

COMMUNICATION STYLES: AN EXAMINATION OF ABILITY TO
COMMUNICATE WITH STUDENTS AND STUDENT ACHIEVEMENT
IN MICHIGAN PUBLIC SCHOOLS

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This is dedicated to Ryan, Luca, Mom, Dad, and Matt.

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ABSTRACT

COMMUNICATION STYLES: AN EXAMINATION OF ABILITY TO COMMUNICATE WITH STUDENTS AND STUDENT ACHIEVEMENT IN MICHIGAN PUBLIC SCHOOLS

by Alison M. Cicinelli

Student achievement is the primary focus of attention in American schools. The ability to connect with all students is no longer an option, but an expectation in the classroom. Teachers communicate easily with some students, but may have a difficult time communicating with others. In this study, teachers were asked to choose five students that they communicated with easily and five students with whom he or she had a difficult time communicating. Nine hypotheses were examined during this investigation to answer the following research question: What is the relationship between a teacher's ability to communicate with students and student achievement? An analysis of the data revealed that a teacher's ability to communicate with students does impact student achievement for academic measures that align with teacher expectations, such as grade point average (GPA). Externally created measures, such as reading and math Michigan Educational Assessment Program (MEAP) scores, did not show the same results. The ability of students to comply with teacher expectations may be the determining factor for differences in locally measured achievement. Statistical analysis also revealed that there were differences in measures of student achievement with GPA indicating a higher level of achievement than reading and math MEAP measures for the same group of students. Higher GPA scores may be a result of favorable grades that were determined by whether or not students were compliant in the classroom. The critical finding in this study is that teacher identification of students as easy or difficult to communicate with seemed to be a function of local measurement differences, but had no bearing on externally measured achievement. The results

of this study will help inform educators about how to give fidelity to best practices to positively impact student achievement. Communication is essential for student understanding of teacher outcomes and helps give fidelity to other research-based best practices in an effort to help students reach proficiency. To serve students best and prepare them for the 21st century, teachers need to be able to help students meet goals that align with standards aimed at getting students college- and career- ready. A teacher's ability to connect with students can impact the overall success of students at school and in life.

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CHAPTER I

INTRODUCTION

Education in the United States is under attack with student achievement as the primary focus of attention. Never before has there been as much emphasis placed on meeting the needs of all students to get them college- and career-ready. The ability to connect with all students is no longer an option but an expectation in the classroom. Educators may find it easy to communicate with some students and difficult to communicate with others, but the expectation remains the same: All students must meet federal and state standards at a proficient level.

This study compared a teacher's ability to communicate with students to student achievement. Teachers were asked to choose five students with whom he or she communicated easily and five students with whom he or she had a difficult time communicating. Ability to communicate with students was compared to student achievement to determine if there was a significant relationship. The results of this study will be used to contribute to the practical application of teaching. It will be used to inform educators about instructional practices and strategies that will help teachers connect more effectively with students. The knowledge attained will be used to make generalizations about communicating with students in an effort to increase the proficiency level of all students, especially those with whom teachers have a difficult time communicating.

The remainder of this chapter will discuss the purpose of this study and why student achievement deserves an emphasis. It will also explore one of the major problems faced in education today: Many American students are failing to reach a high level of achievement. This investigation is significant in supplementing current research in education to impact student

achievement positively. Studying the relationship between student achievement and a teacher's ability to communicate with students is necessary to meet the needs of all students.

Statement of the Problem

Getting a quality education is an expectation for all children living in the United States. It is a necessity in order to become a productive global citizen in society. In order to advance as a society, the ability to simply show up on time and follow directions is no longer the means to attain success as it was 30 years ago. To become successful in the 21st century, students must have the skills that allow them to be creative thinkers and problem solvers in a global society. As years have passed, so has the skill set required for success. Unfortunately, many students have not met this challenge:

Most of America's high school students are not ready for either college or work. We've made virtually no progress in the last ten years helping them to become ready. And from everything we've seen, it's not going to get better any time soon. (ACT, 2005, p. 1)

The expectation of acquiring 21st century skills is crucial for the success of students in the workforce and in college. Not preparing students adequately for the real world has a drastic negative impact. The entire American democratic society is affected when U.S. students perform subpar as measured by ACT's national readiness indicators (ACT, 2005). Currently, American student performance is poor and below that of other countries. As many other countries have risen to the higher expectations of the 21st century, the U.S. has not (National Governors Association, the Council of the Chief State School Officers, and Achieve, 2008). Modern times demand that the American education system keeps pace with other countries.

American education has not adequately responded to these new challenges. The United States is falling behind other countries in the resource that matters most in the new global

economy: human capital. American 15 year-olds ranked 25th in math and 21st in science achievement on the most recent international assessment conducted in 2006. At the same time, the U.S. ranked high in inequity, with the third largest gap in science scores between students from different socioeconomic groups. (National Governors Association et al., 2008, p. 5)

Consequently, the effects of not responding to the educational needs of students in the U.S. impact individual students and the nation as a whole.

Background

The effects of not educating students adequately impact all people in the U.S. and not just individuals. The solution to the problem must begin by implementing what the research suggests and emulating the characteristics present in schools that are high achieving, despite the challenges many students face. “We live in an era when research tells us that the teacher is probably the single most important factor affecting student achievement—at least the single most important factor that we can do much about” (Marzano, Marzano, & Pickering, 2003, p. 1). Reeves (2005) suggested many best practices but also discussed the idea that one practice or factor alone is not what helps increase student achievement. Instead, he argued that successful schools exhibit the same characteristics. In his research, Reeves (2005) found:

There was a common set of behaviors exhibited by the leaders and teachers in schools with high achievement, high minority enrollment, and high poverty levels.

- A focus on academic achievement
- Clear curricular choices

- Frequent assessment of student progress on multiple opportunities for improvement
- An emphasis on nonfiction writing
- Collaborative scoring of student work (p. 187)

One of the major strategies identified to increase student achievement is feedback. How feedback is delivered can be in many forms and can impact the overall effect and percentile increase on student achievement (Marzano, Pickering, & Pollack, 2001; Marzano, 2006; Marzano, 2010). Reeves (2005) stated, “The schools with significant improvements provided significantly more frequent feedback to students than is typically the case with a report card” (p. 196). While feedback can have a significant role in student achievement, whether or not the feedback is communicated effectively to the student will impact student learning. For communication to take place, it is important to understand what is meant by the person with whom you are communicating (Gilbert, 2012). If the messages are different, then communication has not taken place, and the positive general effect of feedback on student achievement is not felt. A teacher’s ability to communicate effectively with students affects the accuracy with which students understand their expectations. While effective and timely feedback is essential for increasing student achievement, a crucial step that must take place is for the feedback to be communicated (i.e., students must understand the message intended by the teachers). Reeves (2005) further stated, “Teachers with large gains were committed to feedback that was consistently accurate, with student performance compared to unambiguous expectations” (p.196).

One practice that significantly influences student learning is the ability of an educator to address children’s needs on an individual basis. “The ability of teachers to communicate

effectively with all students, regardless of individual differences, may be the determining element in overall student success” (Bailey, 1998, p. 185). With high-stakes testing and a clear focus on accountability and student achievement, awareness of and attention to individual student differences has never been higher. Educators are being held accountable for their students to perform well on standardized tests. “No longer can public schools simply raise the *average* test scores in their schools; instead, public schools must see to it that *every* child in *every* demographic improves his or her test scores” (Christensen, Horn, & Johnson, 2008, p. 62). The accountability brought forth by the No Child Left Behind Act (NCLB) expects that teachers are responsible for meeting the needs of all students in their classroom even if there are differences in personality types (No Child Left Behind Act, Pub. L. No. 107-110, § 1001, 115 Stat. 1426, 2002).

Context

To ensure that all students are performing at a level deemed acceptable according to NCLB, every student must reach a high level of proficiency. The only way this will happen is by focusing on individual students. “Effective teachers must first connect with their students personally as the precursor to foster student learning” (Gilbert, 2005, p. 15). Reaching this benchmark is necessary to keep the U.S. competitive in this global economy. “Some top-performing countries have adopted policies to ensure that every student succeeds by monitoring students’ progress and intervening to prevent them from falling too far behind” (National Governors Association, et al., 2008, p. 5). Fuchs and Fuchs (2006) acknowledged that an individualized program is necessary when meeting the needs of struggling students. The ability to communicate effectively with struggling students can help educators determine what type of assessment and interventions will be most beneficial for individual students.

The ability to structure a classroom to meet the needs of various types of students is a necessary skill that when paired with proven research-based strategies and best practices will likely foster high achieving students. According to Bradley, Pauley, and Pauley (2006):

Educators need to be able to tailor learning experiences to individual needs and learning styles. They understand that students learn in different ways and at different rates and consequently need to constantly search for alternative ways to enhance learning. They use a wide range of techniques, materials, and experiences to engage students' interests.
(p. 121)

Much research has been done discussing how to meet the needs of individual students, but one fact remains clear: Students are not all the same. Many are motivated differently than their teachers. "Many students who are struggling in school simply have learning styles or personality types that are incompatible with the structure of the traditional classroom and academic standards" (Bailey, 1998, p. 48). Teachers need to have the ability to reconcile how to meet the needs of individual students knowing that there is a diverse range of motivational needs in the classroom. "If teachers change the way they manage their classrooms, create different environments at various times during each class period, and individualize the way they motivate each of their students, many of the negative behaviors that students demonstrate can be stopped" (Bradley, et al., 2006, p. 86).

Purpose of the Study

Due to the high standards placed on educators to foster student learning from NCLB, addressing individual student needs is essential. The results of this study will help educators understand how to increase their ability to connect with all students to impact student achievement positively. This study supports educators by providing necessary tools to

communicate with students more effectively. Specifically, strategies are recommended to use with difficult students by identifying the common ways in which difficult students communicate. The purpose of this study was to test the relationship between a teacher's ability to communicate with students and student achievement. The independent variable (ability to communicate) was determined by the Personality Pattern Inventory (PPI) (Kahler, 1982). The dependent variable (student achievement) was defined by GPA and the standardized math and reading scores on the Michigan Educational Assessment Program (MEAP) test.

Significance of the Study

The results of this study will help educators understand if there is a difference in achievement between students with whom teachers connect easily and students that teachers have a difficult time reaching. There is tremendous pressure placed on teachers to educate students based on specific individual needs. This research will suggest how teachers can connect with more students, increasing a student's chance of being successful at school. Success was measured as student achievement. In this study, student achievement and proficiency were used interchangeably as a measure of student success. As the stakes escalate and teachers are required to align instruction more closely with state and national standards, the ability to communicate effectively with students will continue to rise. Research showed that proper feedback can have a dramatic effect on student achievement, but feedback is only effective if it is communicated in a way that the students hear and understand what is intended by the teacher (Hattie, 2009). Never before has there been such urgency for educators to ensure that students are performing at a high level of proficiency indicating acceptable achievement.

While current research suggests what practices and characteristics positively impact student achievement, many students continue to perform poorly. Reeves (2005) stated that

despite the fact that some educators are implementing many best practices, there are some instances where student performance is still low. Because some students continue to perform poorly, further research is needed to continue to add to the body of knowledge with the aim of helping more students attain proficiency. Until all students are performing at a proficient level, more research must be done in this area to gain an understanding of what will work with all students.

Research Question

The following research question was examined throughout this study:

What is the relationship between a teacher's ability to communicate with students and student achievement?

Research Hypotheses

The following hypotheses were used to inform this study. They are written in null form:

1. There is no significant difference ($p < .05$) in personality strengths between teachers and easy students.
2. There is no significant difference ($p < .05$) in personality strengths between teachers and difficult students.
3. There is no significant difference ($p < .05$) in personality strengths between easy and difficult students.
4. There is no significant difference ($p < .05$) in GPA between easy and difficult students.
5. There is no significant difference ($p < .05$) in reading MEAP scores between easy and difficult students.

6. There is no significant difference ($p < .05$) in math MEAP scores between easy and difficult students.
7. There is no significant difference ($p < .05$) in student achievement regionally between easy students.
8. There is no significant difference ($p < .05$) in student achievement regionally between difficult students.
9. There is no significant difference ($p < .05$) in student achievement between GPA and MEAP scores.

Definition of Terms

The following terms was operationally defined for the purpose of this study as:

- Difficult students: Students with whom teachers identify as having difficulty communicating.
- Dreamer: A personality type whose character strengths are reflective, imaginative, and calm. Their psychological need is solitude (Kahler, 2009).
- Easy students: Students with whom teachers identify with communicating easily.
- Persister: A personality type whose character strengths are dedicated, conscientious, and observant. Their psychological needs are recognition of work and conviction (Kahler, 2009).
- Promoter: A personality type whose character strengths are persuasive, adaptable, and charming. Their psychological need is incidence (i.e., they are action oriented centering their attention on quick payoffs) (Kahler, 2009).

- Psychological needs: “Born with attention and motivational desires that require being met in an individual for effective and productive function” (Kahler, 2009, p. 50).
- Reactor: A personality type whose character strengths are compassionate, sensitive, and warm. Their psychological needs are recognition of person (Kahler, 2009).
- Rebel: A personality type whose character strengths are spontaneous, creative, and playful. Their psychological needs are contact (Kahler, 2009).
- Workaholic: A personality type whose character strengths are logical, responsible, and organized. Their psychological needs are recognition of work and time structure (Kahler, 2009).

Assumptions

This study hinges on the following assumptions:

1. Teachers communicate with some students easily, while others are more difficult.
2. Teachers and students have preferred ways to communicate.

Delimitations and Limitations

Delimitations

This study was delimited in several ways. Delimitations include:

1. Students and teachers were contacted to participate from five regions in the state of Michigan.
2. Schools included in this study were public schools. Private and charter schools were excluded for the purposes of this study.

3. The teachers were delimited to those who teach seventh grade math or English language arts (ELA).
4. The students were delimited to those chosen by their teacher as easy or difficult to communicate with using criteria chosen by the teacher.
5. Math and reading were chosen because the math and reading MEAP test is given in third through eighth grades in the state of Michigan.
6. Seventh grade was chosen because it is typically the intermediate grade in the middle school. It is usually not the first or last grade level students attend at middle school or junior high.

Limitations.

1. The test sample size was a limitation because there are a limited number seventh grade teachers and students who were willing to participate in a study in the state of Michigan.
2. Teacher bias may have impacted the study when choosing students as easy or difficult.

Theoretical Constructs

A large focus in schools has been dedicated to the goal of helping all students reach a high level of proficiency. Due to pressures of success, many educators rely on research-based instructional strategies and best practices in the classroom. One instructional strategy, “setting objectives and providing feedback” frames this study (Marzano, et al., 2001, p. 92). A common goal for which all educators strive is to move all students towards proficiency. Marzano (2007) stated “goal setting and feedback used in tandem are probably more powerful than either one in isolation” (p. 12). “One perplexing finding from the research literature is that the manner in which feedback is communicated to students greatly affects whether it has a positive or a

negative effect on student achievement” (Marzano, 2006, p. 6). The ability to communicate clearly and direct the goals of learning to students is likely to positively impact student achievement. Educators deliver feedback to students continuously throughout the school day. Providing students with specific feedback that addresses individual differences in communication styles can give us insight into the most effective manner in which to provide feedback to students.

Organization of the Study

This study consists of five chapters. Chapter One outlined the topic providing background information, the research question and hypotheses, and the purpose of the study. Chapter Two delves into a review of literature that is specifically aimed at informing the reader about the problem and research question to be studied. Chapter Three contains the method in which the researcher will conduct the study. It will discuss the study design including the instrument used and how the data was collected and analyzed from the test sample. Chapter Four will be a presentation and analysis of the data collected from the study. Chapter Five will include the conclusions and recommendations.

CHAPTER II

REVIEW OF LITERATURE

There is a great deal of literature focused on the importance of education, best practices, and current research-based strategies to use in schools to promote student achievement. This chapter is a review of the literature related to the research question: What is the relationship between a teacher's ability to communicate with students and student achievement? It will discuss in detail relevant areas of research related to this study. It will begin by examining the current state of American education. The focus of this section will be on the major concerns with the U.S. education system. The next section will focus on current best practices in education and what research suggests about what works to help students become more successful in schools. A large emphasis will be placed on research surrounding goal setting, student feedback, differentiated instruction, and communication. These sections will help confirm why it was important to test the relationship between a teacher's ability to communicate with students and student achievement.

The scope of this topic was concentrated around the theoretical construct that frames this study, "setting objectives and providing feedback" (Marzano, et al., 2001, p. 92). The criteria for the literature included in this review were determined based on whether or not the concept corresponded with the notion that communicating clear goals to students and communicating specific feedback must be considered when discussing student achievement. In the American education system, student success in the form of achievement is the foremost concern to all stakeholders. The pressures educators encounter due to the high expectations regarding student proficiency have never received the intense focus that they do at the present time. Success for all students is the expectation. While there is a wealth of research about best practices that could

have been incorporated in this literature review, the content was limited to focus around the concepts of communicating goals and feedback to students.

