.

Charter Schools

The U.S. Department of Education (n.d.) defined a charter school as

> an independent public school designed and operated by educators, parents, community leaders, educational entrepreneurs, and others. They are sponsored by designated local or state education organizations, who monitor their quality and effectiveness by allow them to operate outside of the traditional system of public schools. (para. 6)

Nathan (1996) defined charter schools as "public, nonsectarian schools that do not have admissions tests but that operate under a written contract, or charter, from a local school board or some other organization, such as a state school board" (pp. xxvii-xxviii). A charter school is organized around themes that are not normally represented in typical public schools (Gouwens, 2009). Because of this unique structure, charter schools are more autonomous. Because of the degree of autonomy with which charter schools operate versus public schools, attention will be given to charter schools in this section. Charter schools are also an option to traditional education because they

1. Are exempt from significant state or local rules that inhibit the flexible operation and

management of public schools.

2. Operate in pursuit of a specific set of educational objectives determined by the school's developer and agreed to by the authorizing public charter agency. (Spring, 2006, p. 168)

Budde "conceptualized charters as a way of encouraging small groups of teachers to explore alternate education models" (as cited in Lubienski & Weitzel, 2010, p. 4). Regarding the inception of charter schools, Lipman (2004) stated,

> The freedom of charter schools from many of the regulations placed on regular schools raises questions over whether such regulations were meant to improve public schools (since they are being made optional for the charter schools) or to encourage the creation of alternatives to public education. The simultaneity of radical decentralization and privatization, alongside increased regulations of regular schools, suggest that indeed, the larger purpose has been to undermine public education all along. (pp. 30-31)

The face of education changed during the latter part of the 20th century. Finn et al. (2000) defined five distinct shifts in education that paved the way for charter education. Those were the "shift in focus from school inputs to outputs, the setting of higher standards, excellence movement, new school designs, and choice and competition" (Finn et al., 2000, p. 61).

"Parents of students attending charter schools are more likely to approve of the policies of their chosen school than are parents attending government schools" (Walberg & Bast, 2003, p. 31). This ideal can be attributed to the fact the parents have chosen the school for their children to attend as opposed to residing in a specific school attendance area and attending the neighborhood school.

Charters are chosen by their various stakeholders (parents, students, and teachers) for

different reasons. Parents will choose a charter school because they believe the current school is not adequately protecting their children, reaching their children academically, or believing parents are left out of academic decisions impacting children (Weil, 2000).

Teachers choose to work at a charter school as a way to escape increasing governmental guidelines and restrictions that increase paperwork and to experience freedom to try teaching strategies they believe are more effective than the strategies being dictated (Weil, 2000). Most teachers choose to work in charter schools to get out from under bureaucratic restrictions. In a charter school, the teacher can design his or her own curriculum or try new ideas that are "outside the box" without repercussions (Finn et al., 2000). Students choose charter schools to experience a more personal student/teacher relationship, feel safer, and have a more personalized educational experience (Weil, 2000).

Lubienski and Weitzel (2010) stated three goals for charter school reform: equity, innovation, and competition. The authors believed equity should focus on what is right for each child. Because charter schools are freed from many governmental regulations, it is thought they would produce higher academic results because of increased autonomy.

Spring (2006) noted that some charter schools are run by management organizations and have little autonomy because the management organization wants a standardized approach to education. Many of the schools run by the same management organization are designed so much alike that the schools have the same building designs in an effort to ensure high academic achievement. Hoxby and Murarka (as cited in Berends et al., 2008) cautioned against using achievement data to measure the success of charter schools because parents self-select the school for their children. These authors also suggested more research is needed on academic achievement and what factors impact achievement in charter schools.

Measuring charter school effectiveness and academic performance is easier because more data becomes available year after year as charter schools are in operation longer. Charter schools are also growing in student population, so the data available is more representative of the larger population (Miron as cited in Lubienski & Weitzel, 2010). Miron (as cited in Lubienski & Weitzel, 2010) also offered measuring charter school success was easier because standardized test are becoming a more consistent instrument with which to measure success and more grades are being given a standardized assessment.

Hoxby (as cited in Hill, 2006) found that there are several factors that affect the success of charter schools. They are "revenue (per pupil), years since charter law passed, fiscal autonomy, autonomy at start-up, legal/operational autonomy, guaranteed full per-pupil funding, and share of teachers who are union members" (as cited in Hill, 2006, p. 31). Hoxby found that revenue, years since charter law passed, fiscal autonomy, legal/operational autonomy, and guaranteed full per-pupil funding were statistically significant effects on the student enrollment in charter schools (Hill, 2006).

Miron (as cited in Lubienski & Weitzel, 2010) enumerated several reasons charter schools may not be making the expected academic gains. Any combination of these factors can be detrimental to the academic success of charter schools:

1. Lack of effective oversight and insufficient accountability.
2. Insufficient autonomy.
3. Insufficient funding.
4. Privatization and pursuit of profit.
5. Strong and effective lobbying and advocacy groups.
6. High attrition of teachers and administrators.

7. Growth in school size and class size.
8. Rapid growth reforms. (Lubienski & Weitzel, 2010, pp. 88-89)

Ineffective oversight can lead to immeasurable contracts and vague goals. Lack of appropriate autonomy can put pressure on charter schools to outperform typical public schools on state assessments, causing charters to lose the innovativeness on which they were founded.

Stephens (2008) found a successful charter school has the following characteristics: "clear mission, community supported mission, academic goals, rigorous curricula, effective principal leadership, and collaborative professional development" (pp. 22-23). Gross (2011) detailed a study conducted by the Center on Reinventing Public Education. The study found that the mission is critical to the success of charter schools, and when principals and teachers were empowered to lead, through the mission, school success was the result.

Finn et al. (2000) suggested combating the problems of teacher burnout and competition with typical public schools in charter schools by doing the following:

1. Develop a good relationship with the charter sponsor.
2. Have strong, flexible legislation.
3. Procure technical assistance.
4. Develop capital.
5. Hire strong leaders.
6. Allow for adequate time to plan before opening.

Autonomous Learning

Autonomy

Being autonomous is "a property of mental states and events: choices, decisions, beliefs, desires, preferences, action, etc. If these are autonomous then a person, as a whole, is" (Cuypers,

2009, p. 192). One cannot be truly autonomous without reflection on choices (Freidman, 2003). Winch (2006) defined autonomy as "the ability of individuals to choose and follow their own conception of a life that they deem to be suitable for themselves" (p. 1). To be truly autonomous, one must be able to make one's own decisions without the outside influence of others and be able to reflect on the choices made (Clement, 1996).

Autonomy in schools can be viewed in two ways: fiscal and operational (Hoxby as cited in Hill, 2006). Fiscal autonomy can be described as the freedom to manage money as needed and not needing to ask the local school district to release funds before expenditures can occur (Hoxby as cited in Hill, 2006). The ability to determine curriculum, discipline, and initiate contracts with vendors are examples of operational autonomy (Hoxby as cited in Hill, 2006). In a study of countries around the world and the level of autonomy observed within schools, it was determined that "school systems that grant more authority to schools for student assessment, courses, content, and textbooks have higher reading scores" (Organisation for Economic Co-operation and Development, 2011, p. 2).

Teacher morale improves when educators are given the autonomy to establish new schools (Nathan as cited in Cookson, 1994). Hand (2006) argued student autonomy should not be taught or promoted in schools because teachers are the experts with regards to what students need to learn. Others have argued that schools should teach good moral character because with character students can make good choices and reflect on their decisions (Swaine, 2012). "Learning is influenced by social interaction, interpersonal relations, and communication with others" (Danzing, Borman, Jones, & Wright, 2007, p. 5).

School leaders have to be careful when promoting student autonomy if the school community does not encourage autonomous learning (Winch, 2006). Factors affecting student

achievement in charters can include curriculum, pedagogy, who works in the school, and how the school is operated (Gross, 2011). Charter schools managed by an Educational Management Organization are often at a disadvantage with regards to autonomous learning. Educational Management Organizations often remove autonomy at the school level as an effort to maintain fidelity of curriculum delivery and promote quality charter schools (Bulkley, 2002). Hoxby and Murarka (as cited in Berends et al., 2008) stated, "Increased levels of autonomy, flexibility, and market-like competition among schools should propel them to operate more effectively" (p. 39). Little research, however, has been conducted on what inside influences affect student learning in charter schools (Gross, 2011).

Experimental studies have indicated that when teachers offer students a more active role in learning there are increased learning results (Furtak, 2012). The superintendent of public instruction in Arizona believed that school leaders and teachers should be allowed to teach what they feel students need versus what the state leaders say students need (Finn et al., 2000). A study of high school students found that when students are intrinsically motivated academic performance increases (Albrecht et al., 2009). "Learning is enhanced when the learner has an opportunity to interact and collaborate with others on meaningful task" (Danzing et al., 2007, p. 5). There have been many studies on autonomy, most of which have studied the relationship between teachers and students. These studies have neglected the relationship autonomy and the learning process has on what is being learned (Furtak, 2012).

Cookson (1994) stated, "Just as autonomy is a key element in creating accountable schools, individuals have a need for autonomy if they are to live responsible and accountable lives" (p. 127). Reinders (2010) cited several components as evidence of learner autonomy in the classroom. In autonomous classrooms, students should be involved in goal setting,

management of learning materials, selection of resources, selection of learning strategies, control of what is practiced and how it is practiced, self-monitoring of academic progress, assessment portfolio, and reflection over work completed.

Promoting and fostering student autonomy with English language learners is integral to student success (Ebata, 2010). It is important for "English as second language students to create their own learning plans, plan the way to accomplish those goals, and review and evaluate their assumptions about their learning" (Ebata, 2010, p. 3). In Sakai, Takagi, and Chu's (2010) study, students wanted to most be involved in the following during English class:

1. To decide your goal of study in one semester.
2. To decide the textbook and materials you use in class.
3. To check how much progress you make.
4. To decide the type of classroom activities, such as individual, pair and group work.
5. To decide the amount, type and frequency of homework.
6. To decide topics and activities you learn in class.
7. To evaluate the course. (p. 17)

Another study found schools that are held accountable by exit exams have positive relationships among school autonomy, academic achievement, and accountability (Wöbmann et al., 2007).

Cuypers (2009) questioned if a child could be truly autonomous, because a child does not have the capacity to rationally reflect upon choices. Autonomy support can be broken down into two categories: procedural and cognitive (Furtak, 2012). Procedural autonomy allows students to choose their own learning materials and cognitive autonomy is present when teachers give feedback to students so learners can reflect on their decisions (Furtak, 2012).

Balcikanli's (2010) study offered indicators of learner-originated learning which reflect

increased student awareness and promote self-reflection:

1. Student-developed learning objectives.
2. Student freedom to choose learning materials.
3. Pace of course determined by the student.
4. Student control over classroom activities.
5. Student-arranged room and student generated seating assignments.
6. Student-developed rules and disciplinary procedures.

One might think that promoting this much student autonomy would increase student learning levels, but the thought has yet to be tested in experimental studies (Furtak, 2012).

Autonomy-Supportive Teaching

Educators have difficult jobs. They are charged with presenting information in such a way students are motivated to learn (Kohn, 1993). In today's world of education and bureaucratic guidelines teachers must follow, it is often easier to tell students to read pages from a textbook and complete a worksheet, but when there is no new stimulation, learning is stagnant (Goodlad, 1984). One way to introduce new thoughts is to offer students autonomy in the classroom.

Ryan and Deci (2000) believed students possess a predetermined level of autonomous functioning and the classroom environment can support and grow these tendencies or it can negatively impact students. Teachers report it is difficult to give students the autonomy they so desperately need because of the outside pressures placed on schools and teachers to succeed. Schools believe the way to control for academic success is to control all aspects of teaching and learning so that uniformity is achieved when instruction is delivered, thus reducing teacher autonomy (Niemiec & Ryan, 2009). Autonomous teaching and leading is a change from

traditional thinking and to achieve it, trust is a must (Gross, 2011).

Motivating and inspiring students to learn is one the more difficult roles teachers have. Kohn (1993) suggested students are inspired when teachers "allow for active learning, give reasons for assignments, elicit curiosity, set an example, and welcome mistakes" (pp. 211-212). Reeve et al. (2004) found student engagement increases in direct relation to the motivation style of the teacher. They also noted, "Engagement is important both because it predicts important outcomes (e.g., learning, development) and because it reveals underlying motivation" (Reeve et al., 2004, p. 148).

