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PERCEPTIONS OF TEACHER EFFICACY IN CHANGING TIMES

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ABSTRACT

The purposes of this study were twofold: determine how teacher perceptions change over time in their ability to create a desired effect on student learning and examine the differences between principal and teacher perceptions of teacher efficacy. Principals and teachers at 150 public schools, broken down as 50 from elementary schools with a grade configuration of pre-kindergarten through Grade 5, 50 from middle schools with a grade configuration of Grade 6 through Grade 8, and 50 from high schools with a grade configuration of Grade 9 through Grade 12 were selected to participate in the study. Each principal was sent the Teacher Efficacy Survey for principals and was asked to forward the Teacher Efficacy Survey for teachers to their teaching staffs. Of the 150 schools chosen from the population for participation in the study, 52 principals and 171 teachers responded to the survey. The principal return was 35%. The number of teachers in the sample population was undetermined due to the lack of knowledge regarding how many teachers actually received the instructions from their principals. Statistical analysis of the data included descriptive statistics comparing each of the 20 questions to the average scores of all questions for teacher and principal groups. A paired samples two-tailed *t*-test or an analysis of variance (ANOVA) was used to test the 10 null hypotheses. The level of significance for the analyses of variance was set at .05. Three of the 10 hypotheses were found to have a significant difference in perceptions of teacher efficacy among teachers in various grade level configurations, principals in various grade level configurations, and between male and female teachers. No significant differences were found among teachers with various experience levels,

between the teachers and principals of each of the grade level configurations, among teachers in various school sizes, among teachers of different ages, and among schools in various geographical settings. Perceptions of teacher efficacy did differ among teachers in elementary school, teachers in middle school, and teachers in high school with teachers in elementary schools having the highest degree of teacher efficacy, teachers in middle school having the second highest degree of teacher efficacy, and teachers in high school with the lowest level of teacher efficacy among the three groups. These perceptions of teacher efficacy among principals in elementary schools, principals in middle schools, and principals in high schools also differed very similarly to those of teachers with elementary school principals having the highest degree of teacher efficacy, principals in middle school having the second highest degree of teacher efficacy, and principals in high school with the lowest level of teacher efficacy among these three groups. Along with the findings that female teachers have a higher degree of teacher efficacy than male teachers, this research supports that of others in that teacher efficacy is mostly formed during the student teaching and first year of employment for teachers. It is important that young teachers receive needed support and guidance as they form their perceptions of teacher efficacy through mastery experiences.

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CHAPTER 1

INTRODUCTION

The Problem

With the changing times and increased accountability for schools and teachers, teacher efficacy continues to be an important issue. First realized in a Rand study in 1976 (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), teacher efficacy has been studied for effects on student learning and a plethora of other characteristics related to teaching and learning. Indiana's schools have experienced the accountability placed on them through Public Law 221. Now, with a revision to the Indiana Code through Senate Enrolled Act 1 requiring all teachers to be evaluated and paid based on their evaluations, teacher performance expectations have changed yet again.

This study examined the self-efficacy that teachers have regarding their abilities to produce a desired effect. The efficacy of newer teachers, mid-career teachers, and veteran teachers was compared to determine if the varied experience levels of teachers found a difference in teacher efficacy. An examination of varied school levels, demographic categories, and principal perceptions of teacher efficacy was also made to determine if any differences exist among those characteristics.

Overview

As with many professions and institutions, formalized public education in the United States has changed a great deal since it was created in the 19th century. From one-room schoolhouses to large corporations with hundreds of schools, schools have grown, split, and consolidated as our country has become more populated. Varying levels of personnel have been added from principals, superintendents, cooks, custodians, secretaries, teacher assistants, special education teachers, English as a second language (ESL) teachers, librarians, and various other directors to support the school in its endeavor to educate the children of the community. Throughout this expansion and change, one thing has always remained constant. That is the classroom teacher.

The classroom teacher has always been the primary conduit for delivering instruction to students. He or she has the explicit duty to impart knowledge to all students assigned to his or her class. The challenge for the classroom teacher to reach each student in his or her class and to provide them with the knowledge and understanding of specific academic content is as broad as each class is diverse in student make-up. Although a classroom full of students may have been as equally challenging in the 19th century as it is today in the 21st century, the demands placed on teachers to perform have changed.

There was a time when all that teachers had to do was to teach children reading, writing, and arithmetic and make the community happy. How much or how little was taught depended on the quality of the teacher and the quality of the student. Today, information is created at an amazing rate. In *The Diverse and Exploding Digital Universe*, Gantz (2007) cited that the amount of information created increases at an exponential rate with information in 2011 projected to be 10 times what it was in 2006. With such an enormous amount of information

readily available to our population through electronic sources, loading students' brains with information is not as important as it was many years ago. Society has drastically changed and the educational needs of our youth have changed just as much. The idea that we are preparing students for a work life that is quite different than we can imagine was captured in a short but very popular documentary titled *Shift Happens* (Teacher Tube Videos, n.d.). In this video it was shared that "we are currently preparing students for jobs that don't yet exist using technologies that haven't been invented in order to solve problems that we don't even know are problems yet" (Teacher Tube Videos, n.d.). Suffice it to say, teachers are no longer the keepers of knowledge.

What teachers are expected to know and do has also changed throughout the years. Although many factors have remained constant, what teachers are held accountable for is more scrutinized today than it ever has been. When Public Law 221 (PL221) was passed, it "established major educational reform and accountability" (Indiana Department of Education [IDOE], 2010, para. 1). With PL221, the pressures placed on teachers to perform have continued to increase.

Teachers have always had a diverse population to teach; however, not all children needed an education to be successful breadwinners for their families. In 1950, only half of the White and a quarter of the Black school-age populations graduated from high school (Goodlad, 1984). Many people who chose not to obtain a high school diploma could work on farms or in factories as those jobs were more abundant during the middle of the 20th century. Simply put, those students who could not learn from the teacher utilizing that instructor's chosen pedagogy stopped participating in school and dropped out. Today, teachers and administrators must succeed with all students, regardless of their students' abilities.

A part of PL221 and the No Child Left Behind Act (NCLB) requires that schools show improvement with all sub-groups including special education students, ESL students, high ability students, students of poverty, and even boys and girls (IDOE, 2010). Teachers have to teach all students and schools are held accountable for the success of all students.

In addition to PL221 and NCLB, Indiana teachers are now faced with meeting the requirements of Senate Enrolled Act 1. A recent assertion made by Elliott (2011) summed up where we have been and where we are going in regards to teacher evaluations when he wrote, “The days are gone in Indiana where rating all teachers *excellent* every year in all categories are acceptable” (Elliott, 2011, para. 8). The revision to Indiana Code (IC) 20 is broad and makes significant changes to the profession of teaching (Cavanagh, 2011). Beginning with the 2012-2013 school year, Senate Enrolled Act 1 requires that all teachers be evaluated based on their performance and categorized as either highly effective, effective, improvement necessary, or ineffective (IC 20-28-11.5 [Section 4(c)(4)]).

Along with these new required ratings, teachers now will see their category rating directly related to their pay. Teachers rated ineffective or improvement necessary under IC 20-28-11.5 (Staff Performance Evaluations, 2011) may not receive any raise or increment for the following year if the teacher’s employment contract is continued. Teachers are concerned about fairness of this new law when they have more on their plates, less funding, and less time for planning and professional development (Sloan, 2011). The pressure being placed on teachers to perform, and now to have their compensation linked to their performance, is mounting.

Teacher compensation models designed more than half a century ago provided a way to promote both gender and racial equity along with an ability to protect teachers from administrators who may make capricious employment and pay decisions. These models also

encouraged teachers to pursue advanced degrees (Center for Teaching Quality, 2008). The 2012-2013 school year will find vastly different compensation models for teachers that are designed to reward the best teachers, but teachers fear that evidence of student learning attributed to individual teachers is tricky. Charlotte Danielson, a national leader in teacher evaluation, said that “nobody on the planet has figured out how to do this” (Elliot, 2011, para. 12).

Along with these pressures and changing climate in education come the diverse needs of our society. The workforce that students are being prepared for is vastly different from the one that high school graduates entered 20 or 30 years ago. Production is now facilitated more through technology, and managing that technology is easier to do through the increased communication capabilities created in the late 20th century. Today, a call is placed to a foreign country to receive technical assistance for problems one is experiencing with an item that was purchased from a local electronics store. Along with communication, transportation and information are seen on a global scale. One can sell one’s wares on the Internet from any place in the world and easily ship items across the planet in a few short days. It is not enough for businesses to be competitive with others in their own communities; now they must be competitive with businesses throughout the world (Friedman, 2005). Local communities just got much larger.

In order for teachers to prepare students to be successful in a smaller world, they must teach them to be better thinkers and users of information. It is widely known that people will have many more careers than those who lived in the middle of the 20th century. Teachers now must provide tools for students to learn what they are teaching students today and for what students will learn tomorrow. Those in the workforce not specializing in services needed in the 21st century must be more adaptable. In order for them to do that, they must be quick learners.

This change in our society and global culture has increased the importance of a quality education. “The reality of today’s world is that the global economy provides few decent jobs for the poorly educated” (National Education Commission on Time and Learning, 1994, para. 16). Not only is education becoming more essential, the ability to learn beyond one’s time in school is becoming paramount to a successful transition into being a gainfully employed citizen.

Teachers fight the many attention-grabbing activities of students. Students have many more opportunities for occupying their time and thoughts. The number of television channels has increased to over 118 on average per home in the United States (Nielsen Company, 2008). With video games, computers, and a wider array of entertainment devices, students are used to immediate gratification and entertainment at a very high level. Students can more easily occupy their thoughts and time with media targeted to their individual desires. That alone is difficult for the classroom teacher to compete with.

Today, teachers must grab a student’s attention and hold it in order to teach him or her at the highest level. Although teaching tools have improved greatly and access to a wider variety of media has provided more materials for teachers to utilize, teachers must constantly work to develop lessons that are engaging. Student engagement is difficult for teachers who grew up with fewer activities to occupy their time when they were children themselves. Simple lectures with students taking notes and being tested over such material is an instructional strategy that worked in a time when expectations for learning were less and fewer students were required to be successful in the public school. That strategy no longer works all of the time. Teachers compete with other sources of information that include blogs, list-serves, e-bulletin boards, emails, texts, web sites, cable or satellite television; the list goes on.