A Review of the Importance of Education

American schools today

Education is the foundation of the American dream. It is the great equalizer. It can put students from various backgrounds on a level playing field for the current competitive job market. In the U.S., getting an education is not a privilege, but it is the right and a requirement of all school-age children. Education impacts the quality of life for individuals, but the residual effects have a large bearing on society, as well. According to the Governors Association, et al. (2008):

Education is a tremendously important lever for ensuring competitiveness and prosperity in the age of globalization, albeit not the only one. Recent economic studies show that high skills lead to better wages, more equitable distributions of income, and substantial gains in economic productivity. Higher math performance at the end of high school translates into a 12 percent increase in future earnings. If the United States raised students' math and science skills to globally competitive levels over the next two decades, its GDP would be an additional 36 percent higher 75 years from now. (p. 5)

Even with all of the current research aimed at moving students toward proficiency, the U.S. is still falling short in educating all children according to the expectations of federal legislation, such as NCLB. Unfortunately, many students graduate from high school, leaving school unprepared for college or the workforce. ACT (2005) clearly delineated this state of affairs:

Too few students are ready for college level coursework, based on ACT's national readiness indicators. A mere 26 percent of ACT-tested high school graduates met ACT's College Readiness Benchmark demonstrating their readiness for their first credit-bearing college course in Biology, based on the 2003-2004 results of the ACT Assessment... Just 40 percent are ready for their first course in college Algebra, and, while better, still only 68 percent are ready for college coursework in English Composition. (p. 1)

Furthermore, students are not excelling in the subjects that matter most. Not educating students to a high level of proficiency can have a devastating effect on American society. Not preparing students for college or the workforce can have a devastating effect on the economy. The lack of contribution is draining the resources that are available to those who need them. "And as we have also seen, students who aren't ready for college or work are less able to participate in, and contribute to, an increasingly global economy" (ACT, 2006, p. 23). The U.S. is currently in a crisis that can create significant damage to the democratic society and jeopardize the American status in a global economy.

The globalization of the world has caused a large shift in the skills students need to be successful. The Conference Board, the Partnership for 21st Century Skills, Corporate Voices for Working Families, and the Society for Human Resource Management (2006) found:

Improvements are needed in the readiness of new workforce entrants, if "excellence" is the standard for global competitiveness. While the employer respondents report that some new workforce entrants have "excellent" basic knowledge and applied skills, significant "deficiencies" exist among entrants at every educational level, especially those coming directly from high school. (p. 11)

There is a new set of abilities required to function in the globalization of today's world (Pink, 2006). "Schools need to prepare students for the 21st century. This preparation requires new sets of skills, new ways of thinking, and new learning environments that foster collaboration, problem solving, and creativity" (Simmons, 2010, p. 50). The industrial skills that required a person to be good at routine work are no longer the skills desired by employees. The routine jobs have been traded in for those that require a person to be able to solve problems, work independently, be self-sufficient, and constantly adjust to the changing needs of a fast-paced, global society. Danielson (2007) explained:

Competitive industries in the 21st century will be those whose workers can solve complex problems and design more efficient techniques to accomplish work. Furthermore, a democratic society depends on an educated citizenry both to make informed choices at the ballot box and to discharge the complex responsibilities of serving as a juror. To be sure, much basic knowledge is important for students to understand. But deep conceptual understanding—knowledge that lasts longer than the time it takes for a student to pass the test—is also needed. And the skill of evaluating arguments, or analyzing information and drawing conclusions, is critical. (p. 15)

Simmons (2010) proffered that functioning in today's world of globalization requires everyone, including educators, leaders, and students to think differently.

When a society undergoes a fundamental change in its predominant technology, such as the shift from agrarianism to industrialism and from industrialism to the digital age, a prime question regards the school's approach to teaching youngsters how to live in their emerging world. (p. 15)

Students need to be taught 21st century skills at an early age. ACT (2005) suggested that educators “Ensure that career and educational planning activities are begun early, at least by the middle school/junior high school years” (p. 27). High school is too late. “Students need to enter high school with a solid and broad foundation of academic skills” (p. 24). This solid foundation immersed in a thinking culture at an early age is the prerequisite for entering high school.

American students are not ready to be productive citizens in a democratic society. “Our nation is in a readiness crisis. Too few students are prepared to enter the workforce or postsecondary education without additional training or remediation when they graduate from high school” (ACT, 2005, p. 22). The needs are clear. “The business community, as represented in part by this research consortium, is speaking with one voice, calling for higher standards of workforce excellence consistent with the demands of the 21st century” (Conference Board, et al., 2006, p. 12). Success requires 21st century skills. Educating students has now become a game of survival. Educators need to teach students the skills they need to survive in an unknown future. “The new social contract is different: only people who have the knowledge and skills to negotiate constant change and reinvent themselves for new situations will succeed” (Kay, 2010, p. xvii).

As the priorities of the American education system continue to change, the high stakes for student achievement have increased to keep pace with a sense of urgency as never before seen in schools. Koeze (2007) stated, “Not only were schools expected to show improvement in test scores overall, schools were also expected to show documented improvement for every child testing within the system” (p. 1). Disruption innovation theory suggests that while schools continue to make improvements, it is no surprise that education is falling short on student success considering that the goals in education continue to shift focus (Christensen, et al., 2008).

Success looks different than when many teachers were in the grade they currently teach. The skill set to success has changed toward those skills needed in the 21st century. Education needs to keep up with the changing needs of society. In reference to action steps that need to occur to keep the U.S. competitive in this global economy, the focus needs to shift to individual students. Christensen, et al., (2008) believed that disruptive innovation theory “provides the framework for school leaders, administrators, politicians, teachers, parents, and students to migrate to a student-centric classroom” (p. 65). Other countries that are focused on teaching the skills of the 21st century have already adopted the practice of meeting individual student needs for the students that are in their education system. The National Governors Association, et al., (2008) cited:

Some top-performing countries have adopted policies to ensure that every student succeeds by monitoring students’ progress and intervening to prevent them from falling too far behind.... The goal is to identify any student who is having difficulty at a particular point in time and get that student caught up and able to handle a rigorous classroom curriculum. (p. 5)

While many countries do not educate all children like in the U.S., the high expectations of NCLB are the same for all students. Teachers are required to teach all students the skills of the 21st century to be successful in life. If the U.S. is going to keep pace with the global economy, educators need to take notice of what is working in other top-performing countries and begin to employ those strategies.

NCLB

As education has evolved, the accountability and responsibility of educators to get students to a high level of proficiency have increased. “The *No Child Left Behind Act of 2001* is rooted in the theory that schools must be held accountable for student performance” (Williams,

2011, p. 18). Providing an education formerly meant providing students an opportunity to learn. With the implementation of NCLB during the Bush administration, there was a large shift from merely providing an opportunity to the responsibility of getting students to meet the prescribed benchmarks. Since the implementation of NCLB, the focus of education has shifted from a product-oriented to a process-oriented organization. NCLB stated, “The purpose of this title is to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging State academic achievement standards and state academic assessments” (No Child Left Behind Act, Pub. L. No. 107-110, § 1001, 115 Stat. 1426, 2002). Furthermore, NCLB demands:

Holding schools, local educational agencies, and States accountable for improving the academic achievement of all students, and identifying and turning around low-performing schools that have failed to provide a high-quality education to their students, while providing alternatives to students in such schools to enable the students to receive a high-quality education. (No Child Left Behind Act, Pub. L. No. 107-110, § 1001, 115 Stat. 1426, 2002)

The expectations have been set at a level that is unprecedented in the U.S. The accountability that the NCLB legislation requires is based on the assumption that all students can reach proficiency. Williams (2011) described:

The 100% proficiency requirement of NCLB proffers the theory that every student can reach a specified level of performance. It holds schools accountable for every student by requiring schools meet AYP targets within student subgroups. Students with disabilities, ethnic groups, English as a second language students, and economically disadvantaged students comprise the subgroups defined under NCLB. (p. 34)

The goals for students are specific, and the expectations for educators are the same: No child shall be left behind. The turnaround time to get all students to proficiency is fast approaching in 2014. Adequate Yearly Progress (AYP) must be met as a requirement of NCLB.

Each State shall establish a timeline for adequate yearly progress. The timeline shall ensure that not later than 12 years after the end of the 2001–2002 school year, all students in each group described in subparagraph (C)(v) will meet or exceed the State’s proficient level of academic achievement on the State assessment. (No Child Left Behind Act, Pub. L. No. 107-110, § 1111, 115 Stat. 1426, 2002)

If schools fail to meet the AYP requirements set forth in NCLB, then consequences will result as described by Fischer, Schimmel, and Stellman (2007):

Schools that fail to meet AYP for two consecutive years must be identified as needing improvement, must be provided technical assistance, and must allow their students to participate in a public school choice plan. There are increasingly significant consequences for schools that continue to fail to meet AYP. After three years, students should receive “supplemental services”; after four years, “corrective actions,” such as replacing school staff or implementing new curriculum, are required; and, after five years, the school must be “restructured,” including a state takeover or reopening as a charter school. (p. 441)

With the passing of NCLB, many changes occurred. The involvement of the federal government in education has been more significant now than it has in the past 35 years (Fischer, et al., 2007). The new requirements prompted much discussion surrounding reform designed specifically to increase student achievement.

The need to increase standards has been established due to the increased demand of higher level skilled workers. Students need to be prepared for their future after graduation whether it is at a college or in the workforce. The U.S. has responded to these rising needs with the expectation of increased rigor through NCLB. The increased pressure and accountability to create successful students and guide them all to proficiency has established a strong need to use research-based strategies and best practices in education.

A Review of Best Practices

Best practice is a term that is used in many ways in the field of education. “If a professional is following best practice standards, he or she is aware of the current research and consistently offers clients the full benefits of the latest knowledge, technology, and procedures” (Zemelman, et al., 2005, p. vi). There is not one list of best practices to which all educators or researchers subscribe. For the purposes of this study, best practices means widely accepted strategies to use with students in the classroom. In addition to being widely accepted, these strategies are adequately supported by research and are highly correlated with success in the classroom (i.e., demonstrates the likelihood of proficiency through academic achievement). While there is a litany of strategies that fit this description, this review will focus on a few high-yield strategies. They include goal setting, providing student feedback, differentiated instruction through individualization, and effective communication. While many strategies can be considered high-yield, the strategies chosen fit the theoretical construct upon which this study is built.

Goal setting

Goal getting is an essential part of teaching children. Individual teachers have specific learning goals students must accomplish to be considered proficient, or successful. Content standards and high-stakes testing have a strong influence on educators' learning goals for their students. The state-mandated standards dictate expectations especially in the areas of math and ELA. Success on these standards requires that students have an understanding of what success looks like. This understanding is critical. "Establishing and communicating learning goals are the starting place. After all, for learning to be effective, clear targets in terms of information and skill must be established" (Marzano, 2007, p. 9). Furthermore, goals are important for more than just establishing direction. Hattie (2009) stated:

Goals serve a variety of functions that are essential in the teaching process: goals regulate action and they explain the nature of the link between the past and the future; and goals assume that human action is directed by conscious goals and intentions, although they do not assume that all human action is under fully conscious control. (p. 164)

It is important that the specific goals and tasks required of students are communicated effectively by the individual teacher.

First, setting goals appears to have a notable effect on student achievement in its own right....Second, specific goals have more of an impact than too general goals....Third, goals must be at the right level of difficulty for maximum effect on student achievement. (Marzano, 2010, p. 13).

Communication must coincide with goal setting in order to be effective. If goals are not communicated clearly to the student, then the positive effects of setting goals will not impact student achievement. "The teacher should convey what the students will be learning, why it is

important, and what the students will be doing to achieve the goals” (Danielson, 2007, p. 77). Establishing goals influences student learning by more than just clarifying the end result of a task. Clear goals aid in student engagement. “For students to become engaged in learning, they must receive clear directions and explanations” (Danielson, 2007, p. 77). The engagement of students through establishment of clear goals can significantly impact student achievement.

Feedback

While goal setting is an important component that has a strong influence on student achievement, goal setting alone will not translate into successful students. “But establishing and communicating learning goals alone do not suffice to enhance student learning” (Marzano, 2007, p. 9). In addition to using goal setting as a strategy to direct students toward success, additional best practices in the classroom are a necessary component. “Thus, when feedback is combined with effective instruction in classrooms, it can be very powerful in enhancing learning” (Hattie, 2009, p. 178). Effective student feedback is a strategy that works well independently of other strategies, but it is more powerful when it is used alongside other best practices. Hattie (2009) further opined:

If teachers can encourage students to share commitment to these challenging goals, and if they provide feedback on how to be successful in learning as one is working to achieve the goals, then goals are more likely to be attained. (p. 165)

The effectiveness of goal setting and effective feedback are increased when they are paired together in a classroom.

With the goal of helping students reach a high level of proficiency, teachers must be well versed in the best practices and strategies that work with children. Feedback is no exception. “The most powerful single modification that enhances achievement is feedback. The simplest

prescription for improving education must be ‘dollops of feedback’” (Hattie, 1992, p. 9).

Teachers need to be able to provide meaningful feedback that promotes growth for students. “To be effective, feedback needs to be clear, purposeful, meaningful and compatible with students’ prior knowledge, and to provide logical connections” (Hattie, 2009, pp. 177-178). In order for feedback to be effective, it must be given in a timely manner as well (Marzano, et al., 2001). In schools, feedback comes in many forms.

Feedback can be given formally or informally in group or one-on-one settings. It can take a variety of forms. As the preceding definitions illustrate, its most important and dominant characteristic is that it informs the student, the teacher, and all other interested parties about how to best enhance student learning. (Marzano, 2010, p. 3)

Feedback may be in the form of graded student assessments, daily interaction with teachers through verbal and written communication, feedback from other students, or other various sources of feedback. The critical component that is essential to the fidelity of effective feedback is its use with other research-based strategies. “Feedback can only build on something; it is of little use when there is no initial learning or surface information” (Hattie, 2009, p. 178). Consequently, feedback alone will not guarantee that students will become proficient.

In addition to giving feedback alongside other research-based best practices, teachers need to find a way to connect with their students so that the feedback teachers provide can be understood clearly by students. Understanding individual differences in students can help educators communicate feedback that students need to promote and foster growth. Connecting with students through communication is necessary for students to understand the message intended by the teachers. Providing feedback must be clearly communicated in a way that students understand what the teacher intends. If communication has not taken place, then the

positive general effect of feedback on student achievement is not felt because expectations have not been relayed. Communication is a fundamental component that is necessary for feedback to positively impact student achievement.

Differentiated instruction through individualization

Meeting the needs of students is of great concern to teachers whose goals include getting all students to proficiency. “Instead of delivering a one-size-fits-all education, schools should customize the education to fit each child's way of learning” (Simmons, 2010, p, 55). The responsibility to facilitate learning in a customizable way to accommodate all the varying needs of students typically falls directly on classroom teachers as described by Danielson (2007):

It is well known—certainly by teachers—that every teaching situation is unique. Each day, in each classroom, a particular combination of factors defines the events that occur. The personalities of both teacher and students interacting with one another and with the content create a unique environment. (p. 21)

The teacher in the classroom is what can make the difference as to whether or not students are successful. For a teacher to be able to reach all students in a classroom setting, each lesson plan cannot be directed toward the majority of the class, rather created with the mindset that all students in a class must be academically successful. This expectation is a very high standard to meet and not easily attained, but it is the standard to which all teachers are being held accountable. Koeze (2007) explained:

No Child Left Behind has forced districts to view students as individuals, not as a classroom of students as a whole. In classrooms where one lesson is designed for all learners, limits are placed on students’ achievement. Students who are advanced

academically are left behind because they are under-challenged, and students who may be struggling are left frustrated and confused. (p. 3)

The success of districts falls on a teacher's ability to teach all students. The need for differentiated and individualized instruction is great and well supported through legislation and best practices. Tomlinson and Allan (2000) defined differentiation as the following:

In the context of education, we define *differentiation* as a teacher's reacting responsively to a learner's needs. A teacher who is differentiating understands a student's need to express humor, or work with a group, or have additional teaching on a particular skill, or delve more deeply into a particular topic, or have guided help with a reading passage—and the teacher responds actively and positively to that need. Differentiation is simply attending to the learning needs of a particular student or small group of students rather than the more typical pattern of teaching the class as though all individuals in it were basically alike. (p. 4)

Fuchs and Fuchs (2006) acknowledge that an individualized program is necessary when meeting the needs of struggling students. In reference to a tiered intervention approach, they stated, "Its popularity among practitioners is no doubt due in part to its idiopathic nature: For each child, an effort is made to personalize assessment and intervention" (p. 95). A focus on individual students is no longer a strategy used when an educator is going above and beyond. It is a necessary part of moving all students toward proficiency. "The best performing school systems manage to provide high-quality education to all students" (OECD, 2010, p. 9). Individualization in the classroom is essential for challenging all students to learn to their full potential.