Deci and Ryan's self-determination theory describes the different ways people respond to actions and why they do so (Ryan & Deci, 2000). This theory applied in the classroom contends when students' need for autonomy is met in the classroom, students are more likely to be engaged in their learning (Niemiec & Ryan, 2009). Reeve et al. (2004) conducted a study in which teachers were offered training on measures of autonomy-supportive teaching, but the study did not identify which components, if any, of autonomy-supportive teaching were more effective with regards to increasing student engagement and student learning.

"Self-determination theory based research has consistently demonstrated that more autonomous forms of motivation are associated with a host of positive outcomes from greater academic performance, creativity, and persistence, to enhanced learner wellness" (Niemiec & Ryan, 2009, p. 225). Students in autonomy-supportive classrooms experience a greater self-concept, are more creative, prefer challenge, perform better academically and are more intrinsically motivated (Reeve, 2006). Reeve (2006) also noted autonomy-supportive teachers will

1. Facilitate learning.

2. Learn about students' interests and needs.
3. Provide classroom opportunities for interests and needs to be met.
4. Avoid incentives, directives, and deadlines.
5. Use non-controlling language.
6. Explain the "why" behind a request or how students will benefit from the task.
7. Accept negative responses from students and use them to adjust teaching.

Previous researchers found autonomy-supportive teaching has benefits for students. They are more likely to feel as if they perform academically, prefer challenge, increase academic levels, and cope with situations positively (Bozack, Vega, McCaslin, & Good, 2008). Researchers have identified a set of characteristics common to teachers that engage in autonomy-supportive teaching. The following behaviors are demonstrated by teachers who follow this style of teaching:

1. Listen carefully,
2. Create opportunities for students to work in their own way,
3. Provide opportunities for students to talk,
4. Arrange learning materials and seating patterns so students can manipulate objects and conversations rather than passively watch and listen,
5. Encourage effort and persistence,
6. Praise signs of improvement and mastery,
7. Offer progress-enabling hints when students seem stuck,
8. Are responsive to students' questions and comments, and
9. Communicate a clear acknowledgement of students' perspectives. (Reeve, 2006, p. 231)

Many may think autonomous support means students are free to act without limits. A study conducted by Koestner, Ryan, Bernieri, and Holt (1984) indicated that limits can, in fact, be set without limiting intrinsic motivation, thus supporting autonomous learning. Reeve and Jang (2006) conducted a study to determine which of the autonomy-supportive behaviors affected students' perceived level of autonomy. They discovered that all of the aforementioned autonomous behaviors correlated significantly with students' levels of perceived autonomy. A multiple regression study was then conducted to determine which of the behaviors had the greatest effect on perceived autonomy levels. Offering encouragement, allowing students to work in their own way and allowing them time to talk were found to be the behaviors that had the greatest effect on students' perceived levels of autonomy.

In contrast to autonomy-supportive teaching, teachers can exhibit controlling behaviors. Chall (2000) described teacher-centered or controlling behaviors to be formal with a prescribed curriculum specific to each grade and subject area where testing is widely practiced. Reeve (2006) indicated controlling teachers will operate on a set schedule with little regard for student interests and needs, use extrinsic rewards, pressure students to conform to their agenda, use directives and criticisms, and argue with students who offer contradictory responses.

Students may initially conform or comply quicker when working with a controlling teacher to avoid consequences, but the overall discouraging effects in a controlling environment are more negative than those in an autonomy-supportive classroom (Ryan & Weinstein, 2009). Koestner et al. (1984) found controlling behaviors can have significant negative effects on the quality of student work and student creativity.

Chall (2000) conducted a review of previous research on autonomy-supportive teaching versus teacher-centered learning and found teacher-centered learning to be more effective in

impacting academic achievement when compared to student-centered learning in elementary schools. It is noted this approach may be more widely preferred among younger grades because there is so much content to deliver. Teacher-centered learning was also found to be more effective in schools where students were from economically disadvantaged homes. Chall believed this to be the case because students from low socioeconomic status homes typically receive more directives at home. Ryan and Weinstein (2009) noted that high-stakes testing reinforces the pressure felt by teachers to "teach to the test." This approach further limits autonomy-supportive teaching as teachers feel the need to follow a prescriptive curriculum and deviation from the established guidelines is considered taboo.

If controlling behaviors are more widely known to produce negative results, why do educators still deliver instruction in this way? Educators have cited not being able to manage behavior any other way. They have also noted it would take too much planning to offer more student action in their education. Others have cited increased accountability measures force them to control the delivery of instruction to ensure student learning (Kohn, 1993).

Cannon-Brooks, owner of Atlassian, stated, "If you don't pay people enough, you can lose people. But beyond that, money is not a motivator" (as cited in Pink, 2009, p. 93). So what is it that motivates people to stay and complete their work? Ryan and Powelson (1991) found when students felt interpersonally connected and supported, they were highly motivated to work. That task is one that falls to teachers. "If educators are able to create the conditions under which children can become engaged with academic want, the acquisition of intellectual skills will probably follow" (Kohn, 1993, p. 146). Fortier, Vallerand, and Guay (1995) concurred, "The more students were motivated toward education in autonomous fashion, the higher was their school performance" (p. 267).

Meeting autonomy needs of students is one of the most basic things a teacher can do to make a student feel valued. The basic needs of competence, autonomy, and relatedness are met through intrinsic motivation (Ryan & Deci, 2000). The primary reason people persist with a task is to connect with a group of people. In classrooms teachers can make students feel related by ensuring each student feels respected and cared for by the adults in the room (Ryan & Deci, 2000). Jang et al. (2009) conducted a study where students identified positive learning experiences as ones where they felt competent, autonomous, and related to one and another. Niemiec and Ryan (2009) noted, "The way in which teachers introduce learning tasks impacts students satisfaction of the basic psychological needs for autonomy and competence, thereby either allowing intrinsic motivation to flourish and deeper learning to occur or thwarting these processes" (p. 136).

Many studies have been done on academic achievement and motivation, though most is correlational. However, there are data that suggest there is an effect (Kohn, 1993). Motivating children to learn is a large problem in today's world of education. Students used to be motivated intrinsically. Now teachers must find the hook that will get students to learn (Ryan & Powelson, 1991). The following indicators of autonomy were explored in this study: assessment, effective instructional strategies, expectations for learning, learning environment, and relationships.

Assessment

Assessment was the first indicator of autonomy examined in this study. For students to be active participants in their learning, transfer of the responsibility for learning from the teacher to the student should be maximized (Wiliam, 2011). Teachers noted in a study conducted by Ryan and Powelson (1991) they felt the increased pressure to perform well on standardized tests. Teachers noted that students are not necessarily motivated by the controlling atmosphere the

classroom takes on when standardized assessments are the focus; they noted the difficult balance between being autonomy-supportive and teaching for mastery. A study conducted by Flink, Boggiano, and Barrett (as cited in Ryan & Powelson, 1991) noted when students were told what to do, how to do it, and used criticism more than praise students performed lower than when an autonomy-supportive approach was used.

Informal feedback, in the way of verbal communication, is a way for teachers to offer immediate assessment of learning to students. Using non-controlling language offering specific instruction helps students comply with teacher direction and make in-flight corrections to their own learning (Reeve, 2006). Regardless of the method of assessment, it must be tied to what students have learned, not a blanket assessment that does meet each individual learner's outcomes (Reinders, 2010).

This study measured assessment to determine approximately what percentage of teachers consistently allow students to assist in the development of grading criteria. The study checked for understanding at higher levels by using pertinent, scaffold questions that push thinking and modify instruction to respond to misunderstandings without taking away from the flow of the lesson (Danielson, 2007; Marzano, Pickering, & Pollock, 2001).

Effective Instructional Strategies

Reeve (2006) notes that a classroom environment encouraging choice and challenge serves to motivate students. Effective instructional strategies which engage the student are another component impacting student achievement (Marzano et al., 2001). Students' inner motivation is reached in an autonomy-supportive classroom when teachers offer choice, provide students with challenges, and align activities with student interests (Reeve, 2006).

Reinders (2010) noted that learner-centered classrooms allow students to plan their own learning by offering several activities to accomplish the same learning goal, select and collect resources for learning, and choose the appropriate method to learn by matching the task to the outcome. Reinders also noted that autonomous teachers allow students to practice and apply their learning in a variety of methods.

Effective instruction is measured by asking principals to determine approximately what percentage of teachers use wait time effectively; incorporate differentiated instructional strategies in planning to reach every student at his or her level of understanding; and give students meaningful opportunities to practice, apply, and demonstrate what they are learning (Danielson, 2007; Marzano et al., 2001).

Expectations for Learning

In an autonomous classroom, teachers and students work together to set clear expectations for learning. The autonomy-supportive teacher continues to look for ways to excite students about their learning and continually adjust the lesson to engage students (Reeve, 2006). Allowing students to participate in the development of learning objectives has a significant effect on student achievement (Marzano et al., 2001). Reeve and Jang (2006) conducted a study and found that allowing students to work in their own way was a significant predictor of students' perceived level of autonomy. The autonomy-supportive teacher also articulates the relevancy of a task so that students can accurately apply their learning (Reeve, 2006).

This indicator of autonomy was measured by asking principals to determine approximately what percentage of teachers use high expectations to motivate students, have students who can explain what they are learning and why it is important, and explain the learning

objective so that students understand why they are learning what they are learning (Danielson, 2007) .

Learning Environment

A learning environment where students feel valued is yet another indicator of autonomy; "organizing students in cooperative learning groups has a powerful effect on learning" (Marzano et al., 2001, p. 87). Autonomy-supportive teachers arrange their classrooms so that they are conducive to student dialogue and collaboration (Reeve & Jang, 2006).

Teachers offer structure to classroom activities and learning. The structure can be autonomy-supportive or controlling. The autonomy-supportive teacher offers students choice and gives students a voice in classroom decisions. The controlling teacher makes demands and establishes rules without student input (Reeve, 2006).

This indicator of autonomy was measured by asking principals to determine approximately what percentage of teachers have desks positioned in rows (Marzano et al., 2001); have students share responsibility for operations and routines; and have students working together effectively to accomplish shared tasks (Danielson, 2007).

Relationships

A classroom that structures learning around student needs and offers students an opportunity to be a part of their learning is an autonomy-supportive classroom (Reeve, 2006). Offering effective praise and allowing students to work together have a positive effect on the academic success of individual students (Marzano et al., 2001). Reeve (2006) also noted that the autonomy-supportive teacher encourages students to communicate negative feelings about the teacher, other students, or the lesson. This communication helps avoid future, larger conflicts and the expression builds bonds among teachers and students. Students experience positive

motivation and a high level of engagement when teachers are attuned to student needs, understand student needs, offer support, and use gentle, guiding discipline (Reeve, 2006).

Learning diaries or online blogs can be a way for teachers to provide effective feedback to students or for students to offer feedback to one another (Reinders, 2010). This type of communication can be observed in an autonomy-supportive classroom. The diaries or blogs help students to realize errors and track progress while noting success (Reinders, 2010). Relationships were measured by asking principals to determine approximately what percentage of teachers give students opportunities to collaborate and support each other in the learning process, celebrate and praise academic work, and have a good rapport with students by showing genuine interest in student opinions and thoughts (Danielson, 2007).

Measurements of Success

Effective organizations have a caring climate, possess an outcome-oriented structure with clearly defined roles, and share a culture where all work toward a shared goal (Bolman & Deal as cited in Deal et al., 2004). Several researchers during the 1980s concluded effective schools do not necessarily spend more time or money but have "a clear, focused mission, a core curriculum with high expectations for all students and teachers, an organizational climate that supports school's mission and expectations, and strong leadership" (Finn et al., 2000, p. 63).

Countries around the world are faced with the increasing pressure of schools to produce students that can compete in a global world. The nation of Singapore is no different. The reform movement in Singapore is structured around greater autonomy at the school level and greater diversity with regards to educational choice (Tan, 2008). Reformers in this Asian nation believe that schools will own more of the responsibility for success and the success of each individual school will breed competition among all schools, thus creating better schools overall (Tan,

2008). Grissmer and Flanagan's (as cited in Ravitch, 2001) study found that with the greatest academic gains on the National Assessment of Educational Progress were states that had implemented statewide reforms. The reform measures included

1. Developing standards by grade level;
2. Strong data management systems;
3. Assessments linked to standards;
4. Desegregation of the teaching environment; and
5. Development of accountability measures. (Grissmer & Flanagan as cited in Ravitch, 2001)

However, Grissmer and Flanagan noted more research was needed to determine which of the above measures is most effective.