Teachers learned to teach from their own elementary and secondary teachers (Pollock, 2007). That age-old belief is in conflict with our changing educational climate. Our school systems are becoming more content-driven as our legislatures, governors, and even our local school leaders develop programs that continually ignore pedagogy when considering student performance. What is forgotten is that performance manifests itself in the day-to-day work that is done in classrooms throughout the country in delivering instruction.

The amount of discourse that is provided by our leaders who wish to focus only on achievement shown in standardized tests hampers the goal that they wish for educators to achieve. Armstrong (2006) wrote, “It is more important in the Academic Achievement Discourse to learn the vocabulary words for the sport of soccer than to be able to play soccer” (p. 11). Teachers know that mastery of a subject will not be widespread and lasting without the ability of students to perform what academically they must learn to pass a state’s standardized test. Performance requires knowledge and practice. Both require learning with a foundation of quality instruction provided by the classroom teacher.

PL221, NCLB, and the constantly changing landscape in education makes it difficult for teachers to feel that they have the autonomy to do what they believe is best for their students. The most effective teachers know that they will be effective in achieving results in spite of aspects that continually control their time and resources to get the job of educating children done. Effective teachers know that they have the power to make a difference.

With all of these differences and the increasing expectations placed upon teachers to excel in making such a diverse student population work hard to achieve mastery, do teachers believe that they can make a positive difference? Do the skills and talents teachers have provide them with the belief in their efficacy? Are there teachers who believe they can move forward

and progress in creating a desired outcome of reaching all students and helping them to succeed?
Will the impending effects of legislation motivate teachers to succeed as measured by the requirements of Senate Enrolled Act 1?

There are teachers who reach students each year and move them beyond common expectations. Are these the teachers who never give up? Are these the teachers who make a difference?

Statement of the Problem

Do teachers' perceptions of their efficacy change when they become veteran teachers, and do they differ from principals' perceptions of teacher efficacy?

Purpose of the Study

The purposes of this study were to a) determine if new teachers, mid-career teachers, and veteran teachers differ in their ability to create a desired effect on student learning, and b) examine the differences between principal and teacher perceptions of teacher efficacy.

Research Questions

1. Do new, mid-career, and veteran teachers have different perceptions of teacher efficacy?
2. Are principal perceptions of teacher efficacy different than teacher perceptions of teacher efficacy?
3. Do teacher and principal perceptions of teacher efficacy differ among elementary, middle, and high schools?
4. Do demographic characteristics of teachers and schools affect teacher efficacy?

Null Hypotheses

H₀1: There are no significant differences in teacher efficacy among new, mid-career, and veteran teachers.

H₀2: There are no significant differences in the perceptions of teacher efficacy among elementary, middle and high school teachers.

H₀3: There are no significant difference in the perceptions of teacher efficacy among elementary, middle, and high school principals.

H₀4: There is no significant difference in the perceptions of teacher efficacy between elementary teachers and elementary principals.

H₀5: There is no significant difference in the perceptions of teacher efficacy between middle school teachers and middle school principals.

H₀6: There is no significant difference in the perceptions of teacher efficacy between high school teachers and high school principals.

H₀7: There is no significant difference in the perceptions of teacher efficacy between male and female teachers.

H₀8: There are no significant differences in the perceptions of teacher efficacy among teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students.

H₀9: There are no significant differences in the perceptions of teacher efficacy among teachers who are less than or equal to 29 years of age, between 30 and 44 years of age, and 45 and over years of age.

H₀10: There are no significant differences in the perceptions of teacher efficacy among teachers in rural, suburban, and urban school settings.

Definition of Terms

1. Efficacy: For the purpose of this study, efficacy was defined as a person's belief of their power or capacity to produce a desired effect; effectiveness ("Efficacy," 2010).
2. Elementary school: For the purpose of this study, an elementary school was defined as a school with a grade configuration of preschool and/or kindergarten through Grade 5 in the state of Indiana.
3. Middle school: For the purpose of this study, a middle school was defined as a school with a grade configuration of Grades 6 through 8 in the state of Indiana.
4. High school: For the purpose of this study, a high school was defined as a school with a grade configuration of Grades 9 through 12 in the state of Indiana.
5. Newer teacher: For the purpose of this study, a newer teacher was defined as a teacher with zero to four years of teaching experience who holds a valid teaching license in the state of Indiana.
6. Mid-career teacher: For the purpose of this study, a mid-career teacher was defined as a teacher with five to 19 years of teaching experience who holds a valid teaching license in the state of Indiana.
7. Veteran teacher: For the purpose of this study, a veteran teacher was defined as a teacher with 20 or more years of teaching experience who holds a valid teaching license in the state of Indiana.
8. Principal: For the purpose of this study, a principal was defined as the school's administrative head.

9. Public school: For the purpose of this study, a public school was defined as a school with a grade configuration of preschool and/or kindergarten through Grade 12 in the state of Indiana.

Delimitations

Delimitations of the study existed in the following manner:

1. The time frame established during which data were collected was the spring semester of the 2011-2012 academic year.
2. Approximately 150 schools were included in the sample with 50 being randomly selected from each level of elementary, middle, and high school for a total sample of 150 schools.

Limitations

Generalizations from the study were limited to the degree that

1. The population of this study was representative of schools with grade configurations of preschool and/or kindergarten through Grade 5, Grades 6 through 8, and Grades 9 through 12 in the state of Indiana.
2. The sample included only schools that responded to the survey.

Summary and Organization of the Study

This study is divided into five chapters. Chapter 1 provides an introduction of the study, a statement of the problem, the purpose of the study, research questions, definition of terms, delimitations, and limitations. Chapter 2 presents a review of the related literature. Chapter 3 presents information about the population sample, instruments used, and methods of analysis. Chapter 4 presents findings relevant to the research questions. Chapter 5 presents a summary of the findings, conclusions, and a discussion of the implications of those findings.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Many changes, from societal and economic to pedagogy and accountability, affect teaching and teachers (Wagner, 2001). Along with the many changes, a multitude of forces apply themselves to schools, increasingly making the job of teaching more complex. Many have articulated the problems with American education including vast inequalities between the rich and the poor; the outdated, irrelevant, and America-centric curriculum; the lack of qualified teachers; the disengagement of students; and the increasing faith in testing (Zhao, 2009). These only touch the tip of the iceberg of concerns voiced by many who wish to express the problems that schools face in educating the school-aged children in our communities. All of these problems and concerns affect the motivation level of teachers.

The Complexity of Teaching

Public school teachers must teach all of the students who walk through their classroom doors. Cultural diversity, affluence, broken homes, and poverty are only a few of the factors that cause students to arrive at school with different readiness levels. The most basic factor affecting a teacher's job is that of the family from which a student comes. The National Commission of Teaching and America's Future research showed that the home environment is responsible for 49% of the factors influencing student achievement (Solmon & Podgursky, 2000). A part of a student's environment is determined by his or her family's socio-economic level.

Socio-economic levels have a significant impact on student performance. Generally, schools in affluent communities far outperform schools in poverty-ridden communities. The achievement gap experienced within the United States is the result of the resource gaps that pervade society, as evidence shows that even a small reduction in family poverty significantly improves school behavior and performance of students (Marzano, Pickering, & Pollock, 2001). Coupled with the lesser resources provided by families for their children, the teachers provided for students in high-poverty schools are less prepared to teach the subjects that they are charged to instruct. In comparing secondary schools, high-poverty schools are more likely than those in low-poverty schools to have a teacher who has not majored or even minored in the subject (Ingersoll, 2003).

With expectations rising for teachers to teach students of increasingly varied abilities and backgrounds, federal and state governments are becoming more involved through legislation in the educational process. Local control has become less influential in defining the success of our students. Schools and teachers are being judged by the performance of their students on standardized tests as the quality of education is being reduced to a score that allows comparison across different states and nations (Zhao, 2009). Zhao (2009) further stated,

The strengths of American education are also at least partially responsible for the poor performance of U.S. students on international tests. They spend considerably less time on the tested subjects such as math, reading, and science than their peers in high performing countries because they are engaged in other activities. (p. 58)

Because Americans express their diverse needs and desires through dedicating time and resources on non-tested subjects, students are performing at a lower level than countries that focus more of their time and resources on tested subjects. This need for Americans to find

fulfillment in many avenues pulls the attention away from the subjects to which we are being compared to in national testing.

The pull for schools to focus more time on tested subjects creates a strain to the motivation of teachers. More and more class time is being spent on tested subjects as 22 states now require students to pass a state exam in order to receive their high school diplomas (Zhao, 2009). The increased level of expectations placed on schools and teachers for students to perform make teaching increasingly more complex to a degree that many who begin careers as teachers choose a different career within a few short years (Fiore & Whitaker, 2005).

Teacher Accountability

As the general climate across the country has changed regarding education during the final years of No Child Left Behind, so does the political landscape. Our legislators are focused more on school accountability than ever before, moving that accountability to the individual teacher and classroom through new legislation that has seen laws set to measure a teacher's effectiveness and link that to his or her pay. Even though much of the new education legislation is criticized as a way to cut costs and limit teacher input leading schools back to pre-union days and low pay (Wall, 2011), it is recognized by many of our best teachers that the time has come for compensation models that differentiate among levels of effort and performance (Center for Teaching Quality, 2008). In establishing the Race to the Top Program, the U.S. Department of Education (USDOE) called on states to implement a comprehensive approach to education reform. Among the Race to the Top priorities, the USDOE described in its executive summary a statement on teacher evaluation:

States shall design and implement rigorous, transparent, and fair evaluation systems for teachers and principals that (a) differentiate effectiveness using multiple rating categories

that take into account data on student growth. . . as a significant factor, and (b) are designed and developed with teacher and principal involvement. (as cited in Whiteman, Shi, & Plucker, 2011, p. 1)

This new push for state legislation is founded in the rhetoric among business and community leaders as they charge schools with preparing the future work force to contribute to the 21st Century global economy. Elected officials frequently call on the education system to prepare students for jobs that will build a new economy, and even President Obama linked education and the economy by stating that “the nation’s economic future is being decided every day in classrooms across the country” (Lee, 2011, para. 6). The Center for Teaching Quality (2008) touted that never before have America’s public schools been asked to meet such ambitious goals for our students, and they noted that teachers must lead the way.