To meet the needs of all students in a classroom, a teacher needs to be able to design instruction so that students who struggle to achieve proficiency can be successful in the same

classroom as those who learn content easily. Early intervention through individualized instruction will eliminate or reduce the number of struggling students. This requires a teacher to facilitate a learning environment for all students to make growth. “Systems that show high performance and an equitable distribution of learning outcomes tend to be comprehensive, requiring teachers and schools to embrace diverse student populations through personalized educational pathways” (OECD, 2010, p. 15). Today’s student population represents diverse needs and backgrounds, and there has never been a time in the U.S. where there is such a large variance among students. “Teachers who provide varied avenues to learning understand that most students can learn most important things if they can do it in a way that works for them” (Tomlinson, Brimijoin, & Narvaez, 2008, p. 8). In addition to meeting the needs of an academically diverse population, increased accountability expects teachers to push their students to reach their potential. “The stated goal of the NCLB Act is to close the achievement gap with accountability, flexibility, and choice, so that no child is left behind” (Thousand, Villa, & Nevin, 2007, p. 4). Teaching students at an individual level is required through legal mandates, but more importantly, the future of American society depends on it. “Classrooms in which differentiation is taking place may help to close the achievement gap that has been prevalent for years in American schools” (Koeze, 2007, p. 3). The importance of the ability of a teacher to differentiate instruction in the classroom has a direct impact on whether all students have an opportunity to make growth in their learning. Meeting individual student needs is a fundamental best practice in the classroom, but differentiated instruction alone will not guarantee the success of all students.

Communication

Communication is the ability to receive information as it was intended from a source. The ability to communicate effectively is a best practice that is paramount to the success of teachers and students in the classroom. It is a skill that is crucial to communicate needs, provide feedback, and foster growth in students. This continues to be necessary in education as there is a shift from a one-size-fits-all curriculum to a much more individualized and specialized dynamic in education. The focus in education is moving to an individualized needs-based system focused on formative and summative assessments. Teacher responses from assessments are one just way a teacher communicates feedback to students. The need to be able to communicate understanding to students has increased with demands for accountability. Communication is necessary if there is any hope of meeting and reaching students' goals.

Communication in the classroom helps ensure the fidelity of instructional practices. Setting instructional goals and providing timely and specific feedback along with individualized instruction can give students an opportunity to achieve high standards in the classroom, and communication is a prerequisite for success to occur. "Even if learning targets and information needs are clear and the information gathered is precisely accurate, an assessment can fail to achieve its learning end if the results are not communicated effectively to the intended user(s)" (Stiggins, Arter, Chappuis, & Chappuis, 2006, p. 17). Preparing educators to become effective communicators in their role as change agents has become commonplace as accountability and the stakes in education continue to rise. "Teachers demonstrate the clarity and accuracy of their communication primarily through classroom performance" (Danielson, 2007, p. 79). An increase in accountability through NCLB has made the importance of communicating learning goals and providing feedback to students an obligation of the classroom teacher.

The U.S is currently in a complex time of educational change, and the ability to be able to communicate the complexity with which needs must be met is increasingly important. “The effective use of accountability data requires the commonplace use of research, assessment, and communication by teachers and school leaders” (Reeves, 2005, p. 175). When communicating with students, educators must send the information to students in a way that students can understand what is meant. While goal setting and providing effective feedback to students can help them achieve success, if the goals are not clear and feedback is not heard through clear lines of communication, then the strategies will not positively impact student achievement. “Another element of communication with students is clarity of directions and procedure. When students work independently or in small groups, the information that they receive must be clear” (Danielson, 2007, p. 78). A good teacher must be adept at communicating with all of his or her students in a way that gives them the best chance at clearly understanding the intended message.

Communication can come in many forms. An effective teacher will use a repertoire of communication strategies to help students learn. Stiggins, Arter, Chappuis, and Chappuis (2006) explained:

Whether we communicate about student learning by means of a report card, a written summary, a developmental continuum, or a personal conference, certain conditions are required for effective communication: a shared understanding of the learning targets, accurate information, clearly define symbols, and communication tailored to the audience. (p. 292)

Students have different personality types and communication styles. Teachers can find it easy to communicate with some students and difficult to communicate with others due to these student differences. According to Gilbert (2012):

It is important that teachers understand student personality types and how personality types affect learning. Their personality types affect how well teachers analyze student needs, how much time they spend on instruction and management, how much time students engage in learning, and the level of student achievement. (p. 4)

A teacher who is effective at communicating with students has the ability to communicate in a variety of ways. “A teacher must be able to connect with students in order to motivate them; thus, increase the likelihood that learning will occur” (Bailey, 1998, p. 49). A teacher must have the ability to shift communication styles to connect with all students. Connecting with students is vital to student success.

Process Communication Model

Kahler’s (2009) Process Communication Model (PCM) is a model that describes how people view the world through different perceptions. These perceptions are personified through six different personality types and impact how individuals prefer to communicate with others.

There are six distinct personality types– REACTOR, WORKAHOLIC, PERSISTER, DREAMER, REBEL, and PROMOTER. Each of us develops a predominant personality type early in life and that does not change. It is our basic Personality Type all our lives. Each personality type is OK. No one type is better or worse, more smart or less smart, more OK or less OK than any other. (Kahler, 2009, p. 9)

All individuals have a personality structure that can contain elements of all of the personality types to varying degrees (i.e., the amount of personality strength available for each personality type). Individuals have one personality type that is their strongest part, but they can exhibit characteristics from the other personality types depending on the amount of personality strength available. A person whose predominant personality type is a Reactor has character strengths that

are compassionate, sensitive, and warm. Their psychological needs are recognition of person. They view the world through emotions (Kahler, 2009). A Workaholic is a person whose character strengths are logical, responsible, and organized. Their psychological needs include recognition of work and time structure. A Workaholic views the world through their thoughts (Kahler, 2009). A Persister's character strengths are dedicated, conscientious, and observant. Their psychological needs include recognition of work and conviction. They view the world through their opinions (Kahler, 2009). A Dreamer is a person whose character strengths are reflective, imaginative, and calm. Their psychological needs include solitude, and they view the world through inactions (Kahler, 2009). Rebel character strengths include spontaneity, creativity, and playfulness. Their psychological needs include contact. Rebels view the world through reactions (Kahler, 2009). Promoters are persuasive, adaptable, and charming. Their psychological needs are incidence. Promoters view the world through actions (Kahler, 2009).

An important key to communication is receiving the same message that is relayed from the sender. If a different message is understood than is sent, communication did not take place. "Most everyone prefers a certain channel. When this channel isn't offered to a person, he or she, without awareness, may not 'communicate,' and gets into one of the degrees of miscommunicating" (Kahler, 2009, p. 42). Educators are no exception. "Students whose learning needs do not match teacher delivery methods are often stymied in school" (Gilbert, 2010, p. 1). Educators have preferences in communication styles when they are interacting with students. Bradley, et al., (2006) posed an interesting question:

Most teachers are strong in Persister and Workaholic energy, and many elementary school and special education teachers are often strong in their Reactor as well. In class they tend to teach the way these three types of students learn and manage their

classrooms in ways that these three types can relate to. What about the other three types—Dreamer, Rebels, and Promoters? These are the types of students whom most educators have difficulty with, and they often need more strategies to be able to reach them. (p. 7)

Due to communication differences, it is not a surprise that students who communicate differently than educators are often those students who struggle with academic success. “Students at risk tend not to be strong in the same characteristics of educators (teachers and administrators) that work with them” (Gilbert, 2012, p. 47). It is a responsibility of the educator to try to communicate effectively with all students to encourage academic achievement.

Kahler’s model has six different personality types of which everyone has varying degrees of energy for each type. Each Personality Type has a preferred way of communicating with other people.

In order to communicate effectively, then, Kahler, suggests that people learn to speak the “languages” that other people prefer. His research shows that doing so will significantly increase the likelihood that the content of their “message” is heard and acted on. (Pauley, Bradley, & Pauley, 2002, p. 2)

When educators communicate in the preferred channel of communication with students, they increase the likelihood of connecting with those students, thus increasing the quality of feedback given to students to promote proficiency.

Conceptual Model

The main emphasis that that influences American schools is success for all students. With educators pursuing the expectation that all students will become proficient, many best practices in the form of research-based strategies are employed. Best practices promote student

growth and proficiency. Goal setting is an essential component of focusing student learning. Providing student feedback is necessary to foster growth toward an academic goal. Differentiated instruction is a way to help meet individual needs and reach various types of learners in an effort to promote success for all students. As the focus in a classroom becomes more individualized, the number of successful students increases. Focusing on individual learner needs while using best practices is what will most likely ensure student success. Communication is necessary in all settings for student success. The ability to communicate goals and feedback while differentiating instruction to meet individual needs is an essential component that must be addressed in order for educators to have a chance at getting all students to proficiency. Teaching all students to become successful learners is not an easy task. It is an art that requires an arsenal of techniques and strategies along with the understanding of students to know when and how to meet individual needs.

Educators layer research-based strategies to increase their effectiveness in teaching in order to guide more students toward proficiency. Layering strategies, or incorporating a best practice in tandem with other best practices, helps to give fidelity to and increase the effectiveness of instructional practices. Figure 1, a conceptual framework for successful students in American schools, shows that the NCLB legislation requires that all students become successful. Many students will exhibit success in the form of proficiency if a teacher employs a single best practice in the classroom, but as more strategies are utilized simultaneously, more students become proficient. If a teacher uses the best practices of goal setting, providing student feedback, and differentiated instruction simultaneously, learning is more focused on individual needs and more students are led to success.

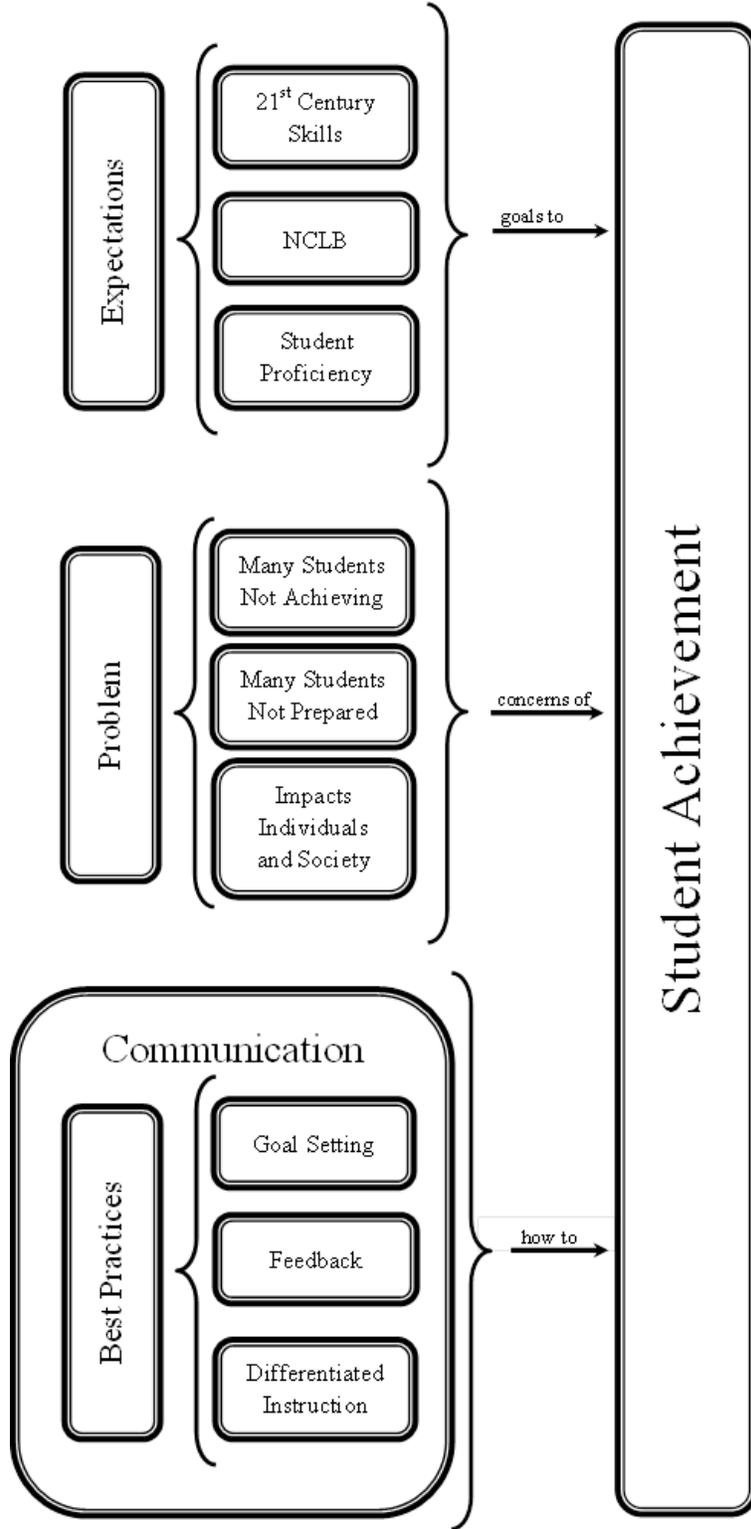


Figure 1. Conceptual framework for successful students in American schools

The framework also shows that effective communication is a necessary best practice for student success. Clear goals and feedback must be communicated with students. While it is easy to communicate with some students in the classroom, there are other students who are difficult to reach because of differences in personality types. If teachers can find a way to communicate more effectively with all students using their preferred ways of communicating, then more students are likely to reach the level of proficiency required by federal and state laws. Using a preferred way of communicating allows teachers to individualize instruction and connect with more students. To have high-achieving students, incorporating best practices is a requirement, but it still does not guarantee that all students will be successful. Coupled with high-yielding instructional strategies, communication is a key to student success. “That is, no single role by itself is sufficient to guarantee student learning, but take one out of the mix and you probably guarantee that students will have difficulty learning” (Marzano, Marzano, & Pickering, 2003, p. 4).

Conclusion

The ability to communicate effectively with students can help educators determine what type of instructional delivery and feedback will be most beneficial for individual students. Furthermore, “No Child Left Behind has forced districts to view students as individuals, not as a classroom of students as a whole. In classrooms where one lesson is designed for all learners, limits are placed on students’ achievement” (Koeze, 2007, p. 3). The Michigan Department of Education stated that a reform priority for increased student achievement is to “Support ‘any time, any place, any way, any pace’ initiatives that help schools to personalize learning for every student” (Michigan Department of Education, 2011, p. 1). As accountability increases, so do the

high expectations placed on teachers in the classrooms. Legislation is clear in assuming that it is the teacher's responsibility to get all students to proficiency.

What is required, then, is that teachers have a repertoire of strategies from which they can select a suitable one for a given purpose. No single approach will be effective in every situation, for each set of instructional purposes, or with all individuals or groups of students. (Danielson, 2007, p. 24)

This is especially true for those learners who struggle and are at risk of failing due to factors beyond the student's control. "At-risk learners need a supportive classroom environment, one that caters to their learning preferences" (Gilbert, 2005, p. 4). At a time of increasing accountability in education in response to NCLB, educators must be well versed in addressing how all students learn. "No one approach is a 'one size fits all.' But some approaches will be better suited to certain purposes than others. Making good and defensible choices is the hallmark of a professional educator" (Danielson, 2007, p. 25). Teachers must be able to communicate effectively with students to set goals and give valuable feedback. Lesson plans must also incorporate best practices, such as meeting individual needs through differentiated instruction, so that the achievement of all students is positively impacted. Teachers must be able to communicate effectively with all students to understand how to motivate them and keep up with their changing needs in the classroom.

CHAPTER III

METHODOLOGY

American educators are feeling the pressure to keep pace in the global economy. Because of the expectation to stay competitive, accountability in American education has never been higher. “With the passage of the No Child Left Behind Act in 2001, all elementary school students are now expected to meet educational standards, and schools are now held accountable for their effectiveness at helping students meet this goal” (ACT, 2006, p. 8). As American education responds, a concentrated effort on student achievement and a focus on individualization is a natural progression of expectations. Extra attention and scrutiny have resulted from the fact that many students are not ready to enter college or the workforce. “Even fewer students are ready for college and work in all three academic areas— English, mathematics, and science” (ACT, 2005, p. 3). Preparing students for success in school must begin at an early age, and learning should be focused on the skills necessary to be successful in the 21st century. One of the necessary skills is the ability to think clearly and to solve problems in the workplace. “Improving college readiness is crucial to the development of a diverse and talented labor force that is able to maintain and increase U.S. economic competitiveness throughout the world” (ACT, 2005, p. iii). As the pursuit to improve student achievement continues, educators are expected to address the varying needs of all individuals in a classroom. Best practices suggest that educators can meet individual needs through using differentiated instruction, communicating goals and expectations clearly to students, and providing students with effective feedback to foster growth.

Due to the need to help students be successful in the 21st century, more research is necessary to help educators understand the link between best practices and student achievement.

The results of this study will inform teachers as to what practices work well with students. It offers to educators the knowledge of how to connect best with all students in the classroom. The purpose of this study was to determine the relationship between a teacher's ability to communicate with students and student achievement. The rest of this chapter provides a detailed description of the sampling methods, instrumentation, and procedures for collecting and analyzing data. In this quantitative study, seventh grade middle school teachers in Michigan were asked to choose ten students, five with whom they communicate easily and five with whom they had difficulty. Efforts were made to get an equal number of math and ELA teachers. The personality strengths of both the teachers and students were determined by the PPI.

Research Question

The following research question was examined throughout this study:

What is the relationship between a teacher's ability to communicate with students and student achievement?

Research Hypotheses

The following hypotheses were used to inform this study. They are written in null form:

1. There is no significant difference ($p < .05$) in personality strengths between teachers and easy students.
2. There is no significant difference ($p < .05$) in personality strengths between teachers and difficult students.
3. There is no significant difference ($p < .05$) in personality strengths between easy and difficult students.