Varying opinions exist on what impacts academic achievement most. Cookson (1994) intimated it is a stretch to indicate there is a statistical relationship between the way a school is managed and student success. Chubb and Moe (as cited in Deal et al., 2004) identified three factors that accelerated student learning the high schools are "involvement of parents, autonomy for the local site to respond to its clientele without bureaucratic interference from above, and a sense of cohesion and shared focus among administrators, teachers, and staff" (p. 255).

The increased pressures placed on teachers since NCLB are creating classrooms focused less on the student and more about achievement. "High-stakes testing environments promote a climate that encourages short-term academic gains over long-term intrinsic motivation" (Jones, Jones, & Hargrove, 2003, p. 99). One Arizona school, Tempe Preparatory Academy, consistently rises to the challenge of 100% of its students passing all sections of the Arizona state assessment (Schmoker, 2007). How can this be possible?

Ryan and Weinstein (2009) believed that the pressure of high-stakes testing is motivating because performance is recognized at the school level by positive and negative consequences. Kohn (1993) disagreed, “The evidence strongly suggests that tighter standards, additional testing, tougher grading, or more incentives will do more harm than good” (p. 151). Turnaman (2011) also believed that for true school reform to occur, high stakes testing needs to be eliminated and a greater focus needs to be placed on high quality curriculum and instruction.

Just as money does not motivate those in the business world, high-stakes testing will not motivate students to succeed. Students and businesses alike are motivated by the what, how, when, and with whom they work (Pink, 2009). Schmoker (2007) contended that a simple demanding curriculum where students are required to read, write, and discuss current issues two to three hours a day is the reason the Arizona school succeeds.

A simple and demanding curriculum can meet the needs of many students, but not those of students with language or special needs. Nor is the curriculum challenging enough or individualized for gifted students (Ryan & Weinstein, 2009). Schmoker (2007) contended that when students are engaged through a high-quality curriculum including interesting texts and deeper questioning, achievement will occur. A simple and demanding curriculum is developed by explicitly defining what will be taught and monitoring the effectiveness through regular teacher meetings following assessment windows and unannounced administrative walk-throughs.

A study conducted by Jang et al. (2009) predicted autonomy-supportive teaching positively correlates to perceived student autonomy levels and student competence. They also found satisfying psychological needs is related to a positive school experience. Hardre and Reeve (as cited in Reeve et al., 2004) also found competence to be a significant predictor of academic performance. Fortier et al. (1995) found autonomy, in addition to competence, to be a

significant predictor of academic achievement.

In a study of college students, Lowe (1997) found there was a significant correlation between autonomy and grade point average. There is a positive relationship between autonomy-supportive teaching and student learning (Reeve et al., 2004). This relationship was supported in another study that found autonomy support was a strong predictor of how students believed they would perform academically (Kenny, Walsh-Blair, Blustein, Bempechat, & Seltzer, 2010). Black and Deci (2000) determined autonomy support is a significant predictor of a student's final grade in a study conducted with a college organic chemistry class. Reeve et al. (2004) noted significant gaps in research still exist in order to be able to effectively determine if autonomy-supported teaching increases engagement which, in turn, increases academic achievement.

The greatest difference between charter schools and typical public schools lies in the degree of autonomy a school leader possesses and the amount of bureaucratic freedom the school leader has. Both schools are similar in that both are rooted within communities and adapt to create solutions to the educational needs of students (Finn et al., 2004). Regardless of the type of school, understanding autonomy is integral to the school's success. "Educators need to know about the organizational dynamics autonomy creates, the people who end up working in autonomous schools, and the academic programs they choose to employ" (Gross, 2011, p. 1).

Charter schools and typical public schools operate at different levels of autonomy, and it is because of the loosened governmental guidelines that charter schools are expected to perform better even though autonomy exists to determine staffing, curriculum, and interventions (Miron & Nelson as cited in Lubienski & Weitzel, 2010). Knowing the level of autonomy at which a charter school operates can aid the school leader when working with stakeholders. "That info is critical to helping the charter school sector grow and mature effectively, as well as helping

policymakers understand how school autonomy can best be used as a tool for improving academic achievement" (Gross, 2011, p. 1).

Maintaining student engagement is critical for student success (Reglin, 1993). "The emotional climate of the classroom is an important aspect of the learning climate" (Reglin, 1993, p. 94). Some question the freedom of charters and if the increased educational options do little more than to promote movement from one school to the next for those who are financially able to provide transportation (Cookson, 1994). Granted choice schools, such as charters, tend to adopt the ideals of the community in which they are situated. Parents choose to send their children to these schools and parent support is often higher, an added benefit (Cookson, 1994). However, one has to question if the choices of parents cause the very barriers (racial segregation, culture differences, and socioeconomic status) public education underwent to have risen again (Cookson, 1994).

Measuring academic achievement of schools since the inception of NCLB is a main focus of state and local school boards. Every student and every subgroup must be proficient in reading and math by 2014 (Rothstein, 2004). Finding the best way to maximize learning is at the center of all school improvement plans. This study sought to examine how autonomy impacts the academic achievement of students in typical public schools and charter schools in the state of Indiana.

CHAPTER 3

METHODOLOGY

Purpose of the Study

The purpose of this quantitative study was to determine whether there are significant differences among the five indicators of autonomy (assessment, expectations, instruction, learning environment, and relationships) based on school type (elementary or junior high) and if there are differences among the indicators between typical public schools and charter schools. This study also examined if the five indicators of autonomy are able to predict academic achievement as measured by ISTEP+ scores for math and language arts. Being able to ascertain this information will serve to inform school leaders on effective ways to impact academic achievement.

The first indicator of autonomy that was examined in this study was assessment. In order for students to take an active part in their learning, students should be given the opportunity to set goals and track progress at regular assessment window by charting performance (Marzano & Pickering, 2011). A survey was developed (Appendix A) to measure assessment by asking principals to determine approximately what percentage of teachers consistently allow students to assist in the development of grading criteria; to check for understanding at higher levels by using pertinent, scaffold questions that push thinking; and to ask if teachers were able to modify instruction to respond to misunderstandings without taking away from the flow of the lesson.

In an autonomous classrooms, teachers and students work together to set clear expectations. Doing so is important to creating an environment of autonomy (Balcikanli, 2010). This indicator of autonomy was measured on the survey by asking principals to determine approximately what percentage of teachers used high expectations to motivate students, asked students who could explain what they were learning and why it was important, and explained the learning objective so that students understood why they were learning what they were learning.

Effective instruction that engages the student is another indicator of autonomous teaching (Reeve et al., 2004). Effective instruction was measured by asking principals to determine approximately what percentage of teachers used wait time effectively; incorporated differentiated instructional strategies in planning to reach every student at his or her level of understanding; and gave students meaningful opportunities to practice, apply, and demonstrate what they were learning.

When students are given more active roles in their learning, increases in learning are found (Furtak, 2012). A learning environment where students feel valued is another indicator of autonomy. This indicator of autonomy was measured by asking principals to determine approximately what percentage of teachers had desks positioned in row, had students share responsibility for operations and routines, and had students working together effectively to accomplish shared tasks.

Developing a strong, positive relationship with students is another indicator of autonomy (Reeve, 2006). Relationships were measured by asking principals to determine approximately what percentage of teachers gave students opportunities to collaborate and support each other in the learning process, celebrated/praised academic work, and had a good rapport with students by showing genuine interest in student opinions and thoughts.

Research Questions

The research questions for this study were as follows:

1. Are there significant differences in the five indicators of autonomy based on school type?
2. Are there significant differences in the five indicators of autonomy between Title I and non-Title I schools?
3. Do the five areas of autonomy serve as predictors of student achievement as measured by ISTEP+ Language Arts?
4. Do the five areas of autonomy serve as predictors of student achievement as measured by ISTEP+ Math?

Null Hypotheses

The following null hypotheses were generated through the research questions:

$H_0$1. There are no significant differences in the five indicators of autonomy based on school type.

$H_0$2. There are no significant differences in the five indicators of autonomy between Title I and non-Title I schools.

$H_0$3. The five areas of autonomy do not serve as predictors of academic achievement as measured by ISTEP+ Language Arts.

$H_0$4. The five areas of autonomy do not serve as predictors of academic achievement as measured by ISTEP+ Math.

Description of the Sample

The study consisted of all typical public schools and all charter schools in the state of Indiana housing any of the following grades: 4, 5, 6, 7, or 8. Any school with growth model

scores available housing any of the aforementioned grades were used in this study. Principals of these schools were surveyed on the indicators of autonomy. Indiana ISTEP+ growth model data were used to determine academic achievement of students.

Typical public school and charter school principals of all genders, ages, and ethnic groups were considered in this study. The only deference given to school composition was the grades housed in the building. Principals working in the district where I am employed were excluded from the study in order to minimize bias.

Data Sources

This study used a survey approach to collect data on the five indicators of autonomy. Indiana school principals were asked to complete the survey (Appendix A). Principals were asked to complete the brief survey and select a percentage of classrooms where each indicator was visible. Indiana ISTEP+ growth model data were collected from the Indiana Department of Education and used to determine the academic performance of the school.

The survey was sent to a selection of colleagues and Ph.D. cohort members consisting of practitioners as a way to validate the survey. Recommendations for change from colleagues were taken under advisement. Additionally, the survey results were tested using Cronbach's alpha. This statistical test indicated a measure of reliability. A Cronbach's alpha of .7 indicated an acceptable level of internal consistency.

Data Collection Procedures

The Indiana Department of Education and the Indiana Public Charter Schools websites indicated a total of 1,481 typical public schools and 64 charter schools housing at least one section of Grades 4, 5, 6, 7, or 8 for the 2012-2013 school year.

All typical public schools and all charter schools were included in the sample. Each school principal was asked to complete a survey rating the approximate level of autonomy the school displays in the areas of assessment, expectations, instruction, learning environment, and relationships. The survey scores from each indicator area were combined to attain a comprehensive autonomy score.

The Indiana Department of Education and the Indiana Association of Charter Schools maintain databases of current school administrators and contact information. The databases were the primary method used to locate participants. All school principals contained within the databases received a letter of explanation and an invitation to participate in the study via email. Follow-up contact was made through a variety of communication methods.

As an extension of recruitment efforts, an advertisement for participants using the Indiana Association of School Principals and Indiana Association of Charter Schools was sought. This method further served to notify and cultivate participants.

Each school principal was asked to complete a survey rating the approximate level of autonomy the school displays in the areas of assessment, expectations, instruction, learning environment, and relationships. The survey was designed so that three questions were asked for each indicator of autonomy. The three survey scores from each autonomy indicator area were averaged to attain an overall composite score for each indicator of autonomy, resulting in five overall composite scores.

A two-year average of growth model data was used for typical public and charter schools. If a typical public school or charter school had been in existence for less than two years, then the data available, based on one year of performance, were used.

No individual schools or districts were identified in this study. School names and district names were collected for purposes of matching schools to the appropriate growth model data. Any school not completing the entire survey had its data deleted from the study.

Method of Analysis

The research questions were tested using multiple independent samples *t*-tests and multiple regressions. All appropriate assumptions were tested prior to testing the research questions. Independence, normality, and homogeneity of variance were tested prior to completing the independent samples *t*-tests. Prior to completing the multiple regressions, independence, normality, homogeneity of variance, multicollinearity, and linearity were tested.

The first null hypothesis examined whether there were significant differences in the five indicators of autonomy based on school type. Multiple independent samples *t*-tests were conducted to determine if there are significant differences among the indicators of autonomy. The Bonferroni correction was used to restrict the alpha in order to reduce the chances of committing a Type-I error. A Type-I error concluded the means were different in the population when they were not. The alpha was restricted from .05 to .01 by dividing the alpha by the number of *t*-tests that were conducted.

The second null hypothesis examined whether there were differences between Title I and non-Title I schools in each of the five indicators of autonomy. Multiple independent samples *t*-tests were used to ascertain if there were significant differences among the indicators of autonomy between typical public schools and charter schools. The Bonferroni correction was again used to restrict the alpha in order to reduce the likelihood of a Type-I error. Committing a Type-I error concluded the means were different in the population, when in fact, they were not.

The alpha was divided by the number of autonomy indicators resulting in a restricted alpha of .01.

The third null hypothesis examined if the five indicators of autonomy could predict achievement on ISTEP+ language arts. In order to determine which predictor variables (indicators of autonomy) explained a significant variance in the criterion variable (academic achievement) as measured by ISTEP+ language arts, a multiple regression test was conducted. Multiple regression allowed for the discovery of the best linear combination of predictor variables that best predicted the criterion variable.