This political and societal pressure, along with the temptation of federal dollars flowing to state departments of education, has kindled much of what is happening as states revise educational law. Indiana’s governor, Mitch Daniels, has a reputation as a strong economic leader and has linked economic success to the quality of education children receive. In the 2011 State of the State Address, Governor Daniels condemned past state educational success when he said, “The parade of young lives permanently handicapped by a school experience that leaves them unprepared for the world of work” (para. 28) and “Some seek change in education on economic grounds, and they are right” (para. 28). Governor Daniels teamed up with Indiana’s state superintendent of public instruction, Tony Bennett, when they advocated during the 2011 session of the Indiana General Assembly for three new educational laws that would (a) evaluate and pay teachers based on student learning, (b) hold schools accountable for student learning while giving them the flexibility to deliver better results under local control, and (c) provide

more quality education options for parents (Whiteman et al., 2011). The results of the 2011 Indiana legislative sessions found changes to Indiana Code that rewrote the rules for how teachers will be judged, paid, promoted, and fired. For the first time in Indiana's history, teachers' pay will be linked to quantified measures of student performance. These changes also limited teachers' collective bargaining rights (Wall, 2011). Indiana has joined 23 other states that require annual teacher evaluations, along with 17 other states allowing teacher dismissals based on evaluation results and 16 states requiring evaluating teachers on student academic achievement.

Central to teacher accountability in Indiana is the requirement by the revised Indiana education code that all teachers be evaluated every year. Evaluation models and implementation of previously utilized models provided little faith to teachers that they would effectively rate their classroom abilities. Two concerns have surfaced in relation to this problem. First, teachers do not believe that they receive meaningful feedback on their instructional practices and are provided with little guidance about what is expected of them in the classroom. Second, evaluation systems for teachers did not differentiate between high and low performing teachers (Sartain, Stoelinga, & Brown, 2011).

Designing an effective teacher evaluation tool can be very difficult. Charlotte Danielson, a national leader in teacher performance stated "Teaching is tough to judge because it is a very complex process. Teaching is so hard that it's never perfect. It can always be a bit better" (as cited in Elliott, 2011, para. 8). In a national report from the Center for Teaching Quality (2008), McGowan, a teacher, said, "We can't weigh a teacher's soul to find out how much of it she leaves in the school every day—her passion flowing into the minds of her students like the lifeblood of education" (p. 6). The consequences of not designing a quality evaluation model for

schools can be financially significant for school corporations. Danielson (as cited in Elliott, 2011) also said, “New systems to judge teachers had better be well-designed because teachers who are unfairly fired will sue and they will probably win” (para. 8).

Research by the New Teacher Project (2007) noted several inconsistencies and disconnects in the Chicago Public Schools (CPS) between classroom results and teacher evaluations. This system has since been revamped, but in 2007 CPS relied on a system that both teachers and principals viewed as arbitrary and unfair. The system identified 93% of teachers as either *superior* or *excellent*—at the same time that 66% of the CPS schools were failing to meet state standards (New Teacher Project, 2007). This research also found that some high-rated teachers believed that the evaluation system was not meaningful, believing that the ratings were inflated and appropriate consequences for poor teacher performances did not exist or were not used. Two case studies from the New Teacher Project (2007) illustrate this assertion.

Case Study 1

Case Study 1 was a pre-K-8 school with about 500 students that was almost 90% low-income and 100% African-American. Since 2003, the percentage of students scoring at or above the national average on the Iowa Test of Basic Skills (ITBS) math section had gone from 45% to 27%, and the percent scoring at the national average on the reading section had gone from 33% to 18%. Of the school’s 51 ratings, not a single one was *unsatisfactory*. But this particular school also did not issue any *satisfactory* ratings. All 51 ratings were *superior* or *excellent*. The breakdown was 78% *superior*, 22% *excellent*.

Case Study 2

Case Study 2 was a pre-K-5 school that had over 900 students, 98.6% of whom were low-income and 97% of whom were Hispanic. Since 2003, reading scores had from fallen 57% to

36%, and math scores have fallen from 48% to 43%. Since 2003, the school issued 99 efficiency ratings. Of the 99 ratings, not a single one was *unsatisfactory*, and only three were *satisfactory*. The breakdown was 65% *superior*, 32% *excellent* and 3% *satisfactory*.

Teacher evaluation systems typically fail to provide teachers with the information they need to make timely and effective improvements in their instructional practice (McLaughlin, 1990). As schools throughout Indiana and other states are working to redesign their teacher evaluation tools to meet the new laws, it is important that adequate time be spent in developing a usable evaluation system in concert with the major stakeholders. In designing an evaluation system that meets the needs of teachers by encouraging professional improvement, acknowledging difficulties of complexities of teaching, and protecting the rights of teachers, consideration must be given to administrators who want a system that is feasible and objective and aids them in making quality decisions. In addition to these desires, parents and public office holders want a teacher evaluation system that relates teacher performance to teacher effectiveness and guarantees appropriate treatment of the student in the classroom (Knapp, 1982).

The Consortium on Chicago School Research (Sartain et al., 2011) found that an evaluation system, with proper training of teachers and principals, could be both reliable and valid. Key findings of their research on validity include

1. There is a strong relationship between the classroom observation ratings and value-added measures, and the relationship holds for math and reading test scores.
2. In the classrooms of highly rated teachers, students showed the most growth; in the classrooms of teachers with low observation ratings, students showed the least growth. (Sartain et al., 2011, p. 9)

Key findings of their research on reliability included

1. Principals rated teaching practice reliably on the low end and the middle of the scale.
2. However, they were more likely to rate practice as *Distinguished* when observers rated practice as *Proficient*.
3. Most principals agreed with external observers when it came to rating teaching practice, though 11% of principals consistently gave lower ratings than the observers and 17% consistently gave higher ratings than the observers. (Sartain et al., 2011, p. 13)

The significance of principals to rate some teachers in the *Distinguished* category when observers tended to rate some of the teachers lower was negligible. In interviews, principals acknowledged that some teachers were intentionally rated *Distinguished* and that they should have been rated *Proficient* due to the need to preserve a relationship with colleagues who had previously been rated *Distinguished* (Sartain et al., 2011). It was found that the teachers who the principals had rated *Distinguished* when the observers rated them *Proficient* did have higher value-added measures than those that the principals rated as *Proficient*. Sartain et al. (2011) noted that evidence existed that principals accurately assessed teaching practice, even at the high end of the rubric.

Identifying Quality Teaching

Although quality teaching varies by the individual in the classroom, the identification of teachers who possess greater or lesser skills in building the educational capacity of their students does not vary greatly. Many teacher rating and evaluation systems provide little means of delineating the best teachers from the rest. For school districts using a binary system of evaluation ratings, it was found that more than 99% of the teachers received the *satisfactory*

rating. When looking at districts using a broader range of ratings, 94% of the rated teachers received one of the top two ratings (Weisberg, Sexton, Mulhern, & Keeling, 2009).

The dichotomy of the identification of quality teaching and quality schools can be seen in a recent report by the Denver schools. In a study by Weisberg et al. (2009), it was discovered in schools that did not meet adequate yearly progress (AYP) more than 98% of the tenured teachers received the highest evaluation rating. This is only one example of how schools that have been identified as *failing to succeed* do not see a connection between quality teaching and quality learning, especially when the study showed that half of the districts did not dismiss any non-probationary teachers for poor performance.

When all teachers are being rated as proficient, it is impossible to formally identify those who are exceptional. Weisberg et al. (2009) noted that 50% of teachers and 63% of administrators said their districts were not doing enough to identify, compensate, promote, and retain the most effective teachers. This only provides further impetus for the demotivation of teachers who have not been led to objectively stated goals for which they are held accountable.

In addition to objectively stated goals, administrators and teachers will only invest the time in developing a rigorous evaluation system if some type of stakes is attached to the system (Weisberg et al., 2009). Although policymakers write laws that determine how teachers will be evaluated, the success of an evaluation system is dependent upon the stakeholders' perspective (Darling-Hammond, Wise, & Pease, 1983). Teachers, administrators, parents, and public officials must have a hand in creating such evaluation rubrics. Regarding evaluation systems for teachers, it is known that teachers want a system that encourages professional development, acknowledges the difficulties and complexities of teaching, and protects their rights (Knapp, 1982).

Problems with teacher evaluation systems have been well documented over the recent years. In a document titled *The Widget Effect*, Weisberg et al. (2009) articulated five problems that most teacher evaluations entail:

1. **Infrequent:** Many teachers—especially more experienced teachers—are not evaluated every year. These teachers might go years between receiving any meaningful feedback on their performance.
2. **Unfocused:** A teacher’s most important responsibility is to help students learn, yet student academic progress rarely factors directly into evaluations. Instead, teachers are often evaluated based on superficial judgments about behaviors and practices that may not have any impact on student learning—like the presentation of their bulletin boards.
3. **Undifferentiated:** In many school districts, teachers can earn only two possible ratings: *satisfactory* or *unsatisfactory*. This pass/fail system makes it impossible to distinguish great teaching from good, good from fair, and fair from poor. To make matters worse, nearly all teachers—99% in many districts—earn the *satisfactory* rating. Even in districts where evaluations include more than two possible ratings, most teachers earn top marks.
4. **Unhelpful:** In many of the districts, teachers overwhelmingly reported that evaluations did not give them useful feedback on their performance in their classroom.
5. **Inconsequential:** The results of evaluation are rarely used to make important decision about development, compensation, tenure or promotion. In fact, most of the school

districts we studied considered teachers' performance only when it came time to dismiss them. (New Teacher Project, 2010, p. 3)

To combat the ineffective past of teacher evaluations, The New Teacher Project (2010) developed six standards to be used as guiding principles in designing quality teacher evaluations:

1. Annual Process: All teachers should be evaluated at least annually.
2. Clear, Rigorous Expectations: Evaluations should be based on clear standards of instructional excellence that prioritize student learning.
3. Multiple Measures: Evaluations should consider multiple measures of performance, primarily the teacher's impact on student academic growth.
4. Multiple Ratings: Evaluations should employ four to five rating levels to describe difference in teacher effectiveness.
5. Regular Feedback: Evaluations should encourage frequent observations and constructive critical feedback.
6. Significance: Evaluation outcomes must matter; evaluation data should be a major factor in key employment decisions about teachers. (p. 3)

Peterson (2000) stressed the need for multiple data sources and advocated for seven different data sources to determine teacher effectiveness. These were (a) student and parent reports of teacher effectiveness, (b) administrator reports, (c) peer reviews of materials and methods, (d) documentation of professional activity, (e) systematic observations and other sources unique to a teacher's discipline, (f) environment, and (g) self-appraisal (Peterson, 2000).