4. There is no significant difference ($p < .05$) in GPA between easy and difficult students.
5. There is no significant difference ($p < .05$) in reading MEAP scores between easy and difficult students.
6. There is no significant difference ($p < .05$) in math MEAP scores between easy and difficult students.
7. There is no significant difference ($p < .05$) in student achievement regionally between easy students.
8. There is no significant difference ($p < .05$) in student achievement regionally between difficult students.
9. There is no significant difference ($p < .05$) in student achievement between GPA and MEAP scores.

Population and Sample

The sample sought after was a total of 20 teachers and 200 students. A group of seventh grade teachers each were asked to choose five students that they had difficulty communicating with and five students that they communicated with easily. Some of the seventh grade teachers taught math, and some of the seventh grade teachers taught ELA. The content areas of math and ELA were chosen to get a more a generalizable measure of middle school students in the state of Michigan. Another reason why math and ELA were chosen is because math and reading are the two subject areas that are currently used as a part of AYP. Seventh grade was chosen because it is early enough to make an impact on whether or not students are successful in college or work (ACT, 2005). High school is too late to begin teaching students the skills they need to be successful in the 21st century. “We must recognize that this crisis cannot be resolved at the high

school level alone” (ACT, 2005, p. 24). Seventh grade teachers and students were used so that generalizations can be made about how to connect with a middle school-age population.

Elementary schools were not chosen because the PPI is not valid for elementary-age students.

Since it is not feasible to test the entire population of all seventh graders in the state of Michigan, students were chosen from public middle or junior high schools that feed into high schools having between 217 and 910 students. To guide students towards success after high school, ACT (2005) suggested that educators need to “ensure that career and educational planning activities are begun early, at least by the middle school/junior high school years” (p. 27). To impact success at the high school level an investigation of middle school practices must be explored. Michigan’s high schools are divided into four classes. They are Class A, Class B, Class C, and Class D. For the 2012-2013 school year, Class A high schools have 911 students and above, Class B has between 449 and 910 students, Class C has between 217 and 448 students, and Class D has 247 students or fewer (Michigan High School Athletic Association, 2012). The criterion for this population was chosen because 217 to 910 students represent Class B and C sized high schools in the state of Michigan. This represents the middle tier of the population, not the largest nor the smallest high schools. Class B and Class C schools were chosen because they are the most similar in enrollment numbers. Ruling out the Class A and Class D population removed outliers from the population sample because schools containing a significantly high or low number of students were eliminated. Middle school or junior high-aged students were chosen because the success of high school students depends on student performance prior to high school. Eighth grade was not chosen because it can be considered high school in some school districts, and sixth grade was not chosen because it could be

considered elementary school in some districts. Seventh grade was the only grade level that consistently existed in a middle school or junior high building.

With the goal of providing a representation sampling of students, efforts were made to gain access to teachers and students from regions across the state. The state was divided into five sections. The Upper Peninsula was one section, and the Lower Peninsula was divided into four sections. Efforts were made to get an equal number of teacher and student participants from each section of the state. U.S. 127 was used to divide the state east and west, and M 46 was used to divide the state north and south resulting in four quadrants in the Lower Peninsula. The four quadrants represent the four sections in the Lower Peninsula. In an effort to make the sample as random as possible, the researcher created a list of eligible school districts each designated to one of the five sections of the state based on geographic location. Each section's list was put into a spreadsheet in a random order. The researcher started at the top of the list in each section and make contact with district administrators to gain permission for the study (see Appendix A for Letter to Administrators). District administrators identified teachers fitting the sample population and reported back to the researcher. The researcher contacted the teachers to determine those who were willing to participate in the study (see Appendix B for Letter to Teachers). Contacts were made until each section of the state had four participating teachers or all potential participants were contacted. A section was considered full if it had two math and two ELA teachers to make a total of four participating teachers. Consent was sought from administrators, teachers, and parents of students to participate in this study. If permission was not given, efforts were made by the teachers to replace those participants.

Instrumentation

The instrument used to gather data regarding personality strengths was the Personality Pattern Inventory (PPI). The PPI was developed by Kahler (1982) to identify personality types and strengths. “The PPI can predict normal and severe distress sequences for the individual. Further research yielded correlations with standard management and communication concepts” (Kahler, 2008, p. 266). Each person has a specific amount of Interaction Span that they have in each of Kahler’s personality types. “One of the more interesting categories generated from the Kahler PPI is Interaction span—the amount of relative energy (on a scale of 100) one has to deal with other personality types” (Gilbert, 1999, p. 252). The Interaction Span was measured and both the teachers’ and students’ energy levels were determined. The PPI determined the individual amount of energy that each person had to interact with other personality types. The PPI has 45 items and was administered electronically (see Appendix C for questions on the PPI).

The personality strengths of both the teachers and students were obtained from the PPI. Students took the student version of the PPI. Obtaining the personality strengths in this study was of importance because it was a measure of the amount of energy available to interact with others. The PPI determined if a person had high or low levels of energy to interact with each of the personality types. For example, if a teacher had high levels to interact with Reactors, Workaholics, and Persisters, and low levels of energy to interact with Rebels, Dreamers, and Promoters, then he or she would likely had difficulty communicating with a student who had high levels of Rebel, Dreamer, and Promoter energy, but low levels of Reactor, Workaholic, and Persister energy. Personality differences occur because of “how we take in and deliver information,” or our perceptions (Kahler, 2009, p. 6). Differing perceptions can cause difficulty when communicating. Reactors view the world through emotions, Workaholics through

thoughts, Persisters through opinions, Dreamers through inactions, Rebels through reactions, and Promoters through actions (Kahler, 2009). By comparing the amount of energy available to interact with other personality types, the researcher determined the ability of a group to communicate with another. In this study, the means of the personality strengths within the teacher group, easy students, and difficult students were compared. Student achievement data were also compared between students who were difficult to communicate with and those whom teachers identified as communicating with easily. Student achievement was measured by GPA and MEAP scores.

Validity and Reliability

The PPI was considered to be both valid and reliable (Kahler, 1982). “Only items with a correlation of greater than .60 (significant at $< .01$) were accepted for inclusion in the final Personal Pattern Inventory” (Kahler, 2008, p. 271). Great measures were used to lend to the credibility of the PPI.

Face, concurrent, and predictive validity are all relevant to the PPI. Face validity refers to the participant’s impression that the PPI measures what he or she thinks, feels, or believes that it did. Concurrent validity refers to the focus of the inventory to produce an assessment of the participant into one of the six Personality Types. Predictive validity refers to the predicting of the participant whether or not he or she will develop a criterion state, such as a given Failure Pattern or new, open Channel of Communication. (Kahler, 2008, pp. 267-268)

Each inventory returned with a degree of confidence signifying the usefulness of the data. If the inventory was returned with a low degree of confidence of validity, below 72, the score was not utilized when the data were analyzed and efforts were made to allow teachers to replace those

students. According to Fraenkel and Wallen (2006), “Reliability refers to the consistency of the scores obtained—how consistent they are from one administration of an instrument to another and from one set of items to another” (p. 157). The PPI is a reliable instrument due to the test-retest method of research (Kahler, 2008).

The use of the PPI is widespread. It has been administered numerous times since its inception and translated and used in many countries (Kahler, 2008). The PPI has been used in counseling, business, education, and many other venues. “The PPI was used by Dr. Terry McGuire of NASA from 1992-1996 in the selection of astronauts and payload specialists because of its accuracy in predicting individual distress sequences as well as assessing compatibility” (Kahler, 2008, p. 266). The use of the PPI gives this study usefulness because the personality strengths were used as the measure for the ability of teachers to communicate with students.

Research Design and Data Collection

Prior to making the initial contact to building administrators, the proper paperwork was submitted to the Institutional Review Board for approval. Sites were chosen by geographic location to give a representation of the state of Michigan. After IRB approval, building administrators were contacted to obtain permission to participate in the study. Teachers were given a consent form to sign giving permission to participate in the study (see Appendix D for Adult Consent Form). Teachers identified five students with whom they had difficulty communicating and five students with whom they communicated easily. Teachers determined their own criteria for which students were labeled as easy and which students were labeled as difficult. They determined their own criteria because the goal of the study was to inform teachers what best practices work best with students that they deem to have had difficulty communicating and verify what worked well with easy students. Teachers were asked to share

the criteria they used to identify students with the researcher. They were asked to email a description to the researcher of how they identified students as easy or difficult (see Appendix E for Teacher Identification Form). Participating students were given consent and assent forms to give permission for participation in the study prior to data collection from students (see Appendix F for the Parent/Guardian Consent Form and Appendix G for Child Assent Form). Students signed assent forms to participate in the study. Parents were given consent forms because all of the students were minors and required consent from parents or guardians to participate in the study.

After all permissions were granted, teachers were debriefed on the expectations of the study. It was explained that teachers would identify students and be responsible for getting parental consent and student assent for participation in the study. Teachers gave the criteria used to identify students to the researcher. The criteria teachers use to identify students were analyzed in Chapter Four. In addition, teachers also took the PPI and guided students through taking the PPI.

After the teachers were debriefed on expectations and all of the required information and forms from both teachers and students were gathered, the researcher sent the login information to take the PPI to the teachers. The PPI was taken online where students and teachers were given a username and password to complete the inventory. The teachers and students completed the inventory by ranking a series of statements that output each participant's personality structure and personality strengths. The results were sent to the researcher from Kahler Communications, Inc. via e-mail.

Teachers were given the web address and codes to access the PPI. Teachers were also given the codes for students so they could take the PPI. The teachers helped students get set up

to take the PPI. A computer lab or access to the Internet was needed. The teacher assisted students in getting to the correct website and logging in properly, but were not asked to assist in completing the PPI. From the PPI, the personality strengths were obtained. After all data were obtained, teachers and students were given an identification number, and any information containing the identification of the participants was destroyed at the conclusion of the study.

Student achievement was measured by GPA for the previous school year and the most recent available MEAP scores in math and reading. GPA and MEAP scores were obtained through building administrators. Both GPA and MEAP scores were used in this study because both measure student achievement differently. In reference to GPA, “It is reasonable to assume that grades are mostly students’ ability to meet teacher expectations” (Gilbert, 2010, p. 9). The MEAP test was used to measure success on a standardized test used to compare student achievement throughout the state of Michigan. All public schools gave the same MEAP test at each grade level that the test was given.

Once the data were obtained, teachers and students were assigned an identification number and the data were entered into a spreadsheet excluding names or any other identifiable information. After all data were analyzed and recommendations and conclusions were made, the results of the study were shared with the participating teachers who are interested. At the conclusion of the study, any information including the identification of the participants was to be destroyed.

Analysis of Data

Data collected in this study were used to determine the relationship between a teacher’s ability to communicate with students and student achievement. The results provide educators with knowledge about what best practices are likely to impact student achievement positively. It

informs teachers about how to communicate best with all students on an individual basis. The ability to individualize instruction in the classroom to impact all students by understanding how to communicate goals and provide feedback can make a significant impact on the number of successful students in the U.S. If more students are successful in the classroom, then more students will be prepared for college or the workforce after they graduate high school. In this study, the mean of the personality strengths within the teacher group, easy students, and difficult students were compared using a t-test. Student achievement was measured by comparing the mean GPA and MEAP scores between the easy and difficult students using a t-test. An ANOVA was conducted to test if there was a difference in student achievement regionally between easy and difficult students. A second ANOVA was conducted to determine if there are differences in achievement indicators between and among groups.

The researcher collected data from teachers and students using Kahler's PPI; MEAP and GPA data were obtained through building administrators. The first three null hypotheses were tested using data gathered from the PPI. The Interaction Span of students and teachers were used to identify personality strengths. The personality strength data were first analyzed using descriptive statistics to get a better understanding of the test sample in this study. Three t-tests were conducted comparing means using SPSS to determine if there was a significant difference between the personality strengths between students and teachers. T-tests for independent samples were used to determine if there was a statistically significant difference between the means of two groups (Fraenkel & Wallen, 2006; Kranzler, 2007). The first t-test compared teachers and easy students; the second t-test compared teachers and difficult students; and the third t-test compared easy and difficult students. Data were analyzed to determine if the researcher accepted or rejected the null hypotheses.

Student achievement data were used to answer the second three null hypotheses in this study. MEAP and GPA data were used to measure student achievement. Data were first analyzed using descriptive statistics to understand more thoroughly the test sample in this study. Three t-tests were conducted comparing means to determine if there was a significant difference between student achievement scores between easy and difficult students. The first t-test compared GPA between easy and difficult students; the second t-test compared reading MEAP scores between easy and difficult students; and the third t-test compared math MEAP scores between easy and difficult students. Data were analyzed to determine if the researcher accepted or rejected the null hypotheses.

ANOVA tests were conducted to determine if there was a difference in student achievement regionally in Michigan. Specifically, an ANOVA was conducted to determine if there was a significant difference ($p < .05$) in student achievement regionally between easy students. Another ANOVA was conducted to determine if there is a difference regionally between difficult students. An ANOVA was used because there were more than two groups being compared (Fraenkel & Wallen, 2006; Kranzler, 2007). Data were analyzed to determine if the researcher accepted or rejected the null hypothesis. If either of the null hypotheses were rejected, then the researcher performed a post hoc comparison of the data using the Tukey HSD to show where there was a statistically significant difference between means. The Tukey HSD was used because it is a common post hoc analysis to determine specific differences (McMillan & Schumacher, 2006).

Student achievement was further compared by testing to see if there was a difference in the procedures used to identify student achievement. The researcher conducted an ANOVA comparing GPA, math MEAP scores, and reading MEAP scores to determine if there was a

statistically significant difference between them. Due to the inverse nature of GPA and MEAP scores, GPA scores were inverted on the 4.0 scale prior to conducting the ANOVA to standardize all measures of student achievement. Scores were inverted by subtracting individual scores from four to convert all achievement measures to the same scale. If the null hypothesis was rejected, then a Tukey HSD post hoc comparison of these data were used to show where there was a statistically significant difference between means. All results are discussed in Chapter Four.

Summary

This chapter described the methodology used in this study. The purpose was to determine the relationship between a teacher's ability to communicate with students and student achievement. A quantitative methodology was employed to analyze the data obtained in this study. The data were obtained through the PPI, MEAP scores, and GPA. They were used to test the null hypotheses to gain insight into the research question. The subjects in this study were math and ELA teachers and the students with whom they communicated with easily or with whom they had difficulty. Chapter Four shows an analysis of these data and will display the results of the study.

CHAPTER IV

ANALYSIS OF THE DATA

The expectations of educators to increase the achievement of all of their students continue to be a topic in education that requires more research. This study was designed to test the relationship between a teacher's ability to communicate with students and student performance in the classroom and on standardized tests. The remainder of this chapter contains the analyses of the data as they relate to the research question. This chapter discusses the test sample and response rate in the study, the demographic characteristics of the research sample, and the presentation of results as related to the research hypotheses.

Sample and Response Rate

Efforts were made to get a total of 20 teachers and 200 students to participate in this study by making contact with administrators, mostly superintendents, from Class B and C public schools, or schools that have between 217 to 910 students, with an equal distribution of the sample from all five regions in the state of Michigan. School administrators provided access and permission to contact middle or junior high school administrators that feed into the Class B and C schools. The eventual sample was nine teachers and 73 students. A group of nine seventh grade teachers each were asked to choose five students that they had difficulty communicating with and five students that they communicated with easily. Response to participate was lower than expected; the reasons cited by administrators for not participating consistently included too much going on during the school year or too many changes currently going on in their district. Many administrators stated that they would ask their teachers but did not respond to subsequent contact made by the researcher. Contacts were made to all administrators in all five identified regions in the state of Michigan that fit the study criteria.

Demographic Characteristics of Research Sample

Administrators from 288 schools in all five regions in Michigan were contacted to participate in this study. The sample for the study was nine teachers and 73 students. Four of the seventh grade teachers taught math, and five of the seventh grade teachers taught ELA. Regionally, four teachers (two ELA and two math) participated from the northeast quadrant of the Lower Peninsula in Michigan, three teachers (one ELA and two math) were from the southeast quadrant, and two teachers (one ELA and one math) were from the northwest quadrant. There were no participants from the Upper Peninsula region or the southwest quadrant of the state. A total of 40 *easy* students and 33 *difficult* students were identified for a total of 73 students that participated in this study. Two of the easy students did not take the PPI because they were absent on the day the PPI was given. The researcher contacted teachers to take the PPI, but there was no response. This sample was a purposive sample where equal variances were not assumed because the researcher was investigating the teacher identification of students and the ease of interaction between the teachers and student groups. Table 1 shows how many students participated in each region divided by easy or difficult to communicate with as identified by teachers.

Table 1. Students Identified Per Region

Region	Students	N
Northeast	Diff	14
	Easy	18
	Total	32
Southeast	Diff	12
	Easy	14
	Total	26
Northwest	Diff	7
	Easy	8
	Total	15
Total	Diff	33
	Easy	40
	Total	73

The sample contacted to participate was a purposive sample and a representation of the population for easy and difficult students. The number of participants regionally was insufficient for regional analysis due to the low numbers in some regions and no participants in others.

Teachers were asked to share the criteria that they used to identify students with the researcher. Table 2 contains the criteria teachers recorded that they used to identify students as easy or difficult (see Appendix E for Teacher Identification Form).