A stepwise regression was conducted with the indicator of autonomy that had the strongest linear relationship with academic success to determine whether the relationship was significant. If the relationship was significant, the predictor variable with the next strongest relationship to academic success was tested. This process occurred until introducing an indicator of autonomy did not explain significant variance in the overall prediction model.

The fourth null hypothesis determined if the five autonomy indicators predict student achievement on ISTEP+ math. A multiple regression test determined if the five autonomy indicators could predict academic achievement as measured by ISTEP+ math. A multiple regression test allowed for the examination of the relationship between one criterion variable (academic achievement) and more than one predictor variable (indicators of autonomy). Stepwise regression was again conducted to examine which indicator of autonomy had the strongest effect on the overall prediction model.

Summary

Ensuring that all students are proficient by school year 2013-14 is a matter of dire need for schools to remain in business and be highly effective. Determining the best way to help

students be successful is at the forefront of every educator's mind each day. This study examined if the five indicators of autonomy are predictors of academic achievement and if so, which one(s) are more significant. This study provides teachers and administrators with an effective way to reach students to achieve academic success.

CHAPTER 4

ANALYSIS OF DATA

Findings of the Study

The purpose of this study was to determine whether there were significant differences among the five indicators of autonomy for students and teachers (assessment, expectations, instruction, learning environment, and relationships) based on school type (elementary or junior high) and if there were differences among the indicators between Title I schools and non-Title I schools. This study also examined if the five indicators of autonomy, as mentioned, were able to predict academic achievement as measured by ISTEP+ scores for language arts and math.

This study used survey methodology to gather data from school principals regarding what percentage of classroom teachers housed in their buildings displayed the five factors of autonomy. Growth model data from the Indiana Department of Education was utilized to compare academic performance of schools based on school type and Title I status to the five indicators of autonomy.

The first three survey questions (Appendix A) related to assessment. Each successive group of three questions addressed each indicator of autonomy in the following order: expectations, instruction, learning environment, and relationships. Principals were asked to rate the percentage of teachers in their buildings who displayed each of the listed characteristics. Possible choices for percentages ranged from 0 to 100% in increments of 10. The average of

each of the three questions for each indicator was calculated to achieve a composite score for each indicator of autonomy.

Sampling protocol, as described in Chapter 3, was followed. The survey was sent via email to 1,140 Indiana schools housing at least one grade in Grades 4 to 8. Nine schools were excluded as they belonged to the district of the researcher. Fifty-three surveys were undeliverable, allowing for 1,078 possible valid responses. Ninety-nine surveys were returned, fully completed, yielding a 9% rate of return.

Research Questions

1. Are there significant differences in the five indicators of autonomy based on school type?
2. Are there significant differences in the five indicators of autonomy between Title I and non-Title I schools?
3. Do the five areas of autonomy serve as predictors of student achievement as measured by ISTEP+ Language Arts?
4. Do the five areas of autonomy serve as predictors of student achievement as measured by ISTEP+ Math?

Presentation of Data

Descriptive Statistics

Of the 99 surveys returned, 77 (78%) were from principals of elementary schools and 22 (22%) were from middle school/junior high principals. Sixty (61%) of respondents were principals of Title I schools and 39 (39%) were principals of non-Title I schools.

Of the elementary principals surveyed, 54 were leaders of Title I schools (70%) and 30% (*n* = 23) were principals of non-Title I schools. Six (27%) of the middle school leaders surveyed were principals in a Title I school and 16 (73%) were principals in non-Title I buildings.

The ages of principals in the sample ranged from 30–67 years of age (*M* = 48.45, *SD* = 9.42). The mean years of service in the education field was 24.38 (*SD* = 9.49) and ranged from 7–42 years of service. School leaders in their current positions ranged from 1–32 years (*M* = 8.07, *SD* = 7.23).

English/language arts scores, as reported by the growth model for the state of Indiana, ranged from 26–71 (*M* = 48.28, *SD* 10.13). The minimum score of 26 indicated the median score for students within that school at the 26th percentile when the students were compared to their academic peer group. Approximately half of the schools in the sample achieved a median growth score above the 50th percentile in English/language arts.

Math scores ranged from 18–78 (*M* = 48.39, *SD* = 12.71). A minimum score of 18 indicated the median score for students within that school at the 18th percentile when the students were compare to their academic peer group. A maximum score of 78 represented the median score for students within that school at the 78th percentile when the students were compared to their academic peer group.

Responses from the survey ranged from 1–11. A score of one corresponded with 0% and an 11 represented 100%. The principals rated three questions higher than the other questions. “Approximately what percentage of teachers has a good rapport with students by showing genuine interest in student opinions and thoughts?” (*M* = 9.51, *SD* = 1.36). “Approximately what percentage of teachers creates a welcoming classroom by praising academic work?” (*M* =

9.46, *SD* = 1.78), and "Approximately what percentage of classrooms gives students meaningful opportunities to practice, apply, and demonstrate what they are learning?" (*M*= 9.01, *SD* = 1.93).

Three questions were rated lower than other survey questions. "Approximately what percentage of teachers allows students to assist in the development of grading criteria?" (*M* = 3.23, *SD* = 2.36); "Approximately what percentage of teachers check for understanding at higher levels by using pertinent, scaffold questions that push thinking, even if doing so is not part of the prescribed curriculum?" (*M* = 7.27, *SD* = 2.07); and "Approximately what percentage of teachers ensures that students can explain what they are learning and why it is important?" (*M* = 7.42, *SD* = 1.97).

Questions on the survey were grouped together so that questions 1 through 3 addressed the autonomy indicator of assessment. Questions 4 through 6 dealt with expectations. Instruction was addressed when respondents answered questions 7 through 9. The indicator of learning environment was addressed in questions 10 through 12. Questions 13 through 15 sought responses for the autonomy indicator of relationships.

Scores from each group of three questions were averaged to obtain an overall composite score for each autonomy indicator. Scores for assessment ranged from 1.67–9.33 (*M* = 6.24, *SD* = 1.62). Scores for expectations ranged from 2–11 (*M* = 7.87, *SD* = 1.70). Instruction ranged from 2.67–11 (*M* = 8.47, *SD* = 1 .63). The overall composite score for learning environment ranged from 2.67–9.67 (*M* = 7.11, *SD* = 1.30). The highest composite score came from relationships which ranged from 4–11 (*M* = 9.23, *SD* = 1.44). Table 1 contains the demographics for elementary principals who participated.

A total of 77 elementary school principals participated in the survey. As presented in Table 1, the mean age of elementary principals was similar to the mean age of the entire sample

of 48.45. The elementary principals surveyed have been working slightly longer in the education field (M = 24.58, SD = 9.19) compared to the entire sample mean of 24.38 years. Elementary principals have been in their current positions slightly longer than the whole sample mean of 8.07 years.

Elementary schools had mean growth scores in English/language arts slightly higher than the entire sample mean of 48.28. The mean growth score for elementary schools in mathematics was higher than the entire sample mean of 48.39 as shown in Table 1.

Table 1

Elementary School Growth Scores

Subject	Minimum	Maximum	Mean	*SD*
English/language arts score	29.00	71.00	49.32	9.53
Math score	20.00	78.00	50.21	11.78

As presented in Table 2, elementary school principals had the greatest difference from the whole sample in the areas of modifying instruction, differentiated instruction, opportunities to practice and apply, and shared responsibility for routines. All of these areas were higher than the whole sample mean. Elementary schools reported having fewer classrooms with desks in rows than the whole sample mean of 3.97.

Table 2

Elementary Principal Responses

Statement	Mean	*SD*
Students assist in the development of grading criteria	3.21	2.43
Check for understanding by using pertinent, scaffold questions that push thinking	7.40	1.99
Modifies instruction to respond to misunderstandings	8.56	1.90
Uses high expectations to motivate students to do it again if not great	8.27	1.86
Ensures that students can explain what they are learning and why it is important	7.61	1.85
Explains the learning objective so that students understand what they are learning and why	8.25	1.73
Builds respect by using wait time effectively	8.35	1.74
Incorporates differentiated instructional strategies in planning	8.48	1.83
Gives students meaningful opportunities to practice, apply, and demonstrate what they are learning	9.31	1.65
Desks in rows	3.38	2.35
Share responsibility for operations and routines	9.21	1.90
Students working together effectively to accomplish shared tasks	8.91	1.73
Student opportunities to collaborate and support each other in the learning process	8.96	1.85
Creates a welcoming classroom by praising academic work	9.65	1.64
Good rapport with students by showing genuine interest in student opinions and thoughts	9.71	1.12

Elementary school principals rated their classrooms higher than the sample for all indicators of autonomy. Learning environment was the closest to the sample mean with only a

difference of .06 above the sample. Instruction varied the greatest from the sample mean with a difference of .25 above the sample as reflected in Table 3.

Table 3

Composite Elementary Autonomy Scores

Area	Minimum	Maximum	Mean	*SD*
Assessment	3.33	9.33	6.39	1.48
Expectations	3.67	11.00	8.04	1.49
Instruction	4.67	11.00	8.71	1.42
Learning environment	4.00	9.67	7.16	1.14
Relationships	6.00	11.00	9.44	1.19

Twenty-two of the respondents were middle school/junior high school principals. The mean age of middle school/junior high principals was slightly lower than the mean age of the entire sample of 48.45. The principals surveyed have been working in the education field an average of 23.68, which is a year and one-half less than the entire sample. Middle school/junior high principals have been in their current positions for a shorter period of time when compared to the whole sample mean of 8.07 years. These data are reflected in Table 4.

Table 4

Demographics for Middle School/Junior High Principals

Demographics	Minimum	Maximum	Mean	*SD*
Age	31.00	63.00	48.00	10.61
Years in education	9.00	42.00	23.68	10.68
Years in current position	1.00	28.00	7.23	5.77

Middle school/junior high schools had mean growth scores in English/language arts lower than the entire sample mean of 48.28. The mean growth score for middle school/junior high schools in mathematics was lower than the entire sample mean of 48.39 as shown in Table 5.

Table 5

Middle School/Junior High Growth Scores

Subject	Minimum	Maximum	Mean	*SD*
English/language arts score	26.00	70.00	44.66	11.53
Math score	18.00	60.00	42.02	14.02

Middle school/junior high principals had more classrooms with desks in rows than the whole sample mean of 3.97 as shown in Table 6. The only other question where middle school/junior high principals rated their schools higher than the sample mean was in the area of having students develop grading criteria. Middle school/junior high leaders rated this indicator .09 above the sample. Middle school/junior high building leaders rated their schools with the

greatest difference below the sample mean in the areas of using high expectations, incorporating differentiated instructional strategies, giving meaningful opportunities to practice, apply, and demonstrate learning, and allowing students to share responsibility for learning.

Table 6

Middle School/Junior High Principals Responses

Statement	Mean	*SD*
Students assist in the development of grading criteria	3.32	2.17
Check for understanding by using pertinent, scaffold questions that push thinking	6.82	2.32
Modifies instruction to respond to misunderstandings	7.05	2.42
Uses high expectations to motivate students to do it again if not great	7.14	2.61
Ensures that students can explain what they are learning and why it is important	6.77	2.27
Explains the learning objective so that students understand what they are learning and why	7.82	2.34
Builds respect by using wait time effectively	7.68	1.94
Incorporates differentiated instructional strategies in planning	7.18	2.28
Gives students meaningful opportunities to practice, apply, and demonstrate what they are learning	7.95	2.46
Desks in rows	6.05	3.02
Share responsibility for operations and routines	6.68	2.71
Students working together effectively to accomplish shared tasks	8.00	2.53
Student opportunities to collaborate and support each other in the learning process	7.91	2.36
Creates a welcoming classroom by praising academic work	8.82	2.11
Good rapport with students by showing genuine interest in student opinions and thoughts	8.77	1.82

Middle school/junior high principals rated their classrooms lower than the sample for all indicators of autonomy. Instruction varied the greatest from the sample mean with a difference of .86. Learning environment in the middle schools was the closest to the sample varying only .20. These results are presented in Table 7.

Table 7

Composite Middle School/Junior High Autonomy Scores

Area	Minimum	Maximum	Mean	*SD*
Assessment	1.67	9.33	5.73	2.00
Expectations	2.00	10.67	7.24	2.24
Instruction	2.67	10.67	7.61	2.06
Learning environment	2.67	9.33	6.91	1.77
Relationships	4.00	10.67	8.50	1.97

Sixty of the respondents were principals in a Title I building. The mean age of Title I principals was slightly less than the mean age of the entire sample of 48.45. The Title I principals surveyed had been working in the education field for slightly less time than the entire sample average of 24.38 years. Title I principals had been in their current positions longer than the sample average of 8.07 years. More detailed findings appear in Table 8.