Peterson (2000) also advocated the use of student achievement data from standardized testing, teacher-created assessments, and peer-reviewed assessments. Peterson also suggested that teachers be primarily responsible for the utilization of the data used in their evaluation.

Robert Marzano, a leading researcher, author, and presenter in educational best practices, developed an evaluation model for teachers, which contain four domains with multiple components in each domain being matched to a rubric. Marzano's four domains are (a) classroom strategies and behavior, (b) collegiality and professionalism, (c) reflection on teaching, and (d) planning and preparation (Marzano, 2011).

Danielson's (2007) framework for rating teachers has been used by a plethora of teacher evaluation writers and was included as important research in the Indiana model evaluation created by the Indiana Department of Education. Danielson's framework is divided into four domains: planning and preparation, the classroom environment, instruction, and professional responsibilities.

Danielson's (2007) model has multiple components for each of the four domains that can be rated *distinguished*, *proficient*, *basic*, or *unsatisfactory*. Indiana's model titled RISE contains four domains as well. These are "planning, instruction, leadership, and core professionalism" (Sloan, 2011, p. 12).

The first three of Indiana's domains have components much like that of the Danielson rubric describing each of the components in more detail. The ratings afforded the reviewer when using the RISE rubric are *highly effective*, *effective*, *improvement necessary*, and *ineffective*. These match the newly revised Indiana Code 20-28-11.5-4(c)(4).

With the implementation of Senate Enrolled Act 1, all schools in Indiana are required to develop a plan for annual performance evaluations for each certificated employee (IC 20-28-11.5). School corporations can choose to utilize the state-developed model, or they can choose from other listed models in lieu of developing their own model. If corporations choose to implement a model other than the state-developed model in its entirety, the teachers in the

corporation must vote with 75% of those voting to approve the proposed model (IC 20-28-11.5-8).

School corporations throughout Indiana are designing a model that will fit their needs and desires, and they are working with their teachers to do so. Although teachers want accountability and an evaluation system that leads to improved teaching and learning, they also want a system that is fair. The best evaluation tool possible will still add to their plates when the 2012-2013 school year begins and teachers want to achieve the best rating that they can (Sloan, 2011).

Social Cognitive Theory

Over 30 years ago, Bandura (1977) introduced the psychological concept of self-efficacy through his social cognitive theory. For Bandura though, his life's work began in 1963 when he and Walters expanded on the social learning theory in their work, *Social Learning and Personality Development*. Through their work, they were able to add principles of observational learning and vicarious reinforcement, yet Bandura began to realize that an important part of the social learning theory was missing. He identified self-beliefs as the missing element in his social learning theory (Bandura, 1977).

In research of children who observed a model being rewarded for aggressive behavior, it was found that the subjects were more likely to imitate that aggressive behavior than those who witnessed models being punished for such behavior (Bandura, Ross, & Ross, 1963). Punishments were found to be deterrents and rewards were seen as incentives. Vicarious reinforcement is found when people witness others being rewarded or punished for behaviors. This will cause self-encouragement or discouragement for the viewed behaviors to be imitated (Fox & Bailenson, 2009). Vicarious reinforcement has been used in many media campaigns to

promote healthy lifestyles through showing the negative consequences of substance abuse, smoking, or unhealthy eating.

Another important part of the social cognitive theory is that of identification (Fox & Bailenson, 2009). Identification references the extent to which people identify with models that he or she may view as similar to himself or herself. Again, using commercial media, one can recognize that a target audience for a new children's toy will likely use children as actors in the commercial. When a child views such a commercial on Saturday morning television, they are more likely to identify with the child actor who is enjoying playing with the toy and perceive that they too will enjoy such a toy and desire that for themselves (Fox & Bailenson, 2009).

When publishing *Social Foundations of Thought and Action: A Social Cognitive Theory*, Bandura (1986) noted that people's interpretation of their own behavior changed their own environment and their own future behaviors. Bandura ended up changing the label of his social learning theory to social cognitive theory to delineate his theory from other theories of the day (Pajares, 2002).

Bandura's (1986) social cognitive theory involved a "triadic reciprocal causation" (p. 18) in explaining that the personal factors of cognitive, affective, and biological events coupled with behavior and environmental factors operate interdependently in determining human agency. To be an agent is to intentionally make things happen by one's own actions (Bandura, 2001). Supporting the interplay between personal, behavioral, and environmental factors differs from two other leading psychological theories at the time in that others only focus on fewer factors. Freud's psychodynamic theory was singularly based on the premise that behavior is driven by unconscious impulses and Skinner's behavioral theory noted that behavior is shaped and

controlled by environmental forces (as cited in Lefrancois, 1999). Each of these is a one-directional causation to explain behavior (Lefrancois, 1999).

As described by Bandura (2001), “The core features of agency enable people to play a part in their self-development, adaptation, and self-renewal with the changing times” (p. 2). Agentic is a social cognition theory perspective in which people are producers as well as products of social systems (Bandura, 2001).

Self-Efficacy

“Efficacy” (2010) is defined as the power to produce an effect. Self-efficacy is a component of social cognitive theory, which is viewed as the foundation of human motivation and accomplishments. Unless people believe they can produce desired effects by their actions, they have little incentive to act or persevere in the face of difficulties (Bandura, 1986). Simply put, Bandura believed that a person’s attitude, abilities, and cognitive skills comprise what is known as the self-system. This system plays a major role in how we perceive situations and how we behave in response to different situation. Self-efficacy plays an essential part of this self-system (Bandura, 1977). Bandura’s definition of self- efficacy is “the belief that one’s capabilities to organize and execute the courses of action required to manage perspective situations” (Bandura, 1997, p. 391).

In dealing with one’s environment, efficacy is not a fixed act. Perceived self-efficacy is based on personal and self-referent thought of how well one can assume a course of action to deal positively with a situation (Bandura, 1982). These judgments of self-efficacy also determine how much effort one will expend and how long one will persist in the face of difficult situations he or she is facing. Those with confidence of a successful personal outcome will persevere and those who do not have the confidence that the outcome will be successful will

have personal effort wane. High perseverance usually produces high performance attainments (Bandura & Schunk, 1981).

In addition to indicating a person's perseverance, a person's judgment of his or her capabilities will influence their thought patterns and emotional reactions during exposure to environmental factors. Those who believe themselves to be inefficacious in coping with the stresses of their daily lives will dwell on their personal deficiencies and imagine potential difficulties as more formidable than they really are (Beck, 1976).

People are more influenced by how they read their performance successes than by the actual successes themselves (Bandura, 1982). This can be seen in the basketball star who may have had a poor shooting streak, yet continues to take shots at the basket believing in their abilities to provide points for their team.

Bandura (1997) published *Self-Efficacy: The Exercise of Control*, where he further explained self-efficacy as a form of agency that operates in conjunction with other socio-cognitive factors in regulating human well-being and personal attainment. In this work, Bandura identified four ways to develop a strong sense of efficacy. *Mastery experience* is the first way and is a way that people achieve goals. Overcoming or managing failures is an important part of this. To achieve mastery, individuals perform tasks, make determinations of their success, use those determinations to develop beliefs about their abilities to perform successfully in the future and then act in concert with the beliefs that they created. The second way is through *social modeling* or *vicarious experience*. People see others like themselves being successful. When people are uncertain about their abilities or they do not have successful experiences in achieving a task, they become sensitive to the task. Viewing others as successful, especially those who are perceived similar to themselves, gives a great sense of ability to the viewer that he or she will be

successful. The third way is through *social persuasion*. People are persuaded by others through verbal judgments that they can be successful. Negative persuasion also has a significant ability to affect a person's efficacy in that such appraisals feed into the existing lack of belief in success. The fourth and final way is through *physical* and *emotional states*. People learn to accurately read their own physical and emotional states (Pajares, 2002).

Although social persuasion alone may be limited in its power to create increases in self-efficacy, it can contribute to a successful performance if the subjects already have some belief that they can produce the desired effect through their own actions. It is also important to note that people partly rely on their physical and emotional states in judging their capabilities. When people are highly stressed, they are more likely to expect failure. Also, in physical activities requiring strength and stamina, people will read their aches and pains as physical inefficacy (Bandura, 1982). Bandura (1982) noted four results of efficacy beliefs. Cognitive efficacy beliefs influence whether people think optimistically or pessimistically. Motivational efficacy beliefs affect the challenges to which people commit. Emotional efficacy beliefs affect how people cope with stress and depression. Decisional efficacy beliefs affect choices people make (Pajares, 2002).

In the past two decades, self-efficacy as a component of social cognitive theory has been tested in a wide variety of settings and has received support from many studies. Self-efficacy beliefs have been found to be related to problems such as phobias, addictions, depression, social skills, assertiveness, stress, smoking, pain control, health, and athletic performance (Pajares, 1996).

Teaching Efficacy

Efficacy is further defined as “an individual’s beliefs about his or her own capability to achieve a certain level of performance” (Guskey & Passaro, 1994, p. 628). In their work, Guskey and Passaro (1994) provided a link to how efficacy can be used in describing a teacher’s power to produce an effect. Guskey and Passaro stated that effective teachers believe in their competence. Glasser (1998) described the choice theory, which is a biological theory that humans are genetically wired to satisfy psychological needs that are beyond basic needs for survival. Those four psychological needs are belonging or connecting, power or competence, freedom, and fun (Glasser, 1998).

An individual’s competence in dealing with his or her environment in a variety of situations, including those that are ambiguous or highly stressful, is a determining factor in identifying those individuals who are most efficacious (Lefrancois, 1999). Lefrancois (1999) further supported this theory in stating that self-efficacy is more about an individual’s beliefs regarding their effectiveness than the acquisition of the required skills to perform successfully. Personal or self-efficacy has a strong connection to persistence. Lefrancois provided that

judgments of personal efficacy affect not only our choices of activities and settings but also the amount of effort we are willing to expend when faced with difficulties. The stronger an individual’s perceptions of efficacy, the more likely the individual is to persist and the greater the effort expended will be. But if notions of self-efficacy are not highly favorable, difficult activities may be abandoned after very little effort and time. (p. 44)

As it relates to teaching, self-efficacy or teacher efficacy has been defined as “the extent to which the teacher believes he or she has the capacity to affect student performance” (Berman,

McLaughlin, Bass, Pauly, & Zellman, 1977, p. 72). Guskey and Passaro (1994) defined teacher efficacy as “teachers’ belief or conviction that they can influence how well students learn, even those who may be difficult or unmotivated” (p. 628). Bandura (1977) made the connection from teacher efficacy to self-efficacy which was picked up in the research of Tschannen-Moran, Woolfolk Hoy, & Hoy (1998). Tschannen-Moran et al. (1998) created a definition based on the work of Bandura.