Table 2. Criteria Teachers Cited During Student Identification

	What criteria did you use to identify students that you communicate with Teacher easily?	What criteria did you use to identify students that you have difficulty communicating with?
1	Ease of communication, able to joke with, make eye contact when talking to.	Lack of eye contact, defiant, clashing personalities, unable to take joking.
2	They follow directions and can hold conversations easily with adults.	They have more difficult time following directions given by an adult.
3	Students that are easy to work with. They come to school ready to learn. They ask questions, participate in class, and do their job as a student in my class.	Students that come to class and just try to get by. They are quiet, don't ask questions, don't like to talk/explain thinking. They may work hard and want to achieve success, but don't communicate their thoughts/feeling with me.
4	Readily share ideas, concerns, joys, etc. Ready to trust	Quiet, more introverted. Not ready to trust-wall is still up
5	The students that I feel connect with me most. Our personalities, way of thinking, way we process a problem is alike.	Students that we think different (sic).
6	1. The number of times I need to repeat a task, message or explicitly re-state directions. 2. Nonverbal responses of understanding with gestures or verbal check for understanding.	1. The number of times I have to repeat or explain directions, tasks, or messages. 2. The number of times I have to probe or revisit a check for understanding, or signal to get a reaction out of them.
7	Students who I have conversations with. Students who talk to me regularly- Not about school.	Students who, when asked questions, are reluctant to answer-one on one. Students who do not initiate conversations.
8	I know about the student's life outside of school Communicates and interacts with me almost on a daily basis Volunteers in the classroom discussions	I don't know much about the student's life outside of school Very quiet in school and doesn't talk to me unless I initiate conversation Doesn't volunteer in the classroom discussions
9	These are students who are comfortable participating in class, and I talk to them about their personal lives too.	These are students who are very quiet in class, don't ask me questions much, and I know little of their personal lives.

Teachers were asked to identify five students with whom they communicated easily and five students with whom they had a difficult time communicating. They were prompted with the questions in Table 2 to answer how they identified students. The criteria for identifying students were left up to the discretion of the teachers.

Based on teacher comments, easy students seem to be more similar to teachers in their interactions and thinking. Teachers talk to and interact regularly with the easy student group. Easy students were compliant with the teacher expectations of making eye contact and following the rules. Teacher comments about difficult students were different in nature. Comments about difficult students focus more on lack of compliance by defiance and failure to follow directions. Teachers also noted about the lack of interaction and class participation of difficult students.

Presentation of Results

The presentation of data is separated by hypotheses. All of the hypotheses were written in null form. The findings for Hypotheses 1, 2, and 3 were presented together; 4, 5, and 6 were presented together; 7 and 8 were presented together; and 9 was presented separately. Descriptive statistics for each set of hypotheses were included as a part of the analysis of data.

Findings for Hypotheses 1, 2, and 3

The first three null hypotheses that relate to the research question are:

1. There is no significant difference ($p < .05$) in personality strengths between teachers and easy students.
2. There is no significant difference ($p < .05$) in personality strengths between teachers and difficult students.

3. There is no significant difference ($p < .05$) in personality strengths between easy and difficult students.

These three hypotheses are presented together because all used multiple t-tests to determine relationships in means of personality strengths. Personality strengths are the amount of energy available for each of Kahler’s personality types. All individuals have one personality type that is their strongest part, but they also exhibit characteristics from the other personality types depending on the amount of personality strength available. Personality strengths (0-100) were determined by the PPI that students and teachers took as a part of this study. Table 3 shows the means of the personality strengths of all teachers and students in the test sample.

Table 3. Means of Personality Strengths of Teachers and Students

Subjects		Reactor	Persister	Workaholic	Rebel	Promoter	Dreamer
Teacher	Mean	84.44	77.78	65.00	36.22	33.56	31.67
	N	9	9	9	9	9	9
Student	Mean	55.61	41.69	46.52	77.80	35.89	45.32
	N	71	71	71	71	71	71

The teacher and student group means were considered to determine an overall understanding of the structure of the teacher group as compared to the student sample that they were teaching. The three personality strengths with the highest amount of energy for teachers were Reactor, Persister, and Workaholic. The top personality strengths for all students were Rebel, Reactor, Workaholic, and Dreamer. The two groups have a different personality preference with the highest amount of energy. Teachers have higher energy levels than students for Reactor, Persister, and Workaholic, while students have higher levels for Rebel, Promoter, and Dreamer. The Promoter energy between teachers and students was very close.

A more detailed look at the means of the sample specified in Hypothesis 1 of teachers and easy students can be observed in Table 4. The top three personality strengths for easy students were Rebel, Reactor, and Persister. The energy structure of easy students was similar in structure, or order of personality strengths as determined by amount of available energy, to the teacher group. The major exception was that there was a large discrepancy, more than a 40-point difference, in Rebel energy. Both the easy group of students and the entire student sample have the highest amount of energy for Rebel. The easy group of students had a considerably large standard deviation on a scale of 100 resulting in a large range of energies portrayed in this sample. The large range and size of standard deviation may be a function of the smaller sample size and low response rate in this study. The high amount of energy available for Rebel may partially be explained by the nature, age, and maturity level of the middle school student.

Table 4. Descriptive Statistics of the Personality Strengths of Teachers and Easy Students

	Subjects	N	Mean	Std. Deviation	Std. Error Mean
Reactor	Teacher	9	84.44	15.61	5.20
	Easy	38	53.32	27.01	4.38
Persister	Teacher	9	77.78	22.23	7.41
	Easy	38	45.68	25.97	4.21
Workaholic	Teacher	9	65.00	22.63	7.54
	Easy	38	43.13	23.20	3.76
Rebel	Teacher	9	36.22	16.72	5.57
	Easy	38	76.95	20.05	3.25
Promoter	Teacher	9	33.56	19.57	6.52
	Easy	38	34.47	24.50	3.97
Dreamer	Teacher	9	31.67	15.39	5.13
	Easy	38	42.05	26.16	4.24

A t-test for independent samples showed that for four of the six measures in personality strengths, there was a statistically significant difference in means between teachers and easy

students. In Table 5, the t score for Reactor was 4.58 ($p < .001$), Persister was 3.77 ($p = .002$), Workaholic was 2.60 ($p = .023$), and Rebel was -6.31 ($p < .001$) indicating statistically significant differences in energy levels. Teachers had greater strength than the easy students for Reactor, Persister, and Workaholic energy, but the easy students had greater strength than the teachers for Rebel energy. Promoter and Dreamer did not show a statistically significant difference between teachers and easy students. Since there was a significant difference in energy in four of the six personality strengths between teachers and easy students, Hypothesis 1 was partially rejected. The small sample size was likely responsible for the large standard deviation and range of energy for easy students as cited in Table 4. The results for partially rejected Hypothesis 1 may have been impacted by the large standard deviation and range and also be a function of the sample size for easy students.

Table 5. T-Test for Independent Samples for Teachers and Easy Students

	t-test for Equality of Means	
	t	Sig. (2-tailed)
Reactor	4.58	.000
Persister	3.77	.002
Workaholic	2.60	.023
Rebel	-6.31	.000
Promoter	-.12	.906
Dreamer	-1.56	.134

Statistical evidence showed that there was a difference between teachers and easy students in four of the six personality strengths. The compliance factor and ability to interact as noted in Table 2 from teachers about easy students can help explain why teachers identified this group of students as easy to communicate with instead of difficult. Due to the lower than

expected number of participants in this study, the results of the data may be at least partially a function of the size of the test sample.

The mean personality strengths of the sample in Hypothesis 2 of teachers and difficult students can be observed in Table 6. The top three personality strengths for difficult students were Rebel, Reactor, and Workaholic. The energy structure of difficult students was different in structure than the teacher group. There was a large discrepancy, more than a 40-point difference in energy levels, between teachers and difficult students for Rebel and Persister. Students had a much higher energy for Rebel. The higher Rebel energy indicated that difficult students had more energy to interact with people who were spontaneous, creative, and playful than the teachers. The teachers had a much higher energy for Persister strengths than the difficult student group. The higher Persister energy indicates that teachers have more energy to interact with people who are dedicated, conscientious, and observant than the difficult student group. Both the difficult group of students and the entire student sample have the highest amount of energy for Rebel. The difficult student group has a considerably high standard deviation in this test sample. The standard deviation observed with the difficult student group may be a function of the sample size in this study.

Table 6. Descriptive Statistics of the Personality Strengths of Teachers and Difficult Students

	Subjects	N	Mean	Std. Deviation	Std. Error Mean
Reactor	Teacher	9	84.44	15.61	5.20
	Difficult	33	58.24	25.61	4.46
Persister	Teacher	9	77.78	22.23	7.41
	Difficult	33	37.09	22.72	3.95
Workaholic	Teacher	9	65.00	22.63	7.54
	Difficult	33	50.42	26.55	4.62
Rebel	Teacher	9	36.22	16.72	5.57
	Difficult	33	78.79	16.98	2.96
Promoter	Teacher	9	33.56	19.57	6.52
	Difficult	33	37.52	24.61	4.29
Dreamer	Teacher	9	31.67	15.39	5.13
	Difficult	33	49.09	26.18	4.56

A comparison of mean scores for teachers, easy students, and difficult students can be observed in Figure 2. The easy and difficult student groups have much higher levels of Rebel energy than the teacher group. Large differences in Reactor, Persister, and Workaholic energy between teachers and both the easy and difficult groups of students can be observed in Figure 2. The easy students were closer to the teacher group for four of the six personality strengths than the difficult student group. While no one is a pure personality type, the amount of interaction energy available for each of the personality types is more of a factor of ability to communicate with others. In addition to the personality energies, teachers identified easy students, as noted in Table 2, as more compliant and easier to interact with than the group of difficult students. The compliance factor and closer overall energy levels between teachers and easy students help explain why teachers identified students as easy. The clear differences in energy levels, structure, and noncompliance of difficult students help explain why teachers identified students as difficult. While many of the differences in energy between easy and difficult students were subtle, as observed in Figure 2, the amount of interaction energy available for each of the

personality types is a factor of ability to communicate with others. For example, Reactor teachers may be able to nurture their students well, but their students may not respond readily to the nurturing; however, they would tolerate it, usually without problems.

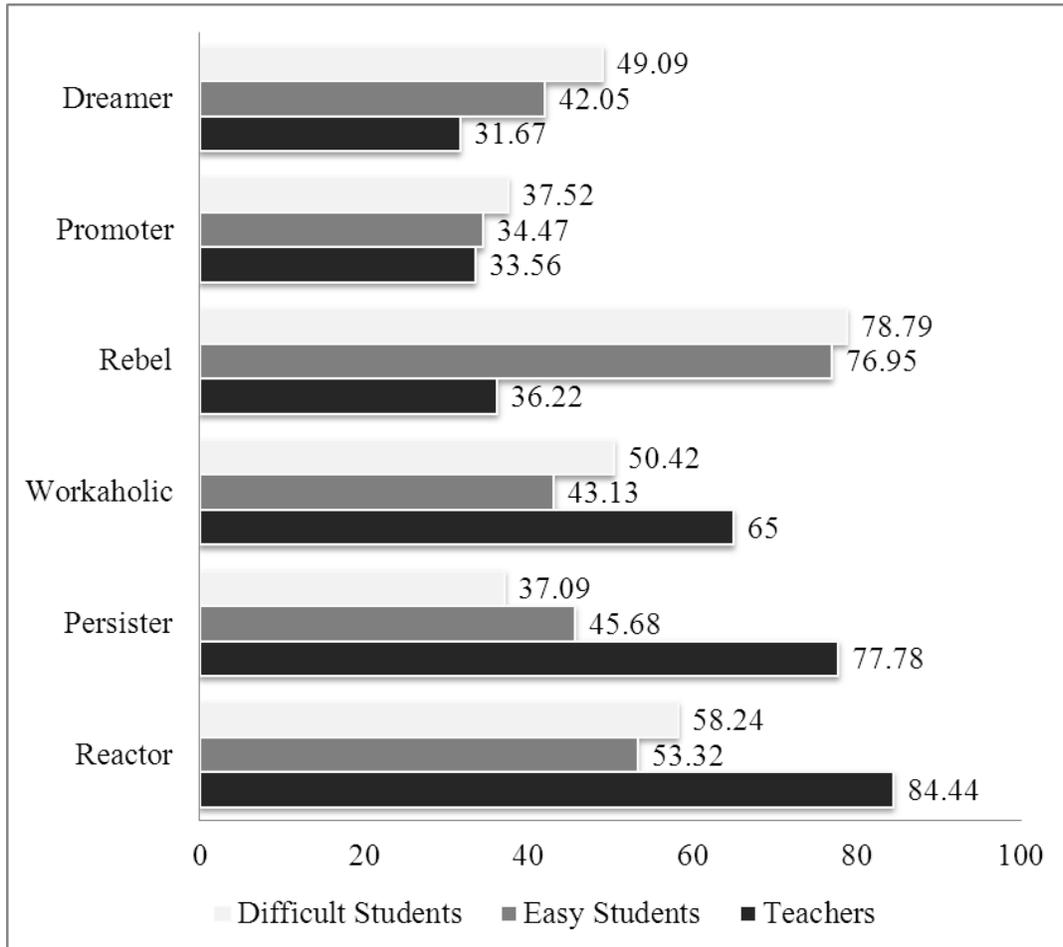


Figure 2. Mean personality strengths of teachers, easy students, and difficult students.

A t-test for independent samples showed that for four of the six measures of personality strengths, there was a statistically significant difference in means between teachers and difficult students. Shown in Table 7, the t-score for Reactor was 3.83 ($p = .001$), Persister was 4.84 ($p < .001$), Rebel was -6.75 ($p < .001$), and Dreamer was -2.54 ($p = .019$) indicating a statistically significant difference in energy levels. Teachers had greater strength than the difficult students

for Reactor and Persister energy, but the difficult students had greater strength than the teachers for Rebel and Dreamer energy. Workaholic and Promoter did not show a statistically significant difference between teachers and difficult students. Since there was a significant difference in energy in four of the six personality strengths between teachers and difficult students, Hypothesis 2 can be partially rejected.

Table 7. T-Test for Independent Samples for Teachers and Difficult Students

	t-test for Equality of Means	
	t	Sig. (2-tailed)
Reactor	3.83	.001
Persister	4.84	.000
Workaholic	1.65	.121
Rebel	-6.75	.000
Promoter	-.51	.619
Dreamer	-2.54	.019

While evidence showed that there was a difference between teachers and difficult students, there was not a statistical difference in energies between Workaholic and Promoter energy. These results were likely a function of the low teacher sample size. In addition to differences in four of the six personality strengths, there was a distinct difference in order of personality strengths based on the amount of available energy between teachers and difficult students. Also, as cited by teachers in Table 2, the lack of compliance and inability of difficult students to interact with teachers can help explain why teachers identified this group of students as difficult.

The mean personality strengths of the sample in Hypothesis 3 for easy and difficult students can be observed in Table 8.

Table 8. Descriptive Statistics of the Personality Strengths of Easy and Difficult Students

	Subjects	N	Mean	Std. Deviation	Std. Error Mean
Reactor	Easy	38	53.32	27.01	4.38
	Difficult	33	58.24	25.61	4.46
Persister	Easy	38	45.68	25.97	4.21
	Difficult	33	37.09	22.72	3.95
Workaholic	Easy	38	43.13	23.20	3.76
	Difficult	33	50.42	26.55	4.62
Rebel	Easy	38	76.95	20.05	3.25
	Difficult	33	78.79	16.98	2.96
Promoter	Easy	38	34.47	24.49	3.97
	Difficult	33	37.52	24.61	4.29
Dreamer	Easy	38	42.05	26.16	4.24
	Difficult	33	49.09	26.18	4.56

A t-test for independent samples, in Table 9, shows that for all of the measures in personality strengths, there was not a statistically significant difference in means between easy and difficult students. The t scores were not significant for any of the personality types. Therefore, Hypothesis 3 was retained because there was not a statistically significant difference in personality strengths between easy and difficult students.

Table 9. T-Test for Independent Samples for Easy and Difficult Students

	t-test for Equality of Means	
	t	Sig. (2-tailed)
Reactor	-.79	.433
Persister	1.49	.141
Workaholic	-1.22	.226
Rebel	-.42	.677
Promoter	-.52	.604
Dreamer	-1.13	.262

While there was not a significant difference in personality strengths between easy and difficult students, it was observed that both groups of students were at least partially different than their teachers. The easy students and teachers have a more similar structure and amount of energy within each personality type than the difficult students and teachers. Also, the identified differences in Table 2 show that compliance and ability to interact with teachers was notably different between easy and difficult students.

Findings for Hypotheses 4, 5, and 6

The second three null hypotheses that related to the research question are:

4. There is no significant difference ($p < .05$) in GPA between easy and difficult students.
5. There is no significant difference ($p < .05$) in reading MEAP scores between easy and difficult students.
6. There is no significant difference ($p < .05$) in math MEAP scores between easy and difficult students.

These three hypotheses are presented together because all used a t-test to determine relationships in the means of student achievement data. Table 10 shows the means of the achievement data for all students in the test sample. The GPA score was measured on of a 4.0 scale. A GPA score of 4 indicated high achievement and a score of 1 indicated low achievement. MEAP scores were also scored on a 4.0 scale; however, a 1 indicated high achievement and a 4 indicated low achievement. A score of 1 or 2 were considered proficient and a score of 3 and 4 were considered not proficient. GPA and MEAP scores are both measures of student achievement, but are read inversely of each other.