Table 8

Demographics for Title I Principals

Demographics	Minimum	Maximum	Mean	*SD*
Age	30.00	67.00	47.80	9.29
Years in education	7.00	42.00	24.25	9.30
Years in current position	1.00	32.00	8.27	7.44

The Title I school mean English/language arts score was slightly higher than the entire sample mean of 48.28. The Title I median mathematics score is slightly higher than the whole sample mean of 48.39. Findings in more detail appear in Table 9.

Table 9

Title I School Growth Scores

Subject	Minimum	Maximum	Mean	*SD*
English/language arts score	29.00	71.00	48.64	10.15
Math score	25.00	78.00	49.96	11.90

Title I schools demonstrated the highest gains in autonomy indicators when compared to the whole sample in the areas of using wait time to build respect, giving students meaningful opportunities to demonstrate learning, sharing classroom operations with students, and praising academic work as presented in Table 10. Title I schools had fewer classrooms with desks in rows than the sample mean of 3.97. Principals of Title I schools also rated their schools lower than the sample mean in the areas of checking for understanding by using pertinent, scaffolding

questions that push thinking and using high expectations to motivate students to do it again, if not great.

Table 10

Title I Principal Responses

Statement	Mean	*SD*
Students assist in the development of grading criteria	3.27	2.40
Check for understanding by using pertinent, scaffold questions that push thinking	7.25	1.93
Modifies instruction to respond to misunderstandings	8.45	1.81
Uses high expectations to motivate students to do it again if not great	8.28	1.78
Ensures that students can explain what they are learning and why it is important	7.55	1.93
Explains the learning objective so that students understand what they are learning and why	8.18	1.93
Builds respect by using wait time effectively	8.52	1.57
Incorporates differentiated instructional strategies in planning	8.27	1.89
Gives students meaningful opportunities to practice, apply, and demonstrate what they are learning	9.25	1.63
Desks in rows	3.52	2.32
Share responsibility for operations and routines	9.07	2.03
Students working together effectively to accomplish shared tasks	8.80	1.82
Student opportunities to collaborate and support each other in the learning process	8.82	1.88
Creates a welcoming classroom by praising academic work	9.73	1.27
Good rapport with students by showing genuine interest in student opinions and thoughts	9.63	1.06

Table 11 shows that Title I school principals rated their classrooms higher than the sample for all indicators of autonomy. Instruction varied the greatest from the sample mean with a difference of .21. Learning environment varied the least. Learning environment was closest to the sample mean with a difference of .02 above the sample.

Table 11

Composite Title I Autonomy Scores

Area	Minimum	Maximum	Mean	*SD*
Assessment	3.33	9.33	6.32	1.41
Expectations	3.67	10.67	8.00	1.58
Instruction	4.67	11.00	8.68	1.45
Learning environment	4.00	9.67	7.13	1.11
Relationships	5.67	11.00	9.39	1.21

Thirty-nine of the respondents were principals of non-Title I schools. The age of non-Title I principals was slightly higher than the whole sample mean of 48.45. The non-Title I principals surveyed had been working in the education field slightly longer than the entire sample of 24.38 years. Non-Title I principals had been in their current positions slightly less time than the whole sample mean of 8.07 years. Additional details for non-Title I principals appear in Table 12.

Table 12

Demographics for Non-Title I Principals

Demographics	Minimum	Maximum	Mean	*SD*
Age	31.00	63.00	49.46	9.64
Years in education	9.00	42.00	24.59	9.90
Years in current position	1.00	28.00	7.77	6.99

Non-Title I schools, when compared to the overall sample mean, had median growth scores in English/language arts less than the entire sample mean of 48.28. The median growth score for non-Title I schools in Mathematics was also less than the entire sample mean of 48.39 as shown in Table 13.

Table 13

Non-Title I School Growth Scores

Score	Minimum	Maximum	Mean	*SD*
English/language arts score	26.00	70.00	47.73	10.21
Math score	18.00	75.00	45.99	13.67

Non-Title I schools demonstrated the greatest increases in the areas of: using high expectations, effectively using wait time, arranging desks in rows, sharing responsibilities for classroom operations, and praising academic work as shown in Table 14. Non-Title I schools scored lower than the sample in the areas of checking for understanding and having a good rapport with students by showing a genuine interest in student thoughts and opinions. The

greatest difference between non-Title I schools and the sample mean occurred in the area of arranging desks in rows with a decrease from the sample of .70.

Table 14

Non-Title I Principal Responses

Statement	Mean	*SD*
Students assist in the development of grading criteria	3.18	2.34
Check for understanding by using pertinent, scaffold questions that push thinking	7.31	2.30
Modifies instruction to respond to misunderstandings	7.87	2.49
Uses high expectations to motivate students to do it again if not great	7.62	2.47
Ensures that students can explain what they are learning and why it is important	7.23	2.05
Explains the learning objective so that students understand what they are learning and why	8.10	1.83
Builds respect by using wait time effectively	7.72	2.03
Incorporates differentiated instructional strategies in planning	8.08	2.18
Gives students meaningful opportunities to practice, apply, and demonstrate what they are learning	8.64	2.29
Desks in rows	4.67	3.17
Share responsibility for operations and routines	8.00	2.66
Students working together effectively to accomplish shared tasks	8.56	2.16
Student opportunities to collaborate and support each other in the learning process	8.59	2.22
Creates a welcoming classroom by praising academic work	9.05	2.32
Good rapport with students by showing genuine interest in student opinions and thoughts	9.31	1.72

Non-Title I school principals rated their classrooms higher than the sample in the following indicators of autonomy: assessment and learning environment (Table 15). The sample mean was higher than non-Title I principals in the areas of expectations, instruction, and relationships. The greatest difference between non-Title I principals and the sample mean occurred in the area of instruction with a difference of .32.

Table 15

Composite Non-Title I Autonomy Scores

Area	Minimum	Maximum	Mean	*SD*
Assessment	1.67	9.33	6.12	1.92
Expectations	2.00	11.00	7.65	1.88
Instruction	2.67	11.00	8.15	1.87
Learning environment	2.67	9.33	7.08	1.55
Relationships	4.00	11.00	8.98	1.73

Inferential Statistics

The first null hypothesis examined if there were significant differences among the five indicators of autonomy based on school type. Multiple independent samples *t*-tests were conducted and the Bonferroni correction was used to restrict the alpha in order to reduce the chances of committing a Type-I error. The alpha was restricted from .05 to .01.

The assumptions for independent samples *t*-tests were examined to determine the validity of the inferential results. The assumption of normality was tested using the Shapiro-Wilk test. The assumption was met because all tests were non-significant with $p > .05$. The assumption of homogeneity of variance was tested using Levene's test of equality of variance. This assumption

was violated for three of the independent samples *t*-tests. It was not met in the areas of expectations, learning environment, and relationships; these indicators had $p < .05$. The assumption of homogeneity of variance was met for assessment and instruction with $p > .05$. For the three tests where the assumption of homogeneity of variance was violated, the independent samples *t*-test reduced the degrees of freedom to correct for this violation. The assumption of independence was met for all indicators of autonomy as the dependent variable scores were not repeated in both groups.

Based on school type, elementary or middle school/junior high, there was only one indicator of autonomy that was significantly different. Elementary schools scored significantly higher in the area of instruction ($M = 8.71$, $SD = 1.42$) than middle school/junior high schools ($M = 7.61$, $SD = 2.06$), $t(97) = 2.90$, $p = .005$, two-tailed.

The mean score for the autonomy indicator of assessment in elementary schools ($M = 6.39$, $SD = 1.48$) was not significantly different than middle school/junior high schools ($M = 5.73$, $SD = 2.00$), $t(97) = 1.71$, $p = .091$, two-tailed. The mean score in elementary schools ($M= 8.04$, SD 1.49) were not significantly different than middle school/junior high schools ($M = 7.24$, $SD = 2.24$) in the area of expectations, $t(97) = 1.58$, $p = .127$, two-tailed.

The autonomy indicator of learning environment was not significantly different between elementary school leaders ($M = 7.16$, $SD = 1.14$) and middle school/junior high principals ($M = 6.91$, $SD = 1.77$), $t(97) = .641$, $p = .527$, two-tailed. There was no significant difference between elementary school principals' rating in the area of relationships with a mean score of 9.44 ($SD = 1.19$) and middle school/junior high principals relationships rating ($M = 8.50$, $SD = 1.97$), $t(97) = 2.13$, $p = .043$, two-tailed. The four tests above do not represent a significant difference in the area of relationships based on school type.

The second null hypothesis examined if there were significant differences among the five indicators of autonomy based on Title I status. Multiple independent samples *t*-tests were conducted and the Bonferroni correction was utilized again to limit the possibility of making a Type I error.

The assumptions for independents samples *t*-tests were conducted to determine the validity of the inferential results. The assumption of normality was tested using the Shapiro-Wilk test. The assumption was met because all tests were non-significant with $p > .05$. The assumption of homogeneity of variance was tested utilizing a Levene's test. This assumption was violated on two of the independent samples *t*-tests. It was not met in the areas of assessment and learning environment with $p < .05$. For the two tests where the assumption of homogeneity of variance was violated, the independent samples *t*-test reduced the degrees of freedom to correct for this violation. The assumption of homogeneity of variance was met for expectations, instruction, and relationships with non-significant Levene's tests. The assumption of independence was met for all indicators of autonomy since the dependent variable scores were not repeated in both groups.

Based on Title I status, there were mean differences among the indicators of autonomy. However, significant differences did not occur between Title I and non-Title I schools. The autonomy indicator of assessment was not a significant difference between Title I school principals ($M = 9.40$, $SD = 1.21$) and non-Title I school principals ($M = 8.98$, $SD = 1.73$), $t(97) = .61$, $p = .546$, two-tailed. Title I school principals rated expectations with a mean score of 8.00 ($SD = 1.58$) whereas non-Title I school principals rated expectations lower ($M = 7.65$, $SD = 1.88$) but not significantly lower, $t(97) = 1.02$, $p = .312$, two-tailed. The autonomy indicator of instruction was not a significant difference among Title I principals ($M = 8.68$, $SD = 1.44$) and

non-Title I school principals (M = 8.15, SD = 1.87), $t(97) = 1.59$, $p = .115$, two-tailed. Title I school principals rated learning environment with a mean score of 7.13 (SD = 1.11) whereas non-Title I school principals rated learning environment lower (M = 7.08, SD = 1.55) but not significantly lower, $t(97) = .18$, $p = .860$, two-tailed. The autonomy indicator of relationships was not a significant difference between Title I school principals (M = 9.39, SD = 1.21) and non-Title I school principals (M = 8.98, SD = 1.73), $t(97) = 1.39$, $p = .167$, two-tailed.

The third null hypothesis examined if the five predictors of autonomy could serve as predictors of achievement on ISTEP+ language arts. In order to determine if any of the predictor variables (assessment, expectations, instruction, learning environment, and relationships) explained a significant amount of variance in language arts academic achievement, a multiple regression was conducted. A stepwise regression was conducted with the indicator of autonomy that had the strongest linear relationship with language arts academic success entered first to determine whether the relationship was significant. All other predictor variables were then entered based on amount of variance each explained in the criterion variable. This process continued until the addition of another predictor variable did not explain a significant amount of variance within language arts academic success.

The following assumptions were tested: independence of observation, linearity, multicollinearity, normality of residuals, and homoscedasticity. Independence of observation was tested using the Durbin-Watson test. This assumption was met because the Durbin-Watson value was close to 2 (1.81).

Linearity was tested by plotting the studentized residuals against the unstandardized predicted values. This test allowed for the linear composite all five predictor variables to be tested against the criterion variable. The assumption was met because the plot formed a

horizontal band, thus indicating a linear relationship between the predictor variables and the criterion variable. Linearity was also tested using a partial regression plot where each predictor variable was tested against the criterion variable. The partial regression plot determined that a linear relationship existed between each predictor variable and the criterion variable, thus meeting this assumption.

The assumption of multicollinearity was conducted to determine if the predictor variables were correlated with each other. This assumption was met because the tolerance levels of each of the predictor variables were above the recommended level of .2. The assumption of normality of residuals was tested using normal Q-Q plot of studentized residuals. This assumption was met as all data points on the plot were aligned with the diagonal line. The assumption of homoscedasticity was tested by plotting the studentized residuals against the unstandardized predicted values. This assumption was met as the residual distance neither increased nor decreased along the predicted values of the criterion variable.