Teacher efficacy is a cognitive process in which people construct beliefs about their capacity to perform at a given level of attainment. These beliefs influence how much effort people put forth, how long they will persist in the face of obstacles, their resilience in dealing with failures, and how much stress or depression they experience in coping with demanding situations. (Tschannen-Moran et al., 1998, p. 2)

A study by Jerald (as cited in Protheroe, 2008) linked teacher behaviors to teacher efficacy. He found that teachers with a higher degree of efficacy

1. Tend to exhibit greater levels of planning and organization;
2. Are more open to new ideas and are more willing to experiment with new methods to better meet the needs of their students;
3. Are more persistent and resilient when things do not go smoothly;
4. Are less critical of students when they make errors; and
5. Are less inclined to refer a difficult student to special education. (Protheroe, 2008, p. 43)

Teachers’ beliefs regarding their own capacities have produced compelling findings in numerous studies (Tschannen-Moran et al., 1998). The idea of teacher efficacy was first introduced in a study conducted by the Rand corporation in 1976 when they asked teachers two

questions regarding personal and general teacher efficacy with personal teacher efficacy identifying teachers' beliefs in their own power and general teacher efficacy identifying teachers' beliefs in the power of teaching to overcome external factors (Tschannen-Moran et al., 1998).

The first Rand item, "When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment," was interpreted by Ashton, Olejnik, Crocker, and McAuliffe (Tschannen-Moran et al., 1998, p. 4) as being answered positively by a teacher who believes that environmental factors are significantly greater than factors that teachers can bring to bear with a student. Factors such as personal conflict, family violence, family or community substance abuse, value placed on education at home, socio-economic class, race, gender, and psychological and emotional needs of a child have a considerable influence on a student's performance and effort in school. The belief teachers have regarding the power that these influences hold are labeled general teaching efficacy (GTE).

The second Rand item, "If I really try hard, I can get through to even the most difficult or unmotivated students," identified teachers who respond positively to this statement as having confidence in their abilities to overcome factors making educating students difficult (Tschannen-Moran et al., 1998, p. 4). Teachers who also respond positively are making a statement about the efficacy of their own work including their past successful experiences and training that have provided them with a belief in their abilities. This aspect has been labeled as personal teaching efficacy (PTE). This is a more specific and personal interpretation by Ashton et al. (as cited in Goddard, Hoy, & Hoy, 2000) about what teachers in general can accomplish.

Although the initial Armor et al. (1976) study's purpose was to discover the success of various reading programs and interventions, adding the two efficacy questions was inspired by

Rotter's 1966 article entitled "Generalized Expectancies for Internal Versus External Control of Reinforcement" (Tschannen-Moran et al., 1998). Rotter (1966) asserted that teachers who believed that the environment overwhelms the ability of a teacher to impact a student's learning exhibit a belief that reinforcement of their teaching lies outside of their control or is external to them. Conversely, teachers expressing confidence in their ability to teach challenging students believe that reinforcement of their teaching lies within their control or is internal to them. The two items on the survey were found to be strongly related to reading achievement of minority students. In Berman et al.'s (1977) study, it was found that teachers with a high level of efficacy believed that they could either control or influence the motivation and achievement of their students. In addition to the achievement of students, researchers looked at a teacher's willingness to implement new teaching practices comparing it with his or her level of efficacy. It was determined that the proportion of time teachers spent in utilizing interactive instruction after being trained on such a strategy was related to their personal teaching efficacy (Tschannen-Moran et al., 1998).

Three additional studies closely followed the Rand studies developing more comprehensive measures for reliability. Rose and Medway (1981) developed the Teacher Locus of Control (TLC). This 28-item survey asked teachers to assign responsibility for student outcomes through choosing one of two answers for a specific situation with half of the answers describing student failure and the other half describing student success. This study led to a finding that teachers low on personal and general efficacy had significantly higher stress than teachers with low personal but high general efficacy and teachers with high levels of both personal and general efficacy. That same year, Guskey (1981) developed a 30-item survey that measured responsibility for student achievement. In Guskey's survey, participants were asked to

distribute 100 percentage points between two alternatives with one stating events were caused by the teacher and the other stating that events were caused by factors outside of the teacher's control. In a comparison of responses to his work and that of the Armor et al. (1976) study, Guskey found significant correlations between teacher efficacy and student success and failure. The Webb Scale, developed by Ashton, Olejnik, Crocker, and McAuliff (1982) worked to support the initial finding of the Armor et al. (1976) study through the use of a forced-choice format with items matched for social desirability. Ashton et al. (as cited in Goddard et al., 2000) found that those who scored higher on the Webb Efficacy Scale had fewer negative interactions in their teaching style.

The most powerful influences of a teacher's sense of efficacy are developed during the teacher's student teaching and first year (Woolfolk Hoy, 2000). These early years have been the fodder for many studies regarding teacher efficacy as research has indicated that once efficacy beliefs are established, they are much more resistant to change (Woolfolk Hoy, 2000). Woolfolk Hoy (2000) continued her assertion that "efficacy may be most malleable early in learning, thus the first years of teaching could be critical to the long-term development of teacher efficacy" (p. 2). Saklofske, Michaluk, and Randhawa agreed that student interns who exhibited a higher degree of personal teaching efficacy were rated more positively on lesson-presenting behavior, classroom management, and questioning behavior by their supervising teachers (as cited in Woolfolk Hoy, 2000).

Teachers who have a high degree of personal teacher efficacy believe that they have the power to overcome external teaching factors. Rotter (1966) noted that teachers who concur that the influence of the environment overwhelms a teacher's ability to have an impact on a students' learning exhibit a belief that reinforcement of their

teaching efforts lies outside their control or is external to them. Teachers who express confidence in their ability to teach difficult or unmotivated students evidence a belief that reinforcement of teaching activities lies within the teacher's control or is internal. (as cited in Tschannen-Moran et al., 1998, p. 2)

Whitaker (2004) articulated in his book, *What Great Teachers Do Differently*, that “great teachers know who is the variable in the classroom: They are” (p. 37).

Teacher Efficacy and Student Outcomes

Further studies have proven the concept of teacher efficacy as a powerful influence on students and an important variable related to educational outcomes. Woolfolk Hoy (2000) associated teacher efficacy with “student motivation, teachers’ adoption of innovation, superintendents’ rating of teachers’ competence, teachers’ classroom management strategies, time spent teaching certain subjects, and teachers’ referrals of students to special education” (p. 2).

Research into the relationship between teacher efficacy and student outcomes is numerous. Moore and Esselman (1992) determined that students in second and fifth grades with teachers having higher sense of teaching efficacy outperformed their peers on the Iowa Test of Basic Skills. A 1988 study in Canada involving third graders and their teachers found that teachers with greater efficacy at the beginning of the year was significantly related to their students’ performance on the Canadian Achievement Tests as well as the students’ own sense of efficacy (Anderson, Green, & Loewen, 1988). Students also showed a significantly higher level of achievement, as measured by the Ontario Assessment Instrument Pool, who had teachers with higher personal and teaching efficacy beliefs (Ross, 1992). Additionally, significantly higher reading scores and math scores in majority Black, majority White, and rural schools were found

for students whose teachers had a higher degree of teaching efficacy (Tschannen-Moran et al., 1998).

In addition to student academic outcomes, teacher efficacy has also been related to positive classroom management. Emmer and Hickman used the Gibson and Dembo instrument to measure teacher efficacy and its relationship to positive classroom management strategies of praise, encouragement, attention, and rewards (as cited in Tschannen-Moran et al., 1998). It was found that teachers with a higher degree of efficacy used more positive behavioral strategies than negative strategies such as time outs, punishment, or reprimands (Tschannen-Moran et al., 1998).

Collective Teacher Efficacy

Coupled with self-efficacy, collective efficacy is a significant factor in supporting an organization's goals. Bandura (1997) noted that perceived collective efficacy is an important aspect of an organization's culture.

Culture is not only concerned with shared assumption, values, and norms, but also with shared beliefs about the organization's capabilities to innovate and attain its goals.

Organizational members' collective belief about efficacy to produce and achieve at certain levels is an important feature of the institution's operating culture. (Tschannen-Moran et al., 1998, p. 28)

Goddard et al. (2000) noted that the perception of a staff regarding their collective efficacy is determined by the faculty members' belief in their abilities as a whole to execute actions that have a positive effect on student achievement. Furthermore, school stakeholders are more likely to work on academically challenging goals if they believe they have the capabilities and that the people around them are trusted and are able to help them (Hoy, Tarter, & Woolfolk Hoy, 2006). Hoy et al. (2006) identified three properties that make a difference regarding student

achievement: the academic emphasis of the school, the collective efficacy of the faculty, and the faculty's trust in parents and students.

Through a sense of collective efficacy, an academic optimism forms, which attempts to explain and nurture what is best in schools, as they work to help students learn (Hoy et al., 2006). Hoy et al. (2006) also shared that academic optimism can make a significant contribution to student achievement. This academic optimism can be increased by teachers as they lower their stress through appropriate participation in decision making regarding aspects that affect the school (Hoy & Tarter, 2004).

Schools are faced with unique challenges that involve accountability through legislation at the national and state level. Bandura (1997) observed that due to public accountability, shared responsibility for student outcomes, and little control over work environments, the task of building collective teacher efficacy was difficult but not impossible. Additionally, it was believed that once teacher efficacy at the collective level is developed, it will continue to thrive. These features are strengthened through their continued use (Goddard et al., 2000). Also, Bandura (1997) noted that efficacy has the potential to grow rather than diminish through continued use. Goddard et al. (2000) also noted that collective efficacy gains can lead to increased organizational performance and that increased performance led to further strengthen the collective efficacy. School improvement goals work to build collective efficacy as staff members work toward a common goal. That success extends the self-efficacy theory to collective efficacy. Human agency, as mentioned earlier, can be extended at the organizational level as organizations pursue a purposeful educational goal (Goddard et al., 2000).