Table 10. Mean Student Achievement Scores for Easy and Difficult Students

	Students	N	Mean	Std. Deviation	Std. Error Mean
GPA	Easy	40	3.24	.76	.12
	Difficult	33	2.55	1.08	.19
Reading MEAP	Easy	40	2.15	.83	.13
	Difficult	33	2.48	1.03	.18
Math MEAP	Easy	40	2.92	.86	.14
	Difficult	33	3.21	.93	.16

A more detailed look at the means of the achievement scores for easy and difficult students can also be observed in Table 10. Students were identified by their teacher as easy or difficult to communicate with based on the criteria teachers cited in Table 2. MEAP scores are read inversely of GPA scores. The lower the MEAP score, the higher the academic achievement for that measure.

A t-test for independent samples, shown in Table 11, demonstrates that there was a statistically significant difference in GPA between easy and difficult students. The t score for GPA was 3.08 ($p = .003$) indicating a statistically significant difference between easy and difficult students. Hypothesis 4 can be rejected because there was a statistically significant difference between the mean of easy and difficult students. GPA can be considered a student's measure for meeting teacher expectations. This study shows that students with whom teachers communicate with easily performed better as measured by their GPA than students that teachers identified as difficult.

Table 11. T-Test for Independent Samples for Achievement in Easy and Difficult Students

	t-test for Equality of Means	
	t	Sig. (2-tailed)
GPA	3.08	.003
Reading MEAP	-1.50	.139
Math MEAP	-1.36	.178

Table 11 also shows that the t score between easy and difficult students was not statistically significant indicating that there was no difference in reading MEAP scores. Hypothesis 5 is retained because there was not a statistically significant difference in the mean reading MEAP scores between easy and difficult students. The results in reading between the two groups of students may be explained by understanding that the criteria for achievement were independent of the teacher. There was also not a statistically significant t score for math MEAP scores between easy and difficult students. Hypothesis 6 was retained because there was not a significant difference in math MEAP scores between easy and difficult students.

Identifying a student as easy or difficult was not an indication of how successful he or she would be on an external measure. While GPA is partially a student's ability to meet a teacher's expectations, the same cannot be said for external measures such as the MEAP test. One of the common characteristics described by teachers about how they identified students was the compliance factor. Easy students were identified as more compliant than their difficult peers. Easy students also had a statistically higher GPA than the difficult student group. Due to the criteria teachers used to identify students as easy or difficult, differences in grades can be a function of a locally created measure and their personality match with their teacher. The result was that a successful student was determined by how compliant he or she functioned in the classroom based on the teacher's criteria or expectations. When the achievement measure was

external and the compliance factor was removed, the data showed that there was no statistical difference in achievement between easy and difficult students. The results indicated that students with whom teachers consider easy to communicate may be graded more favorably as evidenced by a statistical difference between student groups for GPA. There is not a difference between student groups for MEAP measures. Hypothesis 9 will further examine the local GPA measure and external MEAP measures to determine if there is an overall statistical difference in measures of student achievement.

Hypotheses 7 and 8

The next two null hypotheses that relate to the research question are:

7. There is no significant difference ($p < .05$) in student achievement regionally between easy students.
8. There is no significant difference ($p < .05$) in student achievement regionally between difficult students.

While contacts were made to all Class B and C public school administrators in five regions across the state of Michigan, two regions did not have any participants. There were no participants from the Upper Peninsula or the southwest region in Michigan. There was not enough data to make definitive generalizations about the regional differences. Due to the lower number, or lack of participants in each region Hypotheses 7 and 8 were discarded.

Findings for Hypothesis 9

The last hypothesis related to the research question is:

9. There is no significant difference ($p < .05$) in student achievement between GPA and MEAP scores.

An ANOVA was conducted with student achievement data to investigate Hypothesis 9. GPA, math MEAP, and reading MEAP scores were used as measures of student achievement. Descriptive statistics of the mean achievement measures including the inverted GPA are displayed in Table 12. Lower scores indicate higher achievement. GPA indicated a higher level of achievement than both other measures and reading MEAP scores indicated higher achievement than math MEAP scores.

Table 12. Descriptive Statistics of Achievement Data

	N	Mean	Std. Deviation	Std. Error
GPA Inverted	73	1.07	.97	.11
Reading MEAP	73	2.30	.94	.11
Math MEAP	73	3.05	.90	.10

An ANOVA, in Table 13, on the student achievement measures of GPA reading MEAP, and math MEAP show that the F value of 83.53 was statistically significant ($p < .001$). Hypothesis 9 was rejected. It was anticipated that there was a mean difference in academic measures due to the mean differences observed between easy and difficult students with regard to GPA but not MEAP measures. A Tukey HSD post hoc analysis was performed to determine the details of the differences.

Table 13. ANOVA for Student Achievement Measures

	Sum of Squares	Mean Square	F	Sig.
Between Groups	146.64	73.32	83.53	.000
Within Groups	189.58	.88		
Total	336.22			

A post hoc analysis, in Table 14, was performed to determine where individual differences in student achievement lie. Table 14 shows that there was a statistically significant mean difference between all measures of achievement. The mean difference in achievement between GPA and reading MEAP scores was -1.23 ($p < .001$), GPA and math MEAP scores was -1.99 ($p < .001$), and reading MEAP and math MEAP scores was -.75 ($p < .001$). All MEAP content areas are measured using the same proficiency scale with 1 and 2 considered proficient and 3 and 4 considered not proficient. Both scales, GPA and MEAP scores, are measured on a 4.0 scale with a higher number for GPA indicating higher student achievement and a lower number indicating higher achievement for MEAP measures. Prior to the ANOVA and Tukey HSD post hoc analysis, the GPA scores were inverted so that all measures of student achievement would be measured accurately and similarly. The properties of GPA and MEAP scores scales require further explanation to interpret.

Table 14. Tukey Post Hoc Analysis for Student Achievement Data

Measure 1	Measure 2	Mean Difference	Std. Error	Sig.
GPA Inverted	Reading MEAP	-1.23 [*]	.16	.000
	Math MEAP	-1.99 [*]	.16	.000
Reading MEAP	GPA Inverted	1.23 [*]	.16	.000
	Math MEAP	-.75 [*]	.16	.000
Math MEAP	GPA Inverted	1.99 [*]	.16	.000
	Reading MEAP	.75 [*]	.16	.000

The noted difference between GPA scores and reading MEAP scores requires an understanding of the uniqueness and differences between the two measures. The reading MEAP test is designed to test the reading standards and expectation in the state of Michigan, while GPA is a measure of accumulative expectations set forth by teachers from multiple classes. Statistical

analysis showed that the GPA scores at 1.07 indicate higher achievement levels than the reading MEAP scores at 2.30 for this test sample. Results also showed that reading MEAP scores for all students were significantly higher at 2.30 than math MEAP scores at 3.05 for all students. Not surprisingly, there was also a significant difference between GPA and math MEAP scores. The higher scores in GPA could be explained because grades are a local measure determined by meeting teacher expectations, while the reading scores are a function of an external test measuring proficiency. The ability of a student to comply with teacher expectations appears to indicate higher levels of achievement than the external measures. The higher reading MEAP scores than math MEAP scores may be explained by the stronger emphasis and resources that schools are allocating toward reading proficiency.

It can be concluded that for this subject sample, students had higher achievement scores as measured by GPA than on the reading MEAP test and higher scores on the reading MEAP test than on the math MEAP test. Even with the statistical differences indicated in this study, all measures are important, necessary, and used when making high-stakes decisions. MEAP scores have been used to measure the effectiveness of teachers, and GPAs are typically a part of the college application process. The local measure was determined by meeting the criteria or expectations set forth by teachers to determine GPA, and the external measure was used to determine proficiency as indicated by state standards. While there was a statistical difference in how these measures determine student achievement, an understanding of their purpose can help make better decisions to prepare students for the 21st century.

Summary

This chapter contained the statistical analysis and findings as indicated by the nine hypotheses used in this study. The data analysis revealed that there was a statistically significant

difference in some personality strengths between teachers and both easy and difficult students, but there was not a difference between the groups of easy and difficult students. Student achievement data showed that there was a statistically significant difference in GPA between easy and difficult students, but no difference in math MEAP and reading MEAP scores. The number of participants regionally was insufficient for regional analysis due to the low numbers in some regions and no participants in others. The data also showed that there was a statistically significant difference between GPA and MEAP scores. The results of these hypotheses were used to examine the relationship between a teacher's ability to communicate with students and student achievement. This relationship will be the focus of discussion in Chapter Five.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Many students have failed to meet the expectations of being prepared for college or the workforce when graduating high school (ACT, 2005). Teachers are being held accountable for making sure that students are successful by preparing them with skills required in the 21st century. Planning and preparation for post high school success must begin at least by middle school years to ensure “a solid and broad foundation of academic skills” (ACT, 2005, p. 24). To help students reach academic goals of the 21st century, education has placed a distinct emphasis on individualized learning to meet the needs of every student. Teachers are expected to connect with and help all students grow in academic measures to become successful. The ability to connect with all students is no longer an option but an expectation in the classroom.

This study compared a teacher’s ability to communicate with students and student achievement. Teachers were asked to choose five students that they communicated with easily and five students with whom they had a difficult time communicating. Nine hypotheses were examined during this investigation to answer the following research question:

What is the relationship between a teacher’s ability to communicate with students and student achievement?

The results of this study will help inform educators about how to give fidelity to best practices to positively impact student achievement. It will be used to inform educators about how to connect more effectively with all students. The rest of this chapter will examine and interpret the findings, note the implications that can be drawn from this study, and make recommendations for further research.

Summary of Findings

To inform the research question, it was necessary to examine the teacher's ability to communicate with students. Hypotheses 1, 2, and 3 focused on personality strengths and the amount of available energy for communication within each personality type. Data analysis showed that there was a statistically significant difference in energies between teachers and easy students. Teachers and easy students differed in energy for Reactor, Persister, Workaholic, and Rebel but were similar in Promoter and Dreamer energy. Teachers had greater strength than the easy students for Reactor, Persister, and Workaholic energy, but the easy students had greater strength than the teachers for Rebel energy. The personality strengths where the easy students have significantly more energy than the teachers highlight character strengths with which teachers may have difficulty. The higher Rebel energy indicated that easy students had more energy to interact with people who were spontaneous, creative, and playful than the teachers. There was also a statistically significant difference in energies between teachers and difficult students. The four areas of difference included Reactor, Persister, Rebel, and Dreamer. Teachers and difficult students were similar in Workaholic and Promoter energy. Teachers had greater strength than the difficult students for Reactor and Persister energy, but the difficult students had greater strength than the teachers for Rebel and Dreamer energy. The personality strengths where the difficult students had significantly more energy than the teachers indicated areas where teachers may have difficulty. The difficult students interact easily with people who exhibit the Rebel character strengths of being spontaneous, creative, and playful and the Dreamer character strengths of being reflective, imaginative, and calm. The teachers may have more difficulty connecting with the higher amounts of Rebel and Dreamer energy. There was not a difference in personality strengths between easy and difficult students.

When comparing the amount of energy available for each personality type for teachers, easy students, and difficult students, it was observed that the easy students were closer in energy strength to the teacher group than the difficult student group for four of the six personality types. Teachers commented that students who were identified as easy were more similar to teachers in their interactions and thinking than the group of difficult students. Easy students were also cited as being more compliant with teacher expectations and following the rules. The criteria that teachers used to identify students for this study were telling in that compliance was an influencing factor for student identification. Teachers identified the easy students as compliant and the difficult students as having more difficulty following directions. The noted compliance factor between student groups may be the defining factor to distinguish between easy or difficult students.

Hypotheses 4, 5, and 6 concentrated on student achievement measures. An examination of the differences in student achievement data between easy and difficult students is the fundamental analysis that helped answer the research question considered in this study. The data revealed that there was a statistical difference in achievement data between easy and difficult students. The differences found between easy and difficult students were limited to GPA scores or scores that were created locally and given to students by their teachers. The criteria that teachers used to identify students as easy or difficult could be a function of how well students met the criteria that the teacher set forth. The data also showed that there was not a statistical difference between easy and difficult students when looking at the MEAP scores for both reading and math.

GPA can be considered a student's ability to meet a teacher's expectations. A teacher's ability to communicate with easy or difficult students is not an indication of how successful he or

she will be on an external or standardized test. The difference in achievement measures between GPA and MEAP scores can be explained because teachers typically create their own assessment to determine GPA, while both the reading and math MEAP tests are standardized tests that are not created by the individual teachers. One of the characteristics cited by teachers about how they identified students was compliance. Results in this study show that higher student achievement, measured by GPA, may have been determined by the compliance exhibited in the classroom. Achievement measures that were external (reading and math MEAP) showed no difference in achievement between easy and difficult students.

Due to the lower number, or lack of participants in each region, Hypotheses 7 and 8 were discarded. The demographic characteristics of the sample population showed that the response rate broken down regionally was low. Even though contacts were made to administrators in all regions in the state, there were no participants from the Upper Peninsula and the southwest quadrant of the state.

An analysis of student achievement measures were examined in Hypothesis 9. The data showed that there was a statistical difference observed between all three measures of achievement. It was determined that the GPA scores indicated higher achievement levels than the reading MEAP scores for this test sample. It was also determined that the reading MEAP scores for all students were significantly higher than the math MEAP scores. The higher scores in GPA could be explained because GPA is an indicator of a student's ability to meet teacher expectations resulting in more favorable grades for compliant students. The reading and math MEAP tests are dictated more by state expectations. The higher reading MEAP scores than math MEAP scores can be explained by the strong emphasis and resources that all schools are allocating toward reading proficiency, especially with struggling readers.

The ability to connect with students does impact student achievement scores on measures such as GPA that are at least partially determined by a student's ability to meet teacher expectations. Compliance is a factor that teachers use to identify students as easy or difficult to connect with in the classroom. In this study, easy students had higher GPAs than difficult students. GPA is an important component to student success in the 21st century because colleges utilize GPA scores as one factor to determine admittance. External assessments such as MEAP tests did not show the same differences in student achievement between easy and difficult student groups that the GPA scores showed. Unlike GPA, MEAP scores are used for state purposes rather than college admission. Efforts were made to make generalizable conclusions regionally about student achievement. Due to the low sample size, there were not enough data to make definitive generalizations about the regional differences. Statistical analysis also revealed that there were differences in measures of student achievement with GPA indicating a higher level of achievement than reading and math MEAP measures for the same group of students. Higher GPA scores may be a result of favorable grades that were determined by whether or not students were compliant in the classroom.

Interpretation of Findings

A teacher's ability to connect and understand each student is essential for student achievement in the classroom. Findings in this study show that students who were easy to communicate with demonstrate higher classroom achievement as determined by GPA. This study verifies previous findings that grades are an indicator of how well students meet teacher expectations (Gilbert, 2010). The differences in student grades could be due to a personality match with this or her teacher and a student's ability to comply with teacher criteria for success. The easy students scored higher for GPA because they met the criteria set forth by teachers better

than the difficult students. This study expanded on Gilbert's (2010) previous research to include an examination of external student achievement measures in addition to GPA. Results showed that there was not a difference between easy and difficult students in achievement for reading MEAP and math MEAP tests. When the measure was external and not aligned with teacher expectations, there was no difference in performance between easy and difficult students. To be clear, the lack of difference in achievement between easy and difficult students for MEAP scores is not an indicator that connecting with students is not necessary. Connecting with all students can help increase GPA and standardized test scores. The need to communicate and connect with all students is essential and supported by the number of students who are not achieving proficiency on the expected standards of NCLB. Many students are not prepared for their career or college in the 21st century once they graduate high school (ACT, 2005). Regardless of how easy or difficult students are to communicate with, it is necessary for educators to understand how to connect with all students. An understanding of the dynamic role that connecting with students can play in achievement can give teachers leverage in leading students to reach high-stakes goals. Knowing that there are discrepancies in GPA between students that teachers connect with easily and students that teachers have a difficult time connecting with can help teachers become more strategic in instructional planning and delivery in the classroom.

Colleges use GPA as one measure to determine college acceptance along with other indicators of achievement. With pressure put on teachers to help students become successful, an accurate measure of student proficiency is required to help students reach academic goals. Communicating proper learning goals is the first step to impact student success (Marzano, 2007, p. 9). The learning goals must align with standards designed to get students college- and career-ready. The higher GPA scores in this study indicate that the local expectations set forth by

teachers may be more aligned with compliance than learning goals designed to help students be successful post high school graduation.

ACT (2005) reported that students are not ready to enter college or the workforce upon high school graduation. This study suggests that favorable grades may be an issue impacting the readiness of students. Due to the pressure on educators to help students become successful and ready for the 21st century, the need for students to get a quality education has never been greater than it is today. The success of students depends on their preparedness for college and the work force once they leave their K-12 schooling. Much of the responsibility for being prepared for post high school graduation is placed on educators in the K-12 school system. The increased pressure on educators may help explain why GPA scores in this study indicate higher achievement levels than the MEAP scores, which seem to be more closely anchored with the concept of proficiency.