In Table 16, the multiple correlation coefficient (R) describes the relationship between the linear combination of predictors (assessment, expectations, instruction, learning environment, and relationships) and the criterion variable, English/language arts academic achievement. A small correlation (.16) exists between the predictor variables and the criterion variable.

The multiple coefficient of determination (R^2) represents the amount of variance in the criterion variable that can be explained by the predictor variables. Within this model, 2.6% of the variance in English/language arts scores could be explained by the set of predictor variables. The adjusted multiple coefficient of determination (Adj. R^2) is the amount of variance within the criterion variable that can be explained by the predictor variables when adjusted for sample size and number of predictors. After this correction was made virtually no variance in the criterion

variable ccould be explained by the linear combination of the predictor variables. The standard error of the estimate is the amount of variability within the regression model; it represents how far the residuals varied from the prediction line established within the model. The standard error of the estimate in this model was 10.27.

The five predictor variables within the null hypothesis did not serve as significant predictors of English/language arts scores as reflected in Table 16. None of the scores of the predictor variables (assessment, expectations, instruction, learning environment, and relationships) explained a significant amount of variance within English/language arts scores to allow for accurate prediction of language arts academic achievement.

Table 16

Model Summary Statistics for Criterion Variable (Language Arts Scores)

Language arts scores	*df*	*F*	*Sig.*
Regression	5, 93	.49	.783

The fourth null hypothesis examined if the five autonomy indicators predict student achievement for mathematics. A multiple regression allowed for the examination of the relationship between the criterion variable (mathematics academic achievement) and the predictor variables (indicators of autonomy). A stepwise regression was conducted to examine which, if any, indicator of autonomy had the strongest overall effect.

The following assumptions were tested: independence of observation, linearity, multicollinearity, normality of residuals, and homoscedasticity. The same assumption tests as described in Null Hypothesis 3 were utilized and met.

The multiple correlation coefficient (R) represents the relationship between the linear combination of predictors (assessment, expectations, instruction, learning environment, and relationships) and the criterion variable, academic achievement. A medium correlation (.34) exists between the linear combination of predictors and the criterion variable.

The multiple coefficent of determination (R^2) indicates 11.4% of the variance in Math scores can be explained by the set of predictor variables. When the sample was adjusted for sample size and number of predictors, 6.6% of the variance in scores can be explained by the set of predictor variables. The standard error of the estimate is the amount of variability within the regression model. It represents how far the data points vary from the predicted values within the model. The standard error of the estimate in this model was 12.28. As evident by the results, at least one predictor variable within the model could explain a significant amount of variance in mathematics academic achievement, $F(5, 93) = 2.40$, $p = .043$, two-tailed.

Instruction was the only predictor variable that explained a significant amount of variance within the criterion variable of mathematics scores with $t(97) = 2.25$, $p = .027$ (Table 17). When holding all other predictor variables constant, a one unit increase in the predictor variable of instruction is predicted to raise math scores by 3.09 points.

Table 17

Regression Coefficients

Variable	*b*	*Beta*	*t*	*Sig.*
Assessment	-.69	-.09	-.62	.537
Expectations	.35	.05	.29	.773
Instruction	3.09	.40	2.25	.027*
Learning environment	-.61	-.06	-.44	.661
Relationships	-.22	-.03	-.16	.874

*$p < .05$

Summary

Null Hypothesis 1 was rejected because the mean difference in overall autonomy scores was statistically significant. In this case, it was determined that instruction at the elementary level was statistically significantly higher than at the middle/junior high school level. The mean difference in the composite autonomy scores of the remaining four indicators (assessment, expectations, learning environment, and relationships) of all elementary and middle/junior high schools was not statistically significant. There was not a statistically significant difference in the overall autonomy scores among Title I and non-Title I schools, therefore, Null Hypothesis 2 was retained.

Null Hypothesis 3 was retained because there was an absence of the ability to explain a significant amount of variance in the criterion variable by the linear combination of predictor variables. Null Hypothesis 4 was rejected since there was a significant amount of variance

between the linear combination of predictor variables and the criterion variable. The predictor variable of instruction served as a significant predictor of mathematics scores.

CHAPTER 5

DISCUSSION

The final chapter of this study is divided into five sections: summary, results, discussion, conclusion, and recommendations for future study. The summary addresses the purpose of the study, why academic success was chosen as a basis for this study, and who benefits from the study. The results provide a synopsis of the results presented previously in Chapter 4. The discussion interprets the results and links them to each of the indicators of autonomy. The conclusion offers insight into how academic achievement of schools can be increased. Finally, the recommendations for future study provide suggestions on additional research that could enrich the current study.

The study involved Indiana public school principals whose buildings housed any grade, 4 through 8. Schools housing at least one grade levels 4 through 8 were a focus for this study because growth model scores were available for these grades through standardized state academic testing.

Summary

The success of a school depends on a myriad of factors including, but not limited to, academic achievement, enrollment, financial solubility, and the satisfaction of all stakeholders. The purpose of this quantitative study was to determine whether there were significant differences among the five indicators of autonomy (assessment, expectations, instruction,

learning environment, and relationships) based on school type (elementary or middle/junior high school) and if there were differences based on Title I status.

This study was conducted to investigate the following research questions:

1. Are there significant differences in the five indicators of autonomy based on school type (elementary or middle/junior high)?
2. Are there significant differences in the five indicators of autonomy between Title I and non-Title I schools?
3. Do the five areas of autonomy serve as predictors of academic achievement as measured by language arts ISTEP+?
4. Do the five areas of autonomy serve as predictors of academic achievement as measured by math ISTEP+?

School leaders need to be able to make informed decisions about how to ensure the academic success of their students. This study presents a relationship between the indicators and academic success. School leaders could use the results to determine which indicator(s) of autonomy impacts their students' success and how careful consideration of these indicators can enhance the overall student learning taking place in their building.

Results

The findings of this study were presented in Chapter 4. The following null hypotheses were tested in this study:

1. There are no significant differences in the five indicators of autonomy based on school type (elementary or middle/junior high).
2. There are no significant differences in the five indicators of autonomy between Title I and non-Title I schools.

3. The five indicators of autonomy do not serve as predictors of academic achievement as measured by Language Arts ISTEP+.
4. The five indicators of autonomy do not serve as predictors of academic achievement as measured by Mathematics ISTEP+.

The first null hypothesis was rejected. Based on school type, elementary or junior high/middle schools, in the area of instruction there were significant differences among perceptions of autonomy. There are many potential reasons for the possibility of these differences being perceived by building principals. One potential rationale for this difference in perception for instructional autonomy may exist between elementary and junior high/middle schools because of the legislation defining a mandatory 90-minute reading block (Indiana Department of Education, n.d.b). Each elementary school must ensure that all students have at least 90 minutes of uninterrupted reading instruction to be compliant with current legislation.

A second rationale for the difference in instructional autonomy may be due to the fact schools must use specific materials for instruction. "Schools must use programs and materials based on scientifically-based reading research that focus on the essential skills and content standards and that are adopted and used school-wide with a high level of fidelity" (Indiana Department of Education, n.d.b, p. 1). The Indiana Department of Education (n.d.b) further stated the essential reading skills to be addressed are "phonemic awareness, phonics, fluency, vocabulary, and comprehension" (p. 10). The prescriptive instructional strategies outlined for elementary schools may be a potential reason significant perceptions in autonomy existed among elementary and junior high/middle schools.

Many reading series, although prescribed, do give students opportunities to select some readings of their own choosing. Reinders (2010) noted the teacher can provide a selected set of

texts, which include multiple topic areas, for students to select for reading. This ensures the student has text at the appropriate level and allows the student the autonomy to select a piece which interests him or her. The opportunity to select books of interest, as long as they are at the students' reading level, could be a potential enhancer of student autonomy during instructional time. By merely allowing students to have choice within their educational endeavors, elementary teachers in their reading blocks could increase motivation by allowing for student autonomy. Pink (2009) has linked increased levels of autonomy with raising motivation. Although these strategies are prescriptive, they have been proven to be effective, and though this may be perceived as limiting the autonomy of the teacher, the mandates may increase the level of autonomous function among students.

Another difference in the scores for autonomy in the area of instruction may have occurred due to the design of lesson delivery at the elementary level versus the middle/junior high level. Instruction in elementary reading is very specific during these blocks of time.

English/language arts instruction at the elementary level is focused primarily around reading. Elementary students participate in varied and differentiated learning activities geared to their level. The language/word study block consists of the following activities: "interactive editing, vocabulary, and reading; choral reading; handwriting; test reading/writing; current events; shared reading; poetry response; and word study" (Fountas & Pinnell, 2001, p. 15). Fountas and Pinnell (2001) went on to state that a reading workshop is further divided into three segments consisting of three different kinds of reading "independent, guided, and literature study" (p. 17). "Guided writing, independent writing, and investigations are the three divisions for guided writing" (Fountas & Pinnell, 2001, p. 18).

Middle/junior high students experience a different approach to English/language arts instruction at this level. The Indiana Department of Education recommended English/language arts shifts in upper elementary from "learning to read to reading to learn" (n.d.a, p. 3). They further stated, "It is necessary for all educators of students in Grades 6-12 to design and implement standards-aligned units and lesson that integrate language, literacy skills, and instructional support strategies with content area instruction" (p. 3). This shift may have potentially reduced the amount of time specifically devoted to reading instruction in the areas of fluency and comprehension and may have caused an increased focus on the purpose of reading for learning.

Additionally, it should be noted the instructional strategies outlined by the Indiana Department of Education may allow students to be more autonomous. A differentiated instructional approach is associated with autonomy-supportive learning (Reeve & Jang, 2006). By mandating a specified structure in the 90-minute reading block, the Indiana Department of Education has encouraged educators to use autonomy-supported learning because those strategies have been recognized as best practice.

Shanahan, Fisher, and Frey (2012) recommended teachers of middle/junior high students focus on the same skills as teachers of elementary students. They suggested building fluency by reading the same text multiple times for clarity and structure. This technique is recommended for elementary students but may be often thought to be too child-like for the adolescent. Shanahan et al. also recommended specific vocabulary instruction that goes beyond finding definitions and copying words. They believe opportunities need to be given to students to manipulate the vocabulary and apply it through a variety of methods. Establishing purpose is critical to student comprehension. Students need to be able to quickly establish if they are

reading a literary piece or a scientific text. Finally, to improve reading instruction teachers should "motivate students to keep trying, especially when the level of work is increasing" (Shanahan et al., 2012, p. 61).

Furthermore, the requirements may have created a potential need for increased professional development at the elementary level to address the changes that potentially would have needed to occur in schools to address the mandates. There is a possibility this increased potential for professional development did not extend to the junior high/middle school level because the legislation was recommended at this level as opposed to mandated. The adoption of a reading series from the state-approved reading list could have increased the likelihood that elementary teachers would need additional professional development training. Many school districts might have purchased professional development for their teachers to implement the reading series with fidelity as outlined by the law. This training might have shown teachers instructional techniques that were research based and allowed them to feel comfortable in implementing these in their classrooms. Regardless, the increased potential for professional development may provide teachers with a greater depth of highly effective instructional strategies, which, in turn, may increase academic achievement.

Moreover, a further reason for differences in autonomy scores in the area of instruction could be middle/junior high teachers may feel an increased amount of pressure to teach to the test. It is possible, with the advent of teacher performance being based, in part, on student achievement, teachers may feel the pressure, now more than ever, to ensure standards tested are covered in class. The teacher evaluation tool developed by the state of Indiana, RISE, indicates highly effective teachers will "facilitate student academic practice so that all students are participating and have the opportunity to gain mastery of the objectives in a classroom

environment that fosters a climate of urgency and expectation around achievement, excellence, and respect" (Indiana Department of Education, n.d.b, p. 4). This component of RISE could aid middle/junior high educators and building leaders to see teaching strategies is an important aspect of their responsibilities, regardless of the subject area.

The potential for increased pressure of teaching to the test coupled with the possibility that middle/junior high teachers are licensed as high school English teachers versus elementary teachers with a reading endorsement may be a potential reason differences were noted in autonomy, specifically in the area of instruction. Tovani (2000) also noted content-area teachers have received little education in teaching reading skills. This argument could be valid but also could be countered by stating the content-area teachers have degrees in specific subject areas, and they had to learn to read content critically. Tovani stated, "The very fact that you can read makes you something of an expert" (p. 21). Simply sharing what they know about reading the content they teach can be of benefit to students. One potential area of need for administrators to address could be to provide adequate professional development to content-area teachers so they can offer reading assistance to students in the content areas.