Just as the four sources of self-efficacy (mastery experience, vicarious experience, social persuasion, and physical and emotional states) described by Bandura (1986, 1997) are critical to

individuals, they are also critical to collective teacher efficacy. As a group, mastery experiences are important for organizations. Successes based on school goals build organizational efficacy and failures undermine it. As with individual teacher efficacy, vicarious experiences promote collective efficacy. School faculties listen to stories of other schools and read research on characteristics of exemplary schools. This observation and learning of other schools promote collective teacher efficacy (Huber, 1996). Teachers receive feedback during professional development and faculty meetings regarding student achievement and this can influence a school's teaching staff. This is a type of social persuasion that can build a more cohesive faculty and a stronger degree of collective efficacy. Furthermore, the more cohesive a faculty, the more likely they can be persuaded to work together toward a common goal (Goddard et al., 2000). Goddard et al. (2000) also found that organizations with a strong degree of collective efficacy deal with crises and pressures in a way that does not cause them to function poorly. These organizations learn to adapt and cope with potentially destructive forces and do not react in a negatively emotional manner.

Collective efficacy has also been a part in determining an organization's academic optimism. In Hoy et al.'s (2006) work, an outline was provided of the importance of collective efficacy as an essential part of academic optimism along with academic emphasis and faculty trust. They even linked these three properties to positive student achievement. Bandura (1986, 1997) suggested that academic optimism, collective efficacy, and faculty trust determine the expectations and norms of the school. It was found that when teachers behave in a manner that conflicts with the group norms that the group sanctions their behavior (Coleman, 1985). When the collective efficacy of a school is strong, it creates a powerful set of norms and expectations that reinforce the teachers' self-efficacy beliefs.

Perceived collective efficacy is an important aspect of organizational culture (Bandura, 1997). An organization's capabilities to innovate and attain its goals is dependent on its culture through shared assumptions, values, and norms and their collective beliefs about their efficacy to achieve at a desired level (Tschannen-Moran et al., 1998).

CHAPTER 3

RESEARCH METHODS

With the implementation of Public Law 221 in 1999 and Senate Enrolled Act 1 in 2011, Indiana teachers have continually felt more pressure to perform and to have proof of their success in teaching students particular content. This chapter discusses the research methodology including research questions, null hypotheses, data sources, data collection processes, and the instruments used in gathering data.

Purpose of the Study

The purposes of this study were twofold—determine if new teachers, mid-career teachers, and veteran teachers differ in their ability to create a desired effect on student learning and examine the differences between principal and teacher perceptions of teacher efficacy.

Research Questions

This quantitative study sought answers to four different research questions.

1. Do new, mid-career, and veteran teachers have different perceptions of teacher efficacy?
2. Are principal perceptions of teacher efficacy different than teacher perceptions of teacher efficacy?
3. Do teacher and principal perceptions of teacher efficacy differ among elementary, middle, and high schools?

4. Do demographic characteristics of teachers and schools affect teacher efficacy?

Null Hypotheses

H₀1: There are no significant differences in teacher efficacy among new, mid-career, and veteran teachers.

H₀2: There are no significant differences in the perceptions of teacher efficacy among elementary, middle and high school teachers.

H₀3: There are no significant differences in the perceptions of teacher efficacy among elementary, middle and high school principals.

H₀4: There is no significant difference in the perceptions of teacher efficacy between elementary teacher and elementary principals.

H₀5: There is no significant difference in the perceptions of teacher efficacy between middle school teachers and middle school principals.

H₀6: There is no significant difference in the perceptions of teacher efficacy between high school teachers and high school principals.

H₀7: There is no significant difference in the perceptions of teacher efficacy between male and female teachers.

H₀8: There are no significant differences in the perceptions of teacher efficacy among teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students.

H₀9: There are no significant differences in the perceptions of teacher efficacy among teachers who are less than or equal to 29 years of age, between 30 and 44 years of age, and teachers who are 45 and over years of age.

H₀10: There are no significant differences in the perceptions of teacher efficacy among teachers in rural, suburban, and urban school settings.

Data Sources

For the purposes of this study, a public school was defined as a school with a grade configuration of kindergarten through Grade 12 in the state of Indiana. Elementary schools were defined as schools with a grade configuration of pre-kindergarten through Grade 5, middle schools were defined as schools with a grade configuration of Grades 6 through 8 and high schools were defined as schools with a grade configuration of Grades 9 through 12. In the 2011-2012 school year, there were a total of 1,756 public schools in the state of Indiana with 433 that matched grade-span criteria for elementary schools, 172 that matched grade-span criteria for middle schools, and 234 that matched criteria for high schools (K. Lane, personal communication, 2011).

Data Collection Process

The design of this study involved the following procedures:

1. Fifty Indiana schools were randomly selected from each elementary school, middle school, and high school population for a total of 150 schools. Identification of the population was done using a list provided by the Indiana Department of Education containing every public school in Indiana and their grade level configurations. This list was used to identify schools that met the criteria for elementary, middle, and high schools. From the list, a random number sample table was used to determine the final sample of 50 schools from each identified level. This study included each principal from the 150 schools and all of the certified teachers in the 150 schools who responded to the survey. It was determined through a power analysis using G*Power

- 3.1.3 that a sampling of 50 schools from each level would require a minimum respondent number of 159 participants at the .80 power to complete a valid one-way analysis of variance (ANOVA).
2. Links to the Teacher Efficacy Survey were sent to all principals sampled from the survey population. The initial invitation was sent by way of email during the early morning hours to in order to increase the probability that the email would be toward the top of their email list when they started their day. This email contained a letter explaining the study and an explanation of how they were to access the URL for completing the study online. Principals completed the secured survey online.
 3. Principals identified in the survey population were also requested to send the URL to their teaching staffs to complete the teacher version of the survey online.
 4. Two weeks after the initial mailing, all principals were sent a follow up email and a link to the URL to complete the survey and request that they remind their teachers of the same. This email was sent in the middle of the day to provide an opportunity for those principals to participate who may have not remembered the first email request.
 5. Results were used to examine how teacher efficacy perceptions differ among new, mid-career, and veteran teachers and to examine the relationship between principal and teacher perceptions of teacher efficacy.

Instrumentation

Teacher Efficacy Survey

The two teacher efficacy surveys were used with school principals and teachers to determine perceptions of teachers' ability to create a desired effect on student learning and principals' perceptions of teacher efficacy. I developed the survey instruments for this study

after a review of current literature, input from colleagues, and thorough field-testing of schools not in the original population due to them not being a grade-level match per previously identified definitions. The teacher survey is a 20-item questionnaire with an additional six questions to collect demographic data from the teachers (Appendix A). The principal survey is a 20-item questionnaire with an additional seven questions to collect demographic data from the principals (Appendix B).

The respondents rated the first 20 questions on a five-point Likert scale. The following scale was used: 1 = *completely disagree*, 2 = *mostly disagree*, 3 = *neutral*, 4 = *mostly agree*, and 5 = *completely agree*.

Statistical Analysis

The first hypothesis, “There are no significant differences in teacher efficacy among new, mid-career, and veteran teachers,” was tested using a one-way ANOVA.

The second hypothesis, “There are no significant differences in the perceptions of teacher efficacy among elementary, middle and high school teachers,” was tested using a one-way ANOVA.

The third hypothesis, “There are no significant differences in the perceptions of teacher efficacy among elementary, middle and high school principals,” was tested using a one-way ANOVA.

The fourth hypothesis, “There is no significant difference in the perceptions of teacher efficacy between elementary teachers and elementary principals,” was tested using a *t*-test.

The fifth hypothesis, “There is no significant difference in the perceptions of teacher efficacy between middle school teachers and middle school principals,” was tested using a *t*-test.

The sixth hypothesis, “There is no significant difference in the perceptions of teacher efficacy between high school teachers and high school principals,” was tested using a *t*-test.

The seventh hypothesis, “There is no significant difference in the perceptions of teacher efficacy between male and female teachers,” was tested using a *t*-test.

The eighth hypothesis, “There are no significant differences in the perceptions of teacher efficacy among teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students,” was tested using a one-way ANOVA.

The ninth hypothesis, “There are no significant differences in the perceptions of teacher efficacy among teachers who are less than or equal to 29 years of age, between 30 and 44 years of age, and teachers who are 45 years of age and over,” was tested using a one-way ANOVA.

The tenth hypothesis, “There are no significant differences in the perceptions of teacher efficacy among teachers in rural, suburban, and urban school settings,” was tested using a one-way ANOVA.

Summary

The following design components were presented and described in this chapter: an introduction, the hypotheses, the data sources including the data collection process, the instrumentation, and the statistical analysis. The purposes of this study were twofold—determine how teacher perceptions change over time in their ability to create a desired effect on student learning and examine the differences between principal and teacher perceptions of teacher efficacy.

CHAPTER 4

ANALYSIS OF DATA

The purposes of this study were to determine how teacher perceptions change over time in their ability to create a desired effect on student learning and examine the differences between principal and teacher perceptions of teacher efficacy.

The design of this study involved the following procedures:

1. During the 2012 spring semester, 150 public schools were identified through a random number table from a list of schools provided by the Indiana Department of Education that matched the grade-span criteria for elementary, middle, and high schools.
2. For the purposes of this study, a public school was defined as a school with a grade configuration of kindergarten through Grade 12 in the state of Indiana. Elementary schools were defined as schools with a grade configuration of pre-kindergarten through Grade 5, middle schools were defined as schools with a grade configuration of Grades 6 through 8 and high schools were defined as schools with a grade configuration of Grades 9 through 12. Of the 1,756 public schools in the state of Indiana, 433 matched the grade-span criteria for elementary schools, 172 matched the grade-span criteria for middle schools, and 234 matched the criteria for high schools.

3. After selecting the schools, links to the Teacher Efficacy Survey for Teachers (Appendix A) and the Teacher Efficacy Survey for Principals (Appendix B) were sent to principals identified in the survey population via email addresses provided by the Indiana Department of Education. In this email, principals were also sent the instructions (Appendix C) about how to complete the electronic survey for principals and to forward the request to their teachers to complete the electronic survey for teachers.
4. Follow up emails were sent to all principals reminding them of the request to complete the survey online and to forward the survey for teachers and the instructions for completing the survey.