Aligning teacher expectations with college- and career-ready standards is only one requirement for student success. Educators are equipped with tools, or best practices, to help promote the success of students. These tools include, but are not limited to, goal setting, providing student feedback, differentiated instruction through individualization, and communicating effectively. All of these best practices can be utilized to help students achieve high standards, but they will not guarantee success. Reeves (2005) suggested that there are many common practices that are essential to help promote student achievement, but if one of the essential components is missing, there will likely not be a positive impact on student achievement. This study focuses on one component that is essential to student success: effective communication. Communication is the ability to receive information as it was intended from a source. Communication is a best practice that helps strengthen other best practices in the

classroom. Without effective communication taking place, the anticipated gains expected through implementing best practices and high-yield instructional strategies are unlikely. Effective goal setting and feedback requires communication aimed at individual needs. This was supported by the observed differences in GPA scores between easy and difficult students. Communication could potentially be the difference as to whether or not other best practices will have a positive effect on student achievement. The outcomes in this study support the premise that communication gives fidelity to other best practices. Students whom teachers identify as easy to communicate with demonstrate higher levels of achievement for GPA than students with whom teachers identify as more difficult. The discrepancies found in achievement measures also support the importance of communication in American classrooms. A teacher's ability to communicate proper learning goals and facilitate instruction and feedback at an individual level precedes the fulfillment of reaching academic success. A teacher's ability to communicate with all students is an art that can be developed if teachers are aware of the appropriate tools and strategies to connect with different personality types.

Marzano (2007) stated that teachers can use goal setting along with specific and timely feedback to help positively impact student achievement. Successful students require quality goals and meaningful feedback that informs each student about their own learning (Marzano, 2010). Effective feedback must also coincide with effective instruction and build on prior learning (Hattie, 2009). For prior learning and instructional experiences to be effective, teachers need to be adept at knowing their audience and connecting individually with all students through communication. Teachers need to be equipped with communication strategies to help connect with all students better in the classroom so that effective instruction and feedback can take place. PCM is a model that gives teachers the tools and strategies needed to understand how students

perceive the world, understand personality differences, and give insight into what motivates students (Kahler, 1996). Strategies for effective communication will help teachers focus more on the process of connecting with students individually and less on compliance as an indicator of success once proper learning goals are set.

Even with best practices and research-based strategies to help students become successful, educators are still at a loss for helping some students reach the levels of proficiency expected by NCLB. This study demonstrated the importance of communication as a best practice and arguably the factor that gives other best practices fidelity. Research suggested that teachers are an essential factor contributing to student achievement (Marzano, Marzano, & Pickering, 2003). Communication is the prerequisite required for a teacher to have an impact on student learning. Bailey (1998) suggested that a teacher's ability to communicate with students "may be the determining element in overall student success" (p. 185). Focusing on students at an individual level and communicating with them in a way that they prefer is an expectation of educators and often accomplished through differentiated instruction in the classroom.

Differentiation is more than varying instruction to address individual differences. Instead, it is an intentional approach to finding what works with each student with special attention focused on struggling learners (Tomlinson & Allan, 2000). Good educators have the tools necessary to address all students, despite their differences in learning style or communication preference. Having an in-depth understanding of personality types can give insight into how to differentiate instruction by addressing learning styles and communication preferences. This understanding is a possible avenue to closing the achievement gap observed in American schools today.

The results of this study suggest that effective communication, with goals and feedback aligned to standards that prepare students for the 21st century focused at an individual student

level, is a foundational requirement that is often not given enough emphasis in today's classrooms. Effective communication through proper goal setting is a possible avenue to help our students reach high levels of success expected by NCLB and to provide students with the opportunity to be on track so that they are college- and career-ready upon high school graduation. Twenty-first century skills expect students to be able to create, collaborate, and communicate in order to be successful. These skills must be the focus of teachers. As society continues to become more complex, educators need to be able to teach students how to become proficient at knowing what they need to know and what is less important. The far-reaching effects of not effectively preparing students for the 21st century impact American society as a whole. As the U.S. shifts more toward a digital functioning society where the success of a nation rests upon the success of individuals, the stakes of preparing students for the 21st century has never been greater.

Implications of the Study

Implications for theory

This study examined the relationship between a teacher's ability to connect with students and student achievement. Findings show that there was a relationship between a teacher's ability to connect with students and student achievement. The data showed that there were more similarities in amount of available energy for four of the six personality types between teachers and easy students than with the difficult student group. Looking at the mean statistics of the energy levels in the test sample, teacher energy levels of personality strengths show some consistencies and differences with the findings of previous research. In this study, the personality types with the largest amount of available energy for teachers were Reactor,

Persister, and Workaholic. These findings are consistent in that 90% of educators typically have the highest energy levels in Persister, Workaholic, and Reactor (Gilbert, 1999, 2005, 2011).

While the most prevalent three personality types for educators are the same, differences found with previous research lie in the order of the top three preferences. As was found in Gilbert's (2010) previous research, the easy students were strongest in Rebel energy with differences in the other personality type energies. Difficult students in this study were strongest with Rebel and Reactor energy. Gilbert's (2010) research showed that difficult students had the strongest energy for Dreamer with Rebel and Reactor energy second and third strongest respectively. This study did not find significant differences between the easy and difficult student groups for any of the personality types. Gilbert's (2010) research found that there were significant differences between easy and difficult students for Workaholic, Promoter, and Dreamer energies.

This study confirms previous findings in that there was a statistically significant difference in achievement between easy and difficult students for GPA. Gilbert (2010) found that "easy students performed significantly better than students identified by their teachers as difficult." In this study, the mean GPA for easy students (3.24) was significantly higher than difficult students (2.55). The research from this study supports the notion that effective communication has a positive impact on GPA, one measure of student achievement. It supports Gilbert's premise that "grades are partially the ability of students to meet teacher expectations" (2012, p. 47). This study takes the next step and examined whether the same premise could be made for other measures of student achievement. Differences in achievement between easy and difficult students were not observed with the reading MEAP and math MEAP measures. Findings show that student performance on the reading and math MEAP tests, both external standardized tests, do not have the same implications as GPA, a local measure.

While the MEAP is a standardized test used to measure the success of a school, it is not a measure created by the expectations of individual classroom teachers. Rather, the MEAP is a measure of teacher performance in the classroom, aligned to state standards, based on individual student scores. This study also showed that there were significant differences between GPA and MEAP scores, or local and external measures of student achievement.

Implications for practice

The ability of a teacher to connect with students can have a significant impact on student achievement. For academic measures that align with teacher expectations such as GPA, communication is essential for student understanding of teacher outcomes in an effort to reach success. To best serve students and prepare them for the 21st century, teachers need to be able to help guide students to meet proper goals that will get students ready for life after high school. Goals need to align with standards aimed at getting students college- and career-ready. In addition to proper goal setting, teachers need to connect with students on an individual basis through effective communication and a delivery method that is most conducive to individual student learning. Communication gives support to other research-based best practices. This is especially necessary with GPA being a large component for the college application and selection process after high school. Communication can have a large influence on whether or not students make the grade and are accepted into the college or university of their choice. It is recommended by this study that administrators, teachers, secretaries, and other staff members who interact with students have training in how to connect with or communicate effectively with students. Specifically, it is recommended that educators participate and utilize the Process Education Model (PEM) training designed to help educators better understand how students prefer to communicate and what motivates them in an effort to better accommodate individual needs.

PEM is “the updated educational applications of the Process Communication Model” (Gilbert, 2010, p. 3). Individuals, including students and educators, are unique and different but have common patterns that are exhibited based on personality structures (Kahler, 2009). PEM can help educators to understand these patterns and give practical strategies on how to best accommodate student needs (Gilbert, 2010). Educators need to be equipped with the necessary tools to be strategic at meeting the needs of individual students and communicating effectively.

It is also recommended that school districts and intermediate school districts offer professional development that includes training on communicating effectively with students and focusing on the individual needs of students. Differentiated instruction helps teachers tailor instruction in response to individual needs allowing for different avenues to learn content (Tomlinson & Allan, 2000; Tomlinson, et al., 2008; Fuchs & Fuchs, 2006). When planning professional development for teachers, administrators and school improvement teams should strongly consider providing teachers with the tools necessary to connect with all students to help give fidelity to other best practices. Giving teachers the opportunity to communicate with students by considering student preferences will increase the likelihood that students will meet teacher expectations in the classroom. At-risk students require a learning environment that focuses in individual learning preferences (Gilbert, 2005). The outcome of understanding and meeting teacher expectations can ultimately result in higher student achievement as measured by GPA. An increase in GPA can give students more options after high school graduation for both college selection and career opportunities.

Finally, it is important for educators at the college level training instructors, administrators, and teachers in the classroom to understand the importance of aligning various measures of student achievement because of the noted differences between GPA and MEAP

scores found in this study. Once aligned, educators need to be able to clearly communicate the adopted state expectations with students to set goals, provide instruction, and provide appropriate feedback regarding levels of proficiency. Helping educators align classroom expectations with state expectations should be done at the pre-service and in-service levels to help increase the efficiency of teachers. The MEAP measures have an impact on determining a teacher's effectiveness, and a student's GPA influences admittance to colleges after high school graduation. Teacher preparation institutions need to prepare teachers to assess students in a way that is more closely aligned with 21st century standards and expectation set forth by the state. Administrators need to have an understanding of this to know how to lead teachers best and hold them accountable.

Recommendations for Further Research

1. The results of this study show that there was a difference in communication preferences between teachers and both easy and difficult student groups. It also shows that there is not a difference between the easy and difficult student groups. Teachers chose their own criteria for identifying students as easy or difficult. If teachers were given more specific criteria for identifying students, the sample may have been more precise. Giving teachers specific criteria for identification may have an impact on results.
2. Additional items to be noted in this study were the sample size and population. There was a large standard deviation and range in personality preferences within the easy and difficult student groups that was likely a function of the sample size. While an effort was made to contact all Class B and C public school administrators, responses for participation were low. Adding Class A and D schools and including sixth and eighth

- grade levels to the population would have likely increased the sample size. Additional research should examine the relationship between ability to communicate with students and student achievement with a larger and expanded sample to include other grade levels.
3. Future studies might use a larger sample size including additional testing areas not limited to reading and math. More research should be conducted using additional student achievement measures such as the ACT or other standardized tests.
 4. There were significant differences in achievement levels between easy and difficult students observed in this study for local measures such as GPA, but the same findings were not true for external measures such as MEAP test scores. Additional research should be conducted with a similar study focusing the sample on schools that use a standards-based system of assessment.
 5. While the sample teacher population had some similarities in personality strengths cited in previous research, the lower numbers for the teacher and student sample may have had an effect on the outcomes in the study. Another study should focus on teacher personalities to determine if there is a difference in student success based on the energy levels of teachers. Research should examine the energy levels of individual teachers to determine if the amount of available energy is related to higher student achievement scores.
 6. The researcher made an effort to get participants from all regions in the state of Michigan, but there were not enough participants to draw a generalizable conclusion about the data regionally across the entire state of Michigan. Additional research might investigate differences in achievement to gain insight as to if there may be differences in student achievement that exist regionally.

The focus and emphasis on student achievement in the 21st century is a concern of many American educators. A quality education in the U.S. is a requirement to becoming a productive citizen in our democratic society. Preparing students for the real world after high school requires a skill set that includes connecting with all students on an individual level to positively impact student achievement. Never before has there been such urgency and desire for educators to ensure that all students are performing at high levels of proficiency. A teacher's ability to connect with students can impact the overall success of students. This study helps provide teachers with the resources and tools to be able to connect with more students increasing a student's chance of being successful at school and in life.

APPENDICES

APPENDIX A

LETTER TO ADMINISTRATORS



Dear Superintendent/Principal,

I would like to invite seventh grade English Language Arts and math teachers and students in your district to be involved in a study to help teachers understand how to best teach students. The purpose of this study is to determine if there is a relationship between a teacher's ability to communicate with students and student achievement.

Any information obtained during this study will be kept strictly confidential. Teachers will be asked to identify five students that they communicate with easily and five that they have difficulty communicating with and share the criteria used to identify students. Teachers and students will complete an online inventory to determine communication preferences. Student achievement data will also be examined. GPA for the previous school year and the most recent available MEAP scores in math and reading will be used in this study. Permission from teachers, parents, and students will be obtained to participate in the study.

Teachers who fulfill all requirements of the study will be eligible to enter a drawing to win a Kindle Touch. If all teachers fulfill the requirements of the study then chances of winning are 1 in 20. Participants are free to refuse to participate in this study or to withdraw consent and discontinue participation at any time.

If you would be willing to allow your teachers and students to participate in this study, would you please reply to me through e-mail with a letter of permission? If you have any questions please call or e-mail me at the phone number or address below.

Thank you for your consideration.

Sincerely,

Alison M. Cicinelli, Doctoral Student
Central Michigan University
Department of Educational Leadership
Mt. Pleasant, MI
Phone: 989-284-2160
E-mail: Alihon13@gmail.com

APPENDIX B

LETTER TO TEACHERS



Dear Teacher,

You are invited to be involved in a study to help teachers understand how to best teach students. You are being asked to participate because you are a seventh grade English Language Arts or math teacher. The purpose of this study is to determine if there is a relationship between a teacher's ability to communicate with students and student achievement.

I have contacted your superintendent to obtain permission for you to participate in this study. Any information obtained during this study will be kept strictly confidential. You will be asked to identify five students with whom you communicate with easily and five with whom you have difficulty communicating, and share why you chose those students. You will complete an online inventory about communication preferences that will take approximately 45 minutes. You will also guide the students you choose to take the same online inventory. In addition to the inventory, student's GPA for the previous school year and the most recent available MEAP scores in math and reading will be used in this study. In order to participate in this study parents and students must give their permission. You will be asked to obtain consent (parental permission) and assent (student permission) forms to participate in the study. If a student you choose does not have the necessary forms to participate in the study then you will make an attempt to find a replacement.

Teachers who fulfill all requirements of the study will be eligible to enter a drawing to win a Kindle Touch. If all teachers fulfill the requirements of the study then chances of winning are 1 in 20. You are free to refuse to participate in this study or to withdraw your consent and discontinue participation at any time.

If you would be willing to participate in this study please let me know as soon as possible, and I will send you the necessary forms for participation. If you have any questions please do not hesitate to ask. You can call or e-mail me at the phone number or address below.

Thank you for your consideration.

Sincerely,

Alison M. Cicinelli, Doctoral Student
Central Michigan University
Department of Educational Leadership
Mt. Pleasant, MI
Phone: 989-284-2160
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APPENDIX C

PERSONALITY PATTERN INVENTORY

Personality pattern inventory

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	Question	Response 1	Response 2	Response 3	Response 4	Response 5	Response 6
1	The most valuable parts of my personality are those that	give and take information and organize it.	have flexibility, creativity, and a joy for life.	I let few people look into.	show sensitivity and respond to the feelings of others.	have high ideals, morals and expectations.	find clever ways of taking care of myself.
2	I prefer to be with friends who	respect my beliefs and principles.	like excitement and want to have a good time.	provide a lively exchange of interesting ideas.	are creative, fun and do their own things.	are warm and accepting.	respect my privacy.
3	I would prefer my work/study area or room to be	warm and cozy, with soft earth colors. My "nest" is important to me. The smell of candles and flowers, comfortable furniture and pleasant music are important to me.	function, organized, and tidy. I like things kept clean and in their proper places. Awards, diplomas, or pictures should be hung symmetrically and kept in place.	organized and functional. An environment that has a traditional flavor and a certain cultured, cosmopolitan, or sophisticated atmosphere.	a place where I can enjoy myself. I would have posters, games for people, and maybe collections of fun things.	expensive looking with thick carpets and fancy furniture. I like bright colors like reds and blacks.	a place to work or live. My environment is not that important to me, so I would not take all that effort to have flowers or candles. I would prefer a place more to myself out of the flow of traffic.

4	After being upset, I am likely to experience	the other person still not accepting my opinions.	"I'll show you."	feeling hurt or rejected.	frustrated at someone else's stupidity.	"who needs you."	myself withdrawing and being alone.
5	An ideal relationship for me would be to have a friend who	likes to do fun, spontaneous, playful things with me.	recognizes the hard work I do, how responsible I am, and how I plan my time.	respects my opinions and believes in me and my values.	allows me my own space, pace and privacy.	is warm, nurturing, and caring - someone who cares about me and how I feel.	can handle being on the "fast track," and who likes excitement; who'll follow my lead.
6	When things go badly, I	feel hurt, and then vengeful.	go off by myself and seem not to feel much.	feel unloved or rejected.	dig in and hold firm with my beliefs.	push others away verbally.	look out for number one.
7	I prefer	excitement.	people.	ideas.	values.	privacy.	fun things.
8	As a child, I	was the eldest or the only child (or was treated as if I were). I had to be the responsible one.	was withdrawn and shy. I discovered I could use my imagination and daydreams.	enjoyed belonging in the family and wanted to be loved and nurtured.	had a parent who instilled in me strong beliefs and convictions. I learned how to value integrity and honor.	liked animals, loved to play and have fun, and got bored easily.	came from a family that was not that close. I sometimes thought that I did not belong. I was pretty much on my own to make it. I liked to play "war" and became street-wise real early.