Administrators at the middle/junior high level also need to be prepared to offer time for teachers to teach reading. Asking content area teachers to squeeze reading into their already short, roughly 45-minute block of time where content must be taught may not be practical unless administrators work with these teachers on how to integrate these strategies into their instruction. The time and opportunity has never been better for education due to the fact literacy standards are now a part of the Common Core State Standards and were supposed to be integrated two years ago for Grades 6-12. In order for literacy standards to be integrated into all social studies, science, and technical subject areas, these teachers may need professional development on

literacy instruction in order to feel comfortable implementing them. Many teachers will have to feel comfortable with literacy prior to choosing to implement it in the classroom.

School leaders cannot choose to acquiesce to these arguments. Understandably, it is difficult for all middle/junior high school teachers to instruct English/language arts in the same way elementary teachers do, but the research presented here may necessitate this consideration. Ideas of how to accomplish this task will be offered later in the chapter. The Indiana Department of Education (n.d.a) noted, "When middle and high school teachers embrace their role as disciplinary literacy educators and introduce specific strategies to support literacy needs, students acquire and retain content material more effectively" (p. 3).

The second null hypothesis stated there were no significant differences in the five indicators of autonomy between Title I and non-Title I schools. This null hypothesis was retained as there were no significant differences in the five indicators of autonomy based on Title I status. There is the potential that differences may not have been observed, due to 60 of the 99 (61%) schools surveyed being Title I schools. This represents nearly two-thirds of the sample. The lack of schools found within this study that were not Title I may have contributed to the statistical test not having enough power to find the significant difference.

To be eligible for Title I funding from the Indiana Department of Education and the United States Department of Education, schools and districts must follow certain guidelines already defined as best practice. Schools wishing to receive Title I funding must provide teachers with the ability to make decisions offering the most impact on student achievement. Schools must also agree to participate in professional development opportunities for their teachers. Parents must be given the opportunity to collaborate with the school and be involved in the educational decisions regarding their children under Title I guidance. A specific plan must

be developed by the school and district detailing strategies that will be used to provide professional development, instructional strategies, and ways parents will be involved in the educational process (Elementary and Secondary Education Act, 1965).

Title I schools have a variety of resources available to them via the Indiana Department of Education website and the Learning Connection. These resources include parent involvement support, subject area resources, education liaisons by subject area, and resources for families. Because these resources are available online, they are also available to non-Title I schools. This may be another potential reason there were no significant differences in the five indicators of autonomy between Title I and non-Title I schools.

While professional development is a vital component to remain compliant with Title I regulations, the emphasis on all schools over the last few years to enhance their professional development opportunities for teachers has increased. One indicator of this is how the Indiana Department of Education is communicating with school districts regarding Title II funds. In the past, these funds could have been used solely for class size reduction and grant reviewers would approve these grants. Over the last few years, the grant reviewers have emphasized the need to ensure that professional development is embedded within this grant (U.S. Department of Education, 2006). This change in how the grant money is allocated could have led to the potential differences among Title I schools and their counterparts being diminished.

The third null hypothesis was retained. The third null hypothesis stated the five indicators of autonomy do not serve as predictors of academic success as measured by language arts ISTEP+. The results indicated none of the five indicators of autonomy were found to be significant predictors of academic success as measured by language arts ISTEP+. One possible reason may be attributed to the increased focus on English/language arts through the legislation

requiring a 90-minute reading block, which has occurred within the last five years for elementary schools. It is possible that if this study had been conducted five to 10 years ago, some of the five indicators of autonomy would have been predictors of academic success since schools were not mandated to instruct a certain way, as outlined in the explanation of Null Hypothesis 1. It is possible the mandate from the Indiana Department of Education may have reduced the ability to be able to predict academic success, with regards to the autonomy indicator of instruction, because English/language arts instruction across the state is delivered in a similar fashion.

An additional possible explanation the autonomy indicators do not serve as significant predictors of academic success could be the addition of literacy standards for Grades 6-12. These standards could have placed an increased emphasis on the skills being tested for the language arts ISTEP+ for all middle/junior high school teachers.

Furthermore, there is the potential the principals' understanding of best practices could have impacted the results, which did not find that the autonomy indicators served as predictors of language arts ISTEP+ performance. The age of principals as well as years of service and in current position could be clues to this potential impact. The mean age of all principal participants within this study was 48.45 (SD = 9.42). These participants had served an average of 8.07 years (SD = 7.23) years in their current positions. These findings could indicate school administrators received certification and participated in continuing credit hours in order to maintain administrative certification during the last two decades and are current on best practices within educational research.

Moreover, an additional reason the indicators of autonomy are not significant predictors of academic success on language arts ISTEP+ may be attributed to the level of professional ethics to which school administrators must adhere. Administrators in Indiana must subscribe to

Interstate School Leaders Licensure Consortium (ISLLC) Standards for School Leaders and Educational Leadership Constituent Council (ELCC) standards. The standards require school administrators to develop a school environment promoting learning for students and staff. School leaders must also effectively manage the learning environment and collaborate with faculty and community members (Council of Chief State School Officials, 2008). Collaborative structures where educators work together ensure learning occurs at all levels and all students learn at high levels (DuFour, DuFour, & Eaker, 2008).

In order to become a certified school administrator an assessment is taken by the candidate where these standards are focused on, in depth. The course preparation offered by universities stresses the ISSLC and ELCC standards and offers school leaders a variety of methods to ensure effective implementation. The instruction includes coursework not only in finance and human resources but also in effective instructional strategies. Administrators in the schools of today have had the opportunity to receive the latest training and preparation and may already be implementing effective instructional strategies in the area of English/language arts. This could account for the small amount of explained variance in English/language arts ISTEP+ scores from the five indicators of autonomy.

The fourth null hypothesis was rejected. The fourth null hypothesis stated the five indicators of autonomy do not serve as predictors of academic success as measured by math ISTEP+. The results demonstrated that the factors of autonomy were able to serve as predictors of academic success on the mathematics ISTEP+ assessment. Within these regression tests instruction was found to be a significant predictor of academic success.

One potential reason the autonomy indicator of instruction was found to be a significant predictor of mathematic academic success may be attributed to the fact that effective math

teachers may already be accessing the vast amount of instructional strategies and professional development that is available to teachers of language arts and applying those strategies in their content areas. The subject area, by nature, allows for student exploration and manipulation. The National Council of Teachers of Mathematics recommends "students must be able to solve complex problems, form and test mathematical ideas, and draw conclusions" (Battista, 1999, p. 427). This could be compared to the reading teacher asking students to make inferences based upon information presented in a story. Math and reading teachers may have much to share with each other and, through their work together, academic success could be enhanced.

Likewise, effective math teachers also model their thinking by sharing thoughts aloud with students, similar to a think-aloud in reading. Teachers may be unsure about using the think-aloud process to model their mathematical thinking for students; however, the think-aloud strategy teaches "students to carefully read problems, paraphrase the problem, analyze the information, form a plan, solve the problem, and assess the solution" (Reid & Lienemann, 2006, p. 176). Schools looking to improve academic success in the area of math are encouraged to review these methods.

Moreover, the area of mathematics allows students the autonomy to work together, think aloud, and time to solve problems on their own to be successful. Students of today will be working and living in the 21st century. Skills for overall success have been identified by the Partnership for 21st Century Skills (2011). These skills have been identified as "critical thinking, communication, collaboration, and creativity" (p. 1). Students who have teachers lecturing for 45 minutes with no break for questions or paired sharing miss out on critical skills needed for later in life. Kenney (2005) encouraged students to contradict each other and

suggested allowing students to share the various ways each solved the same problem. In these interactive and differentiated classrooms, students have a greater opportunity to excel.

Additionally, teachers who allow students varied ways to apply their learning, via differentiated instruction, may be another potential reason the autonomy indicator of instruction was found to be a significant predictor of academic success as measured by mathematics ISTEP+. Danielson (2007) defined instruction as meaningful opportunities for students to practice, apply, and demonstrate what they are learning.

Mathematics could be considered a language of its own and math teachers have to teach the language specific to mathematics through varied practice and application strategies. This was supported by Kenney (2005) when she determined students have to be retaught the main idea in a story problem comes at the end and that words like *a* and *of* have multiple meanings in math. Kenney further stated specific vocabulary instruction in mathematics is derived from the fact the strategies used to teach vocabulary in English/language arts do not allow for the translation of skills to mathematics. Therefore, it is more important than ever for administrators to understand this dynamic and either offer professional development or time for collaboration among departments.

Teachers of math could struggle if they are asked specifically to teach reading strategies in their classrooms; however, students may increase their ability to reason mathematically if they are able to effectively process the vocabulary and "mathematical language" they encounter. In the past, most schools supported the rote memorizing of facts and procedures with little application of knowledge in the real world (Battista, 1999).

Finally, it should also be noted that the area of mathematics instruction and professional development has not been as heavily regulated in the state of Indiana as English/language arts,

especially reading, since the inception of the 90-minute reading block. There has not been any legislation requiring research-based instructional programs in math as there has been with reading at the elementary level. Due to this, the variability within the mathematics instruction could be easier for principals to determine because there is no prescribed program.

Discussion

The data findings presented evidence that in at least one indicator of autonomy, instruction, there were significant differences between elementary and junior high/middle schools. The data indicated that instruction is a significant predictor of academic success in the area of mathematics.

Learning expectations at the middle/junior high school level for English/language arts are similar to those at the elementary level. The extension that occurs is for students to be able to read and write at a deeper or more developed level. Mathematics expectations at the middle/junior high level include the concepts at the elementary level and require students to apply these concepts through ratios, expressions, and statistics. Students also begin exploring abstract concepts (Indiana Department of Education, 2011b).

The Indiana Department of Education (2011a) requires elementary students to receive instruction in reading, writing, speaking, and listening. Students should be able to learn new material and apply the skills through writing using the writing process, which includes prewriting, drafting, revising, editing, and producing a final draft (Indiana Department of Education, 2011a). Elementary students should also be able to add, subtract, multiply, and divide numbers. Students should also be able to use these skills to problem solve and use the functions when working in the areas of measurement and geometry (Indiana Department of Education, 2011a).

The significant difference in academic achievement at the elementary level may have occurred because elementary schools in Indiana must follow a strict instructional protocol, prescribed by the Indiana Department of Education. Indiana students in Grades K–3 "should receive at least 90 minutes of uninterrupted daily reading instruction" (Indiana Department of Education, n.d.b, p. 3). The protocol is a highly prescriptive format where schools are to divide the block of time into the five components of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension. "Learning should be offered through whole class, small group differentiated instruction and literacy stations" (Indiana Department of Education, n.d.b, p. 5).

This format assists the teacher in meeting student needs through a differentiated learning experience. Reeve (2006) indicated autonomy-supportive teachers will allow students input regarding the content of the lesson, slowing students to ask questions, and will avoid directives and setting firm, non-flexible deadlines. The structure also allows teachers to address student needs on an individual basis and guides the instruction based upon students' needs and is consistent with a differentiated learning approach as outlined by Tomlinson (2001).

Title I elementary schools in need of improvement are required to use diagnostic tools to inform instruction (Indiana Department of Education, n.d.c). Many other schools not in need of improvement have chosen to use these same resources to inform instruction, thereby effecting academic achievement. This may be another reason instruction is seen as a predictor of English/language arts success at the elementary level.

The traditional middle school/junior high concept allows for a 45- to 50-minute block of English/language arts instructional time. The prescribed instructional strategies in this area of instruction could also explain why elementary schools scored above the mean in all areas of autonomy studied. The reading requirements from the Indiana Department of Education and

Indiana Legislative Code could contribute to the significant difference between elementary and junior high/middle schools. This recommendation is discussed in depth later in this chapter.

The data between Title I and non-Title I schools displayed differences in the mean scores for the autonomy indicators. These differences were not significant. Title I principals rated instruction higher than non-Title I school principals with a difference of .53. This is also the indicator of autonomy where there is the greatest difference in scores between the two types of schools.

It is important to note that 77 of the schools surveyed were elementary schools and 54 of those schools were Title I schools where many of the practices described previously are already in practice. Surveys were returned received from 22 middle/junior high schools, and 16 of those schools were non-Title I. This sample description could explain the low variance in autonomy scores between Title I and non-Title I schools.

The data findings presented there was not a significant relationship among the indicators of autonomy and English/language arts ISTEP+ scores. Instruction was the indicator of autonomy where the most amount of variance occurred, but it did not explain a significant amount of variance in English/language arts ISTEP+ scores.