Descriptive Data

The Teacher Efficacy Survey for Teachers and the Teacher Efficacy Survey for Principals were used to determine how teacher efficacy perceptions change over time and to identify differences between principal and teacher perceptions of teacher efficacy. These surveys mirrored each other and were developed after a review of the current literature, input from colleagues, and thorough field-testing of schools not in the original population. The teacher survey is a 20-item questionnaire with an addition six questions to collect demographic data from the teachers (Appendix A). The principal survey is a 20-item questionnaire with an additional seven questions to collect demographic data from the principals (Appendix B).

Through the use of a Likert Scale, the first 20 items on the survey were rated on a scale of 1 to 5 with 1 being *completely disagree*, 2 being *mostly disagree*, 3 being *neutral*, 4 being *mostly agree*, and 5 being *completely agree*. These 20 items were averaged for each respondent, which provided an overall teacher efficacy score.

Of the 150 schools chosen from the population for participation in the study, 52 principals responded and 171 teachers responded to the survey. Demographics collected from the sample population are reflected in Table 1.

Table 1

Demographics of Respondents

Demographics	Principals	Teachers
School		
Elementary School	17	59
Middle School	19	43
High School	14	68
School Size		
< 400 Students	14	52
400-1,000 Students	29	105
>1,000 Students	9	14
School Setting		
Rural	25	111
Suburban	19	35
Urban	8	21
Age of Participants		
≤29 Years of Age	1	29
30-44 Years of Age	24	63
≥45 Years of Age	27	78

Table 1 (continued)

Demographics	Principals	Teachers
Years of Experience		
0-4 Years	N/A	28
5-19 Years	N/A	82
≥20 Years	N/A	60
0-10 Years	4	N/A
11-20 Years	19	N/A
≥21 Years	29	N/A
Sex		
Male	37	50
Female	14	119
Administrator Experience		
0-5 Years Administrator	22	N/A
6-15 Years Administrator	23	N/A
≥16 Years Administrator	7	N/A

Through the use of Microsoft Excel, statistical analysis of the data was performed including mean, standard deviation, Z-Score, and *p*-value. Table 2 reflects the total averages, principal averages, teachers averages, and both principal and teacher Z-scores. Also, paired samples two-tailed *t*-test or an ANOVA was used to test the 10 null hypotheses. The level of significance for the ANOVA was set at .05.

Table 2

Analysis of Survey Questions

Questions	Total Average	Principal Average	Teacher Average	Principal Z-Score	Teacher Z-Score
1-External factors	3.58	3.83	3.50	-0.49	-1.50
2-At-risk students	3.74	3.92	3.68	-0.25	-0.96
3-Specific concepts	4.14	4.13	4.15	0.27	0.40
4-Student grades	3.57	4.02	3.43	-0.01	-1.70
5-Disruptive students	3.75	3.38	3.87	-1.60	-0.42
6-Teaching strategies	4.49	4.14	4.59	0.29	1.72
7-Adjusting instruction	4.01	3.84	4.06	-0.45	0.16
8-Learning styles	4.03	3.84	4.08	-0.46	0.21
9-Graduating students	3.94	3.92	3.94	-0.26	-0.20
10-Professional strengths/weaknesses	4.25	3.90	4.36	-0.30	1.03
11-Multiple levels of learning	3.77	3.24	3.94	-1.97	-0.22
12-Multiple teaching strategies	4.23	3.94	4.32	-0.20	0.92
13-Adequate professional training	3.95	3.79	3.99	-0.59	-0.05
14-Students master content	3.64	3.79	3.60	-0.59	-1.20
15-Teaching effort	4.35	4.50	4.30	1.19	0.85
16-Teachers significant factor	4.69	4.72	4.30	1.74	0.85
17-Teachers motivate students	4.33	4.63	4.24	1.53	0.66

Table 2 (continued)

Questions	Total Average	Principal Average	Teacher Average	Principal Z-Score	Teacher Z-Score
18-All students can learn	4.57	4.78	4.51	1.90	1.48
19-Student performance	3.82	4.23	3.96	0.52	-0.93
20-Teacher ownership for failure	3.69	3.90	3.63	-0.30	-1.11

Note. Maximum possible score –5.0

As shown in Table 2, the standard scores differed between principals and teachers the most in the following items: Research Question 1—“Teacher strengths are enough to overcome external factors outside the control of the teachers;” Research Question 4—“Teachers work well with struggling students;” Research Question 5—“Teachers are comfortable in dealing with students who become disruptive;” Research Question 6—“Teachers value learning new teaching strategies;” Research Question 10—“Teachers know their areas of professional strengths and weaknesses;” Research Question 11—“Teachers utilize multiple levels of learning in their classroom when designing lessons;” Research Question 12—“Teachers employ many different teaching techniques and instructional strategies;” Research Question 16—“Teachers are a significant factor in student performance;” Research Question 17—“Teachers have a significant part in the motivation of their students to learn classroom content;” and Research Question 19—“If teachers teach well, their students perform well.”

Of the top 10 questions that differed in standard scores between principals and teachers, Table 3 reflects the questions that were rated higher by principals than teachers.

Table 3

Top Five Differences Where Principals Rated Teacher Efficacy Higher Than Teachers Rated Teacher Efficacy

Questions	Principal Z-Score	Teacher Z-Score	Difference in Z-Score
1-External factors	-0.49	-1.50	1.01
4-Struggling students	-0.01	-1.70	1.69
16-Teachers significant factor	1.74	0.85	0.89
17-Teachers motivate students	1.53	0.66	0.87
19-Student performance	0.52	-0.93	1.45

Note. Maximum possible score = 5.0

Research Question 1—“Teacher strengths are enough to overcome external factors outside the control of the teachers.” Research Question 4—“Teachers work well with struggling students.” Research Question 16—“Teachers are a significant factor in student performance.” Research Question 17—“Teachers have a significant part in the motivation of their students to learn classroom content.” Research Question 19—“If teachers teach well, their students perform well.”

Of the top 10 questions that differed in standard scores between principals and teachers, Table 4 reflects the questions were rated higher by teachers than principals.

Table 4

*Top Five Differences Where Teachers Rated Teacher Efficacy Higher Than Principals Rated**Teacher Efficacy*

Questions	Principal Z-Score	Teacher Z-Score	Difference in Z-Score
5-Disruptive students	-1.60	-0.42	1.18
6-Teaching strategies	0.29	1.72	1.43
10-Professional strengths/weaknesses	-0.30	1.03	1.33
11-Multiple levels of learning	-1.97	-0.22	1.75
12-Multiple teaching strategies	-0.20	0.92	1.12

Note. Maximum possible score = 5.0

Research Question 5—“Teachers are comfortable in dealing with students who become disruptive.” Research Question 6—“Teachers value learning new teaching strategies.” Research Question 10—“Teachers know their areas of professional strengths and weaknesses.” Research Question 11—“Teachers utilize multiple levels of learning in their classroom when designing lessons.” Research Question 12—“Teachers employ many different teaching techniques and instructional strategies.”

Null Hypothesis 1

The first hypothesis was, “There are no significant differences in teacher efficacy among new, mid-career, and veteran teachers.” The data gathered from respondents were statistically analyzed using a one-way ANOVA to determine if there were significant differences in teacher efficacy among new, mid-career, and veteran teachers. To complete the ANOVA, each of the respondents’ scores for the 20 questions was averaged to determine their overall efficacy score.

Then, the averages were taken for each of the subgroups of new, mid-career, and veteran teachers to determine a group average. No significant differences were found among the groups and therefore the null hypothesis was accepted. An ANOVA summary is found in Table 5.

Table 5

Analysis of Variance for Teacher Efficacy Among New, Mid-Career, and Veteran Teachers

Experience level	SS	df	MS	F	p-value	F-crit.
Between Groups	0.121	2	0.060	0.361	0.698	3.050
Within Groups	27.987	167	0.168			
Total	28.108	169				

Note. $p < 0.05$

A one-way ANOVA was conducted to determine differences among groups of teachers with similar years of teaching experience. An ANOVA summary can be found in Table 5. There was no statistically significant difference in teacher efficacy for teachers with 0-4 years of experience, 5-19 years of experience or ≥ 20 years of experience, $F(2, 167) = 3.050, p < 0.05$.

Null Hypothesis 2

The second hypothesis was “There are no significant differences in the perceptions of teacher efficacy among elementary, middle and high school teachers.” The data gathered from respondents were statistically analyzed using a one-way ANOVA to determine if there were significant differences in teacher efficacy among elementary, middle, and high school teachers. To complete the ANOVA, each of the respondents’ scores for the 20 questions was averaged to determine their overall efficacy score. The averages were taken for each of the sub-groups of elementary, middle, and high school teachers to determine a group average. A statistically

significant difference was found among the groups and therefore the null hypothesis was rejected. An ANOVA summary is found in Table 6. A one-way ANOVA was conducted to determine difference among groups of teachers who taught in buildings with the same level grade configurations. There was a statistically significant difference in teacher efficacy for teachers in elementary, middle, and high schools, $F(2, 167) = 3.050, p < 0.05$.

Table 6

Analysis of Variance for Differences in Teacher Efficacy Among Elementary, Middle, and High School Teachers

Experience level	SS	df	MS	F	p-value	F-crit.
Between Groups	1.700	2	0.850	4.920	0.008*	3.050
Within Groups	28.851	167	0.173			
Total	30.551	169				

Note. * $p < 0.05$

Null Hypothesis 3

The third hypothesis was “There are no significant differences in the perceptions of teacher efficacy among elementary, middle and high school principals.” The data gathered from respondents were statistically analyzed using a one-way ANOVA to determine if there were significant differences in teacher efficacy among elementary, middle, and high school principals. To complete the ANOVA, each of the respondents’ scores for the 20 questions was averaged to determine their overall efficacy score. The averages were taken for each of the sub-groups of elementary, middle, and high school principals to determine a group average. Statistically significant differences were found among the groups, and the null hypothesis was rejected. An

ANOVA summary is found in Table 7. A one-way ANOVA was conducted to determine difference among groups of principals who worked in buildings with the same level grade configurations. There was a statistically significant difference in teacher efficacy for principals in elementary, middle, and high schools, $F(2, 47) = 3.195, p < 0.05$.