9	The part(s) of my personality that I seem to use a lot are	a concerned, nurturing, taking-care-of-others part.	a clear thinking, logical one.	a logical, thinking one with some emphasis on values, opinions, and judgments.	an imaginative one. I tend to let my mind drift in time and space.	a fun, playful, sometimes very active one.	a clever one to get me out of tight spots. Sometimes I need to be tough, sometimes charming.
10	When in distress, with which of the following do you most closely identify?	"I feel awful when I let others down."	"I try to be responsible. I even take on more than my share."	"Without morals and ethics, people are dangerous."	"I seem to be the one always left out."	"I'll show you; it's not always my fault."	P.T. Barnum was right, there are "fools, and people who make fools of fools."
11	Often I	try but it's really hard sometimes.	expect others to look out for themselves.	try to please almost everyone.	have high expectations for other people.	experience myself in a shell-like world.	am driven to excel and achieve.
12	People know that I like them by my	respecting their privacy and alone time.	playing and having fun with them.	trusting them to do something "big" and exciting with me.	being warm, close and caring.	planning, thinking and working hard.	having values, and being loyal and devoted.

13	In general, I have preferred	being alone with my fantasies, daydreams or using my imagination. Sometimes, I prefer doing things that do not require lots of energy thinking all the time.	being with my friends and doing our thing, even though others may not approve or understand.	to live for today. I have been a loner and done my own thing.	being with people and especially feeling wanted, accepted, and important when I am in a group.	either being alone and thinking or planning, or being with one other person in a stimulating, intellectual, or thought-provoking discussion.	either being alone and thinking, organizing, or philosophizing, or being with one other person, sharing beliefs, opinions, or views on politics, religion, or current events.
14	My strengths are my abilities to	receive and process information to solve problems.	play, have fun and be creative.	nurture and care about others.	do tasks others might find boring.	adapt, survive, and make things happen.	stick with my beliefs, even under pressure.
15	Some of my friends might say I am too	sentimental.	much of a free spirit.	work oriented.	manipulative.	set in my beliefs.	shy.
16	At work (or when involved in a project or task) I would rather be	involved in the creative, less structured part of a project.	involved in an exciting, short-term project.	surrounded by friends.	requested to structure and organize projects.	given a project that requires stick-to-it-iveness and that will be important.	given a task to do alone, but with lots of directions.
17	Often I	find my private place to be alone.	get bored with routines, and have to get some stimulation.	take on more responsibility and want to achieve.	have a desire to give to others love and affection and to be given to.	crave excitement and quick rewards.	am driven by a mission and a desire to convince others of what they should believe in.

18	I sometimes experience	myself withdrawing into a shy, shell-like appearance. It is as if I am in a world all by myself.	myself wanting to please others in hopes of being accepted. Sometimes I have a hard time saying "no" or putting myself first.	others being upset with me. It is difficult for me to accept that things "be done so perfectly" or that there have to be so many "rules".	putting lots of pressure on myself to be perfect in order not to make mistakes, or in order that others will understand me just right, I often over qualify or need to explain myself.	myself taking care of "me" and expecting others either to get behind me or get out of the way.	myself believing in something, or having a strong conviction or opinion that I launch a "crusade" or preach "at" those who won't see the truth.
19	A saying for me could be	"Stick to it and trust in your beliefs."	"Do your own thing."	"Look out for number one."	"It's better to give than to receive."	"Work now, play later."	"Don't make waves."
20	Of the following animals, friends would see me as a(n)	turtle.	"mother hen".	cat.	beaver.	owl.	fox.
21	I would give up last my	beliefs.	warmth.	clear thinking.	ability to adapt.	alone time.	knack for fun.
22	I sometimes have a longing for	the excitement and "rush" of a new project, opportunity or quest.	a cause to give myself to.	a quiet place and time for reflection or meditation.	deeper and more intimate friendships.	a chance to cut loose, have fun and just be myself.	more order, information and intellectually challenging problems.

23	In important friendships in the past when there was an unpleasant ending, I	just wanted to please my friend, but it seemed the more I gave, the less I got. I ended up feeling rejected and unloved.	tried to make things fun. The more I tried, the more I got criticized. I felt hurt and angry at being rejected and ignored.	got tired of the demands on me and my time after I had worked hard all day and been responsible enough to meet my obligations. I would get frustrated and even lose my temper occasionally.	couldn't seem to convince my friend how important some things in life are...having goals, commitments, or strong beliefs by which to live. I'd even find myself "preaching" sometimes.	couldn't seem to express what was going on inside of me. I have had difficulty even with closest friends making lively conversation. The more my friends expected me to be involved and outgoing, the more I seemed to withdraw.	knew when to cut my losses and move on.
24	I see myself sometimes	having people criticize or reject me.	giving people advice, or even preaching at them.	frustrated that people won't look at the facts.	egging people on just to see them boil at me.	shutting down and pulling away.	pitting people against each other to see them argue or fight.
25	When at the end of my rope, I am likely to experience	being left out and wondering what happened.	becoming intolerant of and forsaking others who are not as dedicated as I am.	wanting to get even or "show them who's boss."	being blamed by others but feeling blameless, criticized or rejected.	feeling rejected and wondering why they don't like me.	becoming critical of people who "act stupid" wondering why they can't think straight.
26	In grade school, I was probably seen as	Mr./Miss Opinions.	Mr./Miss Information.	Mr./Miss Nice.	Mr./Miss Clown	Mr./Miss Daydreamer.	Mr./Miss Cut-A-Deal.

27	I would agree that the secret to a successful life is	to chill out. Have fun, be yourself, and let the creative juices flow.	to have strong values and beliefs and be committed to your mission in life.	to go through life avoiding too much attention and giving little resistance.	to go for it. Make it happen! Don't be afraid to take a risk. You are what you do.	to be logical, think clearly and work hard.	to be compassionate, caring and loving to everyone.
28	When I have physical pain, I most likely feel it in my	chest.	back.	neck and shoulders.	all over.	bottom.	stomach.
29	I am more likely to listen to a salesperson who	knows his/her product and can answer my questions accurately.	is a bottom liner like me who cuts through the red tape and cuts me a deal.	is trustworthy and appreciates the value of things.	has a lighter approach and makes purchasing more fun and less work.	takes initiative, tells me what I need to do and leads me through the sale.	is genuinely friendly and concerned about my needs.
30	I am more likely to buy a product that	is first offered to me that meets my needs.	has eye appeal and looks pricier than it really is.	is unique, fun or has a whimsical quality that I think is peculiar or fun.	I feel comfortable with and fits me best.	dependably serves the purpose for which it was made.	has good workmanship and quality.
31	People I like the least are	unprincipled.	gutless.	insensitive.	unreasonable.	intrusive.	boring.
32	If I were in charge of an office, I would make work a place to	build relationships and encourage and support others.	create few waves while seeing or conceptualizing things in unusual ways.	gather information, analyze data and plan a consistent approach.	observe closely, compare to an internal standard or ideal and then identify problems.	size up the opportunities then move rapidly, taking whatever risk is necessary.	stay loose, generate energy and use my creativity to overcome obstacles.

33	When disagreements arise I am most likely to	be confounded that others won't listen to my opinions.	feel myself withdrawing and needing to be alone.	get the one who tried to get me.	feel hurt, rejected or personally unappreciated.	frustrated that others are too emotional and not trying to solve a problem like I am.	feel misunderstood, judged and get vengefully angry.
34	Which of the following statements ring "true" for you?	"Everyone should have a mission in life."	"Still waters run deep."	"There is no friend like an old friend."	"Just the facts, please."	"Strike while the iron is hot."	"Either I like it, or I don't."
35	A prominent part of my personality is that which	invites others to have fun, be spontaneous and express their individuality.	likes to network, influence, and persuade others to make things happen.	likes to give to others, encouraging and building them up.	identifies a goal, gathers information and then proceeds in a logical way.	knows what is right and sticks to it.	tends to hold back unless asked to join in and share.
36	Most recently in my life I seem to be more concerned with	if I am doing a good job or not.	if I am really doing what's right.	how safe and secure I am.	whether or not people like me.	creating an image of success.	if I am really being myself and having fun.
37	The way others know I love them is by my	open physical affection and verbal expressions of love and caring.	providing for them in reliable and responsible ways.	being dependable, trustworthy and someone in whom they can place their trust.	making few demands and giving them their space.	buying them nice things, going on exciting vacations and providing other experiences.	spending time with them doing activities, sports, arts and crafts or just hanging out.
38	I come to know others by	what they imagine.	how they react.	what they do.	what they feel.	how they think.	what they believe in.

39	I seek	respect.	privacy.	excitement.	acceptance.	accomplishment.	fun.
40	An effective leader knows that people need	more responsibility, education and fair treatment.	a chance to seize opportunities, unencumbered by rules, regulations and paperwork.	to be spontaneous, express themselves in an atmosphere of acceptance and appreciation for their creative gifts.	a moral and ethical structure in which they can trust.	clear directions and a secure and consistent structure.	to be loved and cared for.
41	Even in the first minute or so, I can tell that I would continue to listen to a candidate who said things like	"Let's reflect on...", "don't want to offend..."	"I feel...", "in my heart..."	"I can handle it...", "bottom line..."	"I think...", "the facts are..."	"I believe...", "we should..."	"I don't like...", "I like..."
42	If I were to be praised, I'd prefer to hear someone say	that I'd done a good job.	that they admired my commitment.	that I deserve some time to myself.	that I really made things happen.	that they like me as a person.	that I was creative and fun to be with.

43	I would vote for a president who was able to	recognize people for who they are inside, not for what they do. Such a leader unconditionally cares about people and lets them know that they are appreciated and accepted.	schedule time efficiently and recognize hard work, performance and task completion abilities in people.	make it happen, call the shots, and when the going is the roughest show who is the toughest!	recognize dedication, loyalty, perseverance and commitment in people, as well as rewarding them for believing in and accomplishing their duties and tasks.	be spontaneous, playful, joking, fun and humorous with people.	respect that some people need their own space and privacy – a time to be alone and reflective.
44	An effective leader is	calm.	charming.	playful.	compassionate.	logical.	dedicated.
45	Money means (to me)	privacy.	a way to chill out (more "toys" or fun things).	the means to care for others.	excitement.	reward for hard work.	security.

APPENDIX D

ADULT CONSENT FORM



Adult Consent Form

Study Title: Communication Styles: An Examination of Ability to Communicate with Students and Student Achievement in Michigan Public Schools

Investigators:

Alison M. Cicinelli
Doctoral Student and Researcher
Department of Educational Leadership
Central Michigan University
alihon13@gmail.com
989 284-2160

Michael B. Gilbert, Ed. D.
Professor and Chairperson
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989 774-7699

Introductory Statement You are invited to participate in this research study. The following information is provided to help you make an informed decision whether or not to participate. If you have any questions, please do not hesitate to ask.

What is the purpose of this study? The purpose of this study is to determine if there is a relationship between a teacher's ability to communicate with students and student achievement.

What will I do in this study? You will be asked to identify five students with whom you communicate with easily and five with whom you have difficulty communicating. You will be asked to share the names of the students you identify and the criteria used to identify students. You will be asked to obtain consent and assent forms from students to participate in the study. If a student does not have the necessary forms to participate in the study then you will make an attempt to identify a replacement and obtain the proper forms. You will complete an inventory that will help to determine your communication preferences. Finally, you will be asked to help students complete an inventory that will help to determine his or her communication preferences.

How long will it take me to do this? It will take about 30 minutes to identify students and share the criteria used to identify students. It will take about 15 minutes to obtain signatures for consent and assent forms from students. It will take you and your students about 45 minutes to complete the inventory, which can be done online, either at home or at school.

Are there any risks of participating in the study? There is the potential for social risk if your responses to the criteria used to identify students were to be disclosed. However, you will not be identified specifically in the reporting of results. Teacher pseudonyms will be used, where necessary, in reporting results to maintain confidentiality and anonymity.

What are the benefits of participating in the study? The outcomes of this study will show whether teachers who communicate effectively with students affect student performance.

Will anyone know what I do or say in this study (Confidentiality)? Any information obtained during this study that could identify you will be kept strictly confidential. The results of the study may be published in educational journals, other publications, or presented at educational meetings, but your identity will be kept strictly confidential. Consent forms will be maintained separately from other study information.

Will I receive any compensation for participation? Teachers who fulfill all requirements of the study will be eligible to enter a drawing to win a Kindle Touch. If all teachers fulfill the requirements of the study then chances of winning are 1 in 20.

Is there a different way for me to receive this compensation or the benefits of this study? no

Who can I contact for information about this study? You may contact the investigators listed above with any questions you may have.

You are free to refuse to participate in this research project or to withdraw your consent and discontinue participation in the project at any time without penalty or loss of benefits to which you are otherwise entitled. Your participation will not affect your relationship with the institution(s) involved in this research project.

If you are not satisfied with the manner in which this study is being conducted, you may report (anonymously if you so choose) any complaints to the Institutional Review Board by calling 989-774-6777, or addressing a letter to the Institutional Review Board, 251 Foust Hall Central Michigan University, Mt. Pleasant, MI 48859.

My signature below indicates that all my questions have been answered. I agree to participate in the project as described above.

Signature of Subject

Date Signed

APPENDIX E

TEACHER IDENTIFICATION FORM

Please complete this form and email it to alihon13@gmail.com

School _____ id # 0000

Teacher _____ id # 0000

Which five students do you communicate with easily?

1. _____ id # 0000

2. _____ id # 0000

3. _____ id # 0000

4. _____ id # 0000

5. _____ id # 0000

Which five students do you have a difficult time communicating with?

1. _____ id # 0000

2. _____ id # 0000

3. _____ id # 0000

4. _____ id # 0000

5. _____ id # 0000

What criteria did you use to identify students that you communicate with easily?

What criteria did you use to identify students that you have difficulty communicating with?

APPENDIX F

PARENT/GUARDIAN CONSENT FORM



Parent/Guardian Consent Form

Study Title: Communication Styles: An Examination of Ability to Communicate with Students and Student Achievement in Michigan Public Schools

Investigators:

Alison M. Cicinelli
Doctoral Student and Researcher
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989 284-2160

Michael B. Gilbert, Ed. D.
Professor and Chairperson
Department of Educational Leadership
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989 774-7699

Introductory Statement We are asking your permission for your child to be involved in a study to help teachers understand how to best teach students.

What is the purpose of this study? The purpose of this study is to determine if there is a relationship between a teacher's ability to communicate with students and student achievement.

What will my child/ward do in this study? Your child's teacher has identified five students that they communicate with easily and five students with whom they have a difficult time communicating. Your child was chosen as a student that their teacher communicates with easily or has difficulty. Your child and child's teacher will be asked to complete an inventory that will help to determine his or her communication preferences. We will also examine your child's record of academic performance. We will look at your child's GPA and MEAP scores in math and reading to see if there is a relationship between a teacher's ability to communicate with students and student achievement.

How long will it take my child/ward to do this? It will take your child about 45 minutes to complete the inventory, which can be done online, either at home or at school.

Are there any risks of participating in the study? There are no physical risks for your child's participation.

What are the benefits of participating in the study? The outcomes of this study will show whether teachers who communicate effectively with students affect student performance.

Will anyone know what my child/ward does or says in this study (Confidentiality)? Only research staff will analyze the information collected for this study.

Will my child/ward receive any compensation for participation? There is no compensation offered to participate in the study.

Who can I contact for information about this study? You may contact the investigators listed above with any questions you may have, or you may contact the person listed below at your child's school.

You are free to refuse to allow your child/ward to participate in this research project or to withdraw your consent and discontinue your child/ward's participation in the project at any time without penalty or loss of benefits to which you are otherwise entitled. Your participation will not affect your child/ward's or your relationship with the institution(s) involved in this research project.

If you are not satisfied with the manner in which this study is being conducted, you may report (anonymously if you so choose) any complaints to the Institutional Review Board by calling 989-774-6777, or addressing a letter to the Institutional Review Board, 251 Foust Hall Central Michigan University, Mt. Pleasant, MI 48859.

My signature below indicates that all my questions have been answered. I agree to allow my child participate in the project as described above.

Signature of Parent/Guardian

Date Signed

Name of Child/War

APPENDIX G

CHILD ASSENT FORM



Child Assent Form

Study Title: Communication Styles: An Examination of Ability to Communicate with Students and Student Achievement in Michigan Public Schools

Investigators:

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989 284-2160

Michael B. Gilbert, Ed. D.
Professor and Chairperson
Department of Educational Leadership
Central Michigan University
gilbelmb@cmich.edu
989 774-7699

What is this research about? We would like you to join in a research study about how teachers communicate effectively with students. You can ask a question at any time and you can say no anytime you want to. Your parents or legal guardian said that it is OK for you to be in this study, but we want to let you choose if you want to do this.

What will happen to me in this research? We will ask you to answer some questions about yourself. You will be able to answer the questions online.

How long will it take me to be in your research? It will take you about 45 minutes to answer the questions.

Can anything bad happen to me? There is nothing bad that will happen to you in any of these activities.

Can anything good happen to me? The good thing is that you can help us understand how effectively teachers communicate with students.

Do I have other choices? You may choose not to do this.

Will anyone know I am in the research? Only those people conducting the study will know that you are in it.

Will I be paid? no

Who can I talk to about the research? If you have any questions, you can talk to your principal or to the investigators listed above.

What if I do not want to do this? You do not have to be in this research study. You can say no at any time. No one will be upset with you if you stop.

SIGNATURE CLAUSE

Do you want to be in the study?

Yes, I want to be in the study *No, I do not want to be in the study*

Name of Child (Print)

Signature of Child

Date

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