Additionally, the majority of schools surveyed were elementary schools. This contributes to a small amount of variance in scores. Although there is a positive relationship between autonomy indicators and academic success, it is not statistically significant.

The data indicated a significant relationship between the autonomy indicators and academic success as indicated on mathematics ISTEP+ standardized testing. Survey results indicated instruction was the area of autonomy that is the significant predictor of academic

success when compared to the other indicators of autonomy (assessment, expectations, learning environment, and relationships).

The survey questions that addressed instruction were

1. Approximately what percentage of teachers builds respect by using wait time effectively?
2. Approximately what percentage of teachers incorporates differentiated instructional strategies in planning so that every student is connected to their learning?
3. Approximately what percentage of classrooms gives students meaningful opportunities to practice, apply, and demonstrate what they are learning?

Allowing three seconds once a question has been asked or waiting when a student pauses mid-answer is adequate (Marzano, 2007). Wait time removes pressure from students who respond first and adds pressure to students who wait until someone else responds because all students know they have an equal chance of being called upon. Reminding students to take time and think is one way to increase wait time. Using wait time effectively allows students to think deeper and make stronger connections. Ben-Hur (2006) stated, "Teachers must wait longer and listen carefully to students' responses . . . Wait time saves remedial work and enhances the learning environment" (p. 27).

National Council of Teachers of Mathematics stressed the need for students to work with computational tasks and application versus focusing on repeated skill practice using timed drills or lecture and homework as ways to enhance student knowledge of vocabulary words or math facts (Ben-Hur, 2006). These types of activity lack creativity, do not push students' thinking, and disengage the learner. "The meaningless repetition, copying, and imitation that are typical in

mindless practice render students unable to know what to do with standardized test items that fall outside those drills practiced" (Ben-Hur, 2006, p. 32).

Educators can effectively differentiate instruction by assessing each student's current level of knowledge at the beginning of the unit (Tomlinson, 2001). Based upon the results, students can be organized in groups where levels of learning are similar, students can be placed on individual learning paths with individualized lessons, or the teacher can compact the material to be covered and only teach skills the students are lacking as a group (Tomlinson, 2001). Thinking about teaching this way can seem daunting and it most assuredly requires expertize in planning. Ultimately, students will be more engaged in their learning and will experience higher levels of motivation. Discipline problems will decrease thereby allowing the teacher to more acutely address individual student needs (Lent, 2012).

Another benefit to differentiated learning was noted by Lent (2012), who said, "students are encouraged to take a position on an issue, find evidence to support that position, and communicate their findings clearly" (p. 175). Differentiated learning requires students to inquire during the learning process, problem solve, and collaborate with others. Being able to complete tasks independently and synthesize learning using these skills will benefit students in the 21st century workplace.

Giving students the opportunity to work together, share their learning, and ask each other questions is an invaluable instructional strategy. Allowing students to participate in this kind of learning environment is essential to their success as young learners (Ben-Hur, 2006). Once students appear to have grasped a concept, teachers need to encourage students to apply the new concept in varied settings in order to solidify learning. Without adequate time to practice, students may have trouble cementing learning and recalling knowledge with automaticity.

Practice can be offered in three ways (Marzano, 2007). The first practice experience should be highly structured including teacher modeling and time built in to answer questions. The second opportunity for practice can be less structured and be more varied in the task. In this setting, teachers are more the guide and students are working independently or together to accomplish tasks. The final method of practice allows students to work independently and can be assigned as homework (Marzano, 2007). Each of these types of practice should be implemented in the classroom and in succession, gradually releasing responsibility for learning to the students, thus increasing their level of autonomy.

Some educators could argue the best way to practice a new task is through homework assignments. Depending on the quantity of problems assigned and what the teacher does with the homework once it returns to school can make homework valuable. Marzano (2007) supported this philosophy when he offered that homework should be assigned so there is a high rate of return. Homework should have a clear purpose related to learning goals and should be completed independently. Teachers assigning numerous problems for homework may want to exercise caution in order to prevent the student from wrongly practicing the new skill without opportunity for teacher feedback. Dougherty (2012) stated, "Student products also give feedback about the effectiveness of teacher work: how well assignments set the stage for instruction and how well that instruction taught the demands and qualities embedded in the assignments" (p. 153).

Based upon the data collected, the following are recommendations for building principals who wish to improve academic performance in the areas of English/language arts and mathematics. The recommendations for English/language arts are not only for elementary schools but also middle/junior high schools because success is shown at the elementary level

with these methods. The recommendations for mathematics are for both levels of schools regardless of Title I status.

The first recommendation middle/junior high schools may wish to explore is how to incorporate a 90-minute English/language arts block into their daily schedules. One way schools can accomplish this is to eliminate an elective and offer English/language arts in a double block of time. Another way to attain the 90 minutes would be to operate on a modified block schedule where the reading portion of the class would meet three times a week and the writing portion would meet two times a week. Each class would have 90 minutes each session and would alternate the number of days meeting each week.

Ninety-minute English/language arts blocks could be constrained by finances as it would require schools to return to a more traditional middle school feel by blocking and more staff would need to be hired. To counter this concern many schools have modified the school day by lengthening the day 30 minutes or less or have opted to shorten instructional time elsewhere in the day. In a seven-period day, three minutes can be taken from each period to offer a 21-minute block of time for reading instruction to occur. This solution may be more palatable to content-area teachers because they are only shortening each class by a few minutes for a dedicated block of time for English/language arts instruction instead of squeezing reading instruction into their regular coursework.

Secondly, all schools may wish to explore using the types of instructional strategies that are associated with the state prescribed 90-minute reading block. The Indiana Department of Education recommended “integrated instruction emphasizing reading in content that is interest and age appropriate (Indiana Department of Education, 2011b, p. 19).

Content-area teachers can also support English/language arts instruction by using graphic organizers and note taking guides in their classroom. The research of a McREL study indicated instructional strategy of note taking has the second highest probability of enhancing student academic achievement (Marzano et al., 2001). Also in Marzano et al.'s (2001) *Classroom Instruction that Works,* it was found using an organizer in a content area classroom could help students deepen their understanding of material covered. These graphic organizers also serve as an effective literacy instruction aide for developing reading comprehension for students.

School administrators wishing to improve academic success in the area of mathematics may want to consider exploring ways to incorporate the instructional strategies outlined in this study into each of their classrooms. One of the strategies that can be implemented in both areas (English/language arts and mathematics) is guided reading. Kenney (2005) suggested that patterning math instruction after a guided reading model is something teachers are familiar with and is proven to be successful. Kenney (2005) suggested patterning math lessons on the basic guided reading questions by asking students what the title tells them about what the work they are to do, to stop and check to see if their work makes sense, to ask questions, and to support the answer with components of the initial problem.

Autonomy-supportive teaching allows students time to work together and talk through possible solutions. Not only do students need to collaborate they also need the time to make graphic representations of their learning. When students can read, write, and talk about what they have learned, educators know students have truly synthesized learning. One way math educators can give students an opportunity to write about learning is to have students maintain a notebook where notes are stored. Notes would include graphic organizers and thoughts noted in the margin for the teacher to respond to. This is done much in the way a student keeps a

reader/writer notebook. Ben-Hur (2006) noted, “Journals can help teachers assess students’ reflections of their own capabilities, attitudes, and dispositions and evaluate their abilities to communicate mathematically through writing” (p. 121). Being able to communicate mathematical thoughts in writing is critical to success as measured by ISTEP+ mathematics.

Finally, school leaders may want to consider offering teachers professional development in the area of effective instructional strategies. Indiana Department of Education (2011b) mandates that a middle school curriculum “is provided in a culture that fosters collaboration of teachers and other school personnel across subject areas, through techniques such as teaming or professional learning communities” (p. 4). Pursuant to Indiana Academic Code, schools can no longer ignore teacher requests to work together and collaborate.

Schools have resident experts in each area, and without careful attention and planning their knowledge could go untapped. Allowing teachers to work together is a valuable tool and an inexpensive method of professional development. For it is “when teachers have access to each other’s ideas, methods, and materials, they can expand their repertoire of skills” (DuFour et al., 2008, p. 215).

School leaders who choose not to offer ongoing, job-embedded professional development opportunities for their teachers may be at risk to have low-performing schools. DuFour et al. (2008) stated, “Training is most relevant and valuable when it is delivered as they are engaged in doing the work” (p. 414). For it is when teachers and administrators collaborate together and implement changes using best practices, effective instruction will occur resulting in academic success.

It is no surprise what is best practice for students is best for adults. This study presents an argument for differentiated learning as an effective instructional strategy. Through

differentiated instruction students are encouraged to collaborate with each other, modeling is performed, questions are asked, time is given to practice, and frequent learning checks are made. When professional development is offered correctly, it, too, achieves these learning objectives. DuFour et al. (2008) supported professional development that is collaborative, ongoing, embedded, focuses on results, aligned to goals, and occurs in context of real work, not made up scenarios.

Controlling classrooms can lead to less student engagement, which in turn leads to diminished learning, ending, ultimately, in poor academic progress for the student, school, and district. Controlling classrooms limit creativity and learning (Reeve et al., 2004). The previously mentioned recommendations are consistent with autonomy supportive teaching and students in autonomy supported classrooms show better understanding of material (Reeve et al., 2004). School leaders may wish to explore the recommendations set forth by this researcher in order to increase academic success.

Recommendations for Future Research

This study could be enhanced by future research exploring other areas that impact academic success. Areas might include adult involvement in the education of children in the home and at school. In a study completed by Wilcox (2012), it was found that student participation in any extracurricular activity is a significant predictor of academic achievement. The study also reinforces when adults are involved in the education of a child, via extracurricular events, student achievement increases on language arts and math standardized test scores.

Another area where this study could be enhanced would be to survey more middle/junior high schools. This study was robust with elementary schools and conducting the same study with a focus solely on middle/junior high schools would give school leaders more focused

suggestions for improvement. This study also received more participants from rural and suburban schools versus urban schools. A more concerted effort to garner participants from urban schools could make the findings of the study more robust.

Finally, a researcher may want to conduct a mixed-method study where the researcher observes the practices of classroom teachers and has school principals complete the survey. These two pieces of data would then be compared to academic performance as measured by standardized testing. An observation tool would need to be created for this study and the validity of the instrument tested.

Conclusions

The purpose of this research was to determine which component of autonomy-supportive teaching impacted academic achievement significantly, if at all. Some stakeholders may measure the success of schools through standardized testing. Whether school districts, schools, or I believe that is the best way to measure school success, it is the reality of education today. Failing schools need to improve in the area of Mathematics and/or English/language arts or they will face sanctions from the Indiana Department of Education, up to and including school takeover or closure. Following one or more of the recommendations set forth by me may be a way to improve academic success, thereby being a successful school.

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APPENDIX: SURVEY

Your current age?

How many years have you worked in the educational field?

How many years have you been in your current position?

What is your school DOE number? (optional)

What is the name of your school?

What is the name of your district?

Which better describes your school?

- ◯ Elementary
- ◯ Middle School/Jr. High

Are you a Title 1 school?

- ◯ Yes
- ◯ No

For the purposes of this survey autonomy is defined as "the capacity to govern oneself" (Cuypers, 2009, p. 192). Teachers displaying autonomous characteristics have the freedom to match student needs and interests to learning objectives (Reeve, Jang, Carrell, Jeon, & Barch, 2004). For each remaining question, please consider the percentage of teachers in your building that consistently display autonomy, as defined.

Approximately what percentage of teachers allows students to assist in the development of grading criteria?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers check for understanding at higher levels by using pertinent, scaffold questions that push thinking, even if doing so is not part of the prescribed curriculum?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers modifies instruction to respond to misunderstandings even if doing so hinders the flow of the lesson?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers uses high expectations to motivate students to do it again if not great?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers ensures that students can explain what they are learning and why it is important?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers explains the learning objective so that students understand why they are learning what they are learning?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers builds respect by using wait time effectively?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers incorporates differentiated instructional strategies in planning so that every student is connected to their learning?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of classrooms gives students meaningful opportunities to practice, apply, and demonstrate what they are learning?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of classrooms have desks in rows?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of classrooms has students share responsibility for operations and routines?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of classrooms have students working together effectively to accomplish shared tasks?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers gives students opportunities to collaborate and support each other in the learning process?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers creates a welcoming classroom by praising academic work?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%

Approximately what percentage of teachers has a good rapport with students by showing genuine interest in student opinions and thoughts?

◯ 0% ◯ 10% ◯ 20% ◯ 30% ◯ 40% ◯ 50% ◯ 60% ◯ 70% ◯ 80% ◯ 90% ◯ 100%