Table 7

Analysis of Variance for Differences in the Perceptions of Teacher Efficacy Among Elementary, Middle, and High School Principals

Experience level	SS	df	MS	F	p-value	F-crit.
Between Groups	1.001	2	0.501	3.652	0.034*	3.195
Within Groups	6.441	47	0.137			
Total	7.442	49				

Note. * $p < 0.05$

Null Hypothesis 4

The fourth hypothesis was “There is no significant difference in the perceptions of teacher efficacy between elementary teachers and elementary principals.” The data gathered from respondents were statistically analyzed using a two-tailed t -test to determine if there were significant differences in teacher efficacy between elementary teachers and elementary principals. To complete the t -test, each respondent’s scores for the 20 questions were averaged to determine the overall efficacy score. The averages were then taken for both of the sub-groups of elementary teachers and elementary principals. No significant difference was found between each group and therefore the null hypothesis was accepted. A t -test summary is found in Table 8. Elementary principal mean scores ($M = 4.21, SD = 0.29$) were higher than teacher mean

scores ($M = 4.13$, $SD = 0.35$) for teacher efficacy; therefore, there was no statistical difference found in the two scores, $t(31) = 0.869$, $p < 0.05$, two-tailed.

Table 8

T-test to Determine Significant Differences in the Perceptions of Teacher Efficacy Between Elementary Teachers and Elementary Principals

Paired samples	<i>t</i>	<i>df</i>	Sig. (2-tailed)
Teacher Efficacy	0.869	31	0.391

Note. $\beta = 0.05$; $p < 0.05$, two-tailed

Null Hypothesis 5

The fifth hypothesis was “There is no significant difference in the perceptions of teacher efficacy between middle school teachers and middle school principals.” The data gathered from respondents were statistically analyzed using a two-tailed *t*-test to determine if there were significant differences in teacher efficacy between middle school teachers and middle school principals. To complete the *t*-test, each respondent’s scores for the 20 questions were averaged to determine the overall efficacy score. Then, the averages were taken for both of the sub-groups of middle school teachers and middle school principals. No significant difference was found between each group; therefore, the null hypothesis was accepted. A *t*-test summary is found in Table 9. Although middle school principal mean scores ($M = 4.011$, $SD = 0.40$) were slightly lower than teacher mean scores ($M = 4.013$, $SD = 0.48$) for teacher efficacy, there was no statistical difference found in the two scores, $t(41) = -0.022$, $p < .05$, two-tailed.

Table 9

T-test to Determine Significant Differences in the Perceptions of Teacher Efficacy Between Middle School Teachers and Middle School Principals

Paired samples	<i>t</i>	<i>df</i>	Sig. (2-tailed)
Teacher Efficacy	-0.022	41	0.983

Note. $\beta = 0.05$; $p < 0.05$, two-tailed

Null Hypothesis 6

The sixth hypothesis was “There is no significant difference in the perceptions of teacher efficacy between high school teachers and high school principals.” The data gathered from respondents were statistically analyzed using a two-tailed *t*-test to determine if there were significant differences in teacher efficacy between high school teachers and high school principals. To complete the *t*-test, each respondent’s scores for the 20 questions were averaged to determine the overall efficacy score. Then, the averages were taken for both of the subgroups of high school teachers and high school principals. No significant difference was found between each group and therefore the null hypothesis was accepted. A *t*-test summary is found in Table 10. High school principal mean scores ($M = 3.848$, $SD = 0.40$) were slightly lower than teacher mean scores ($M = 3.901$, $SD = 0.42$) for teacher efficacy; therefore, there was no statistical difference found in the two scores, $t(41) = -0.444$, $p < 0.05$, two-tailed.

Table 10

T-test to Determine Significant Differences in the Perceptions of Teacher Efficacy Between High School Teachers and High School Principals

Paired samples	<i>t</i>	<i>df</i>	Sig. (2-tailed)
Teacher Efficacy	-0.444	19	0.661

Note. $\beta = 0.05$; $p < 0.05$, two-tailed

Null Hypothesis 7

The seventh hypothesis was “There is no significant difference in the perceptions of teacher efficacy between male and female teachers.” The data gathered from respondents were statistically analyzed using a two-tailed *t*-test to determine if there were significant differences in teacher efficacy between male and female teachers. To complete the *t*-test, each respondent’s scores for the 20 questions were averaged to determine the overall efficacy score. Then, the averages were taken for both of the sub-groups of male and female teachers. A statistically significant difference was found between each group; and therefore, the null hypothesis was rejected. A *t*-test summary is found in Table 11. Female mean scores ($M = 4.091$, $SD = 0.36$) were higher than male mean scores ($M = 3.838$, $SD = 0.46$) for teacher efficacy. A statistically significant difference was found with women having a higher degree of teacher efficacy than men, $t(75) = -3.475$, $p < 0.05$, two-tailed.

Table 11

T-test to Determine Significant Differences in the Perceptions of Teacher Efficacy Between Male and Female Teachers

Paired samples	<i>t</i>	<i>df</i>	Sig. (2-tailed)
Teacher Efficacy	-3.475	75	0.001*

Note. $\alpha = 0.05$; * $p < 0.05$, two-tailed

Null Hypothesis 8

The eighth hypothesis was “There are no significant differences in the perceptions of teacher efficacy among teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students.” The data gathered from respondents were statistically analyzed using a one-way ANOVA to determine if there were significant differences in teacher efficacy among teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students. To complete the ANOVA, each respondent’s scores for the 20 questions was averaged to determine the overall efficacy score. Then, the averages were taken for each of the sub groups of teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students to determine a group average. No significant differences were found among the groups; therefore, the null hypothesis was accepted. An ANOVA summary is found in Table 12. There were no statistically significant differences in teacher efficacy for teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students, $F(2, 168) = 0.345, p < 0.05$.

Table 12

Analysis of Variance to Determine Significant Differences in the Perceptions of Teacher Efficacy Among Teachers by School Size

Experience level	SS	df	MS	F	p-value	F-crit.
Between Groups	0.384	2	0.192	1.071	0.698	0.345
Within Groups	30.170	168	0.180			
Total	30.554	170				

Note. $p < 0.05$

Null Hypothesis 9

The ninth hypothesis was “There are no significant differences in the perceptions of teacher efficacy among teachers who are less than 29 years of age, between 30 and 44 years of age and teachers who are 45 and over years of age.” The data gathered from respondents were statistically analyzed using a one-way ANOVA to determine if there were significant differences in teacher efficacy among teachers who were less than 29 years of age, between 30 and 44 years of age and teachers who were 45 and over years of age. To complete the ANOVA, each respondent’s scores for the 20 questions were averaged to determine the overall efficacy score. The averages were then taken for each of the sub-groups of teachers who were less than 29 years of age, between 30 and 44 years of age, and 45 and over years of age. No significant differences were found among the groups; and therefore, the null hypothesis was accepted. An ANOVA summary is found in Table 13. There were no statistically significant differences in teacher efficacy for teachers who were less than 29 years of age, between 30 and 44 years of age, and 45 and over years of age, $F(2, 169) = 3.050, p < 0.05$.

Table 13

Analysis of Variance to Determine Significant Differences in the Perceptions of Teacher Efficacy Among Teachers by Teacher Age

Experience levels	SS	df	MS	F	p-value	F-crit.
Between Groups	0.368	2	0.184	1.106	0.333	3.050
Within Groups	27.740	167	0.166			
Total	28.108	169				

Note. $p < 0.05$

Null Hypothesis 10

The tenth hypothesis was “There are no significant differences in the perceptions of teacher efficacy among teachers in rural, suburban, and urban school settings.” The data gathered from respondents were statistically analyzed using a one-way ANOVA to determine if there were significant differences in teacher efficacy among teachers in rural, suburban, and urban school settings. To complete the ANOVA, each respondent’s scores for the 20 questions were averaged to determine the overall efficacy score. The averages were then taken for each of the subgroups of teachers in rural, suburban, and urban school settings. No significant differences were found among the groups; therefore, the null hypothesis was accepted. An ANOVA summary is found in Table 14. There were no statistically significant differences in teacher efficacy for teachers in rural, suburban, and urban school settings, $F(2, 164) = 3.051, p < 0.05$.

Table 14

Analysis of Variance to Determine Significant Differences in the Perceptions of Teacher Efficacy Among Teachers in Rural, Suburban, and Urban School Settings

Experience levels	SS	df	MS	F	p-value	F-crit.
Between Groups	0.597	2	0.299	1.663	0.193	3.051
Within Groups	29.453	164	0.180			
Total	30.050	166				

Note. $p < 0.05$

Summary of Findings

This chapter was divided into two sections providing a summary of the study's findings. The first section provided descriptive data found in the teacher efficacy survey for teachers and the teacher efficacy survey for principals. The second section provided a testing summary of the 10 hypotheses.

Summary of Descriptive Data

Surveys were sent to 50 public school principals chosen from a population of elementary schools with a grade configuration of pre-kindergarten through grade five. Another 50 school principals were chosen from a population of middle schools with a grade configuration of grades six through eight, and a final 50 principals were chosen from a population of high schools with a grade configuration of grades nine through 12. Altogether, 150 principals were selected for the survey. Each principal was asked to complete the principal version of the teacher efficacy survey and forward instructions and the teacher version of the teacher efficacy survey to their staff. Respondents to the survey included 17 elementary principals, 59 elementary teachers, 19

middle school principals, 43 middle school teachers, 14 high school principals, and 68 high school teachers.

Summary of Hypothesis Testing

Ten hypotheses were tested. The following is a summary of the results for each hypothesis.

1. An analysis of variance test compared the differences in the perceptions of teacher efficacy among new, mid-career, and veteran teachers. There were no statistically significant differences found in perceptions of teacher efficacy among the three sub-groups. Therefore, the null hypothesis was accepted.
2. An analysis of variance test compared the differences in the perceptions of teacher efficacy among elementary, middle, and high school teachers. There were statistically significant differences found in perceptions of teacher efficacy among the three sub-groups. Therefore, the null hypothesis was rejected.
3. An analysis of variance test compared the differences in the perceptions of teacher efficacy among elementary, middle, and high school principals. There were no statistically significant differences found in perceptions of teacher efficacy among the three sub-groups. Therefore, the null hypothesis was accepted.
4. A *t*-test compared the difference in the perceptions of teacher efficacy between elementary teachers and elementary principals. There was no statistically significant difference found in perceptions of teacher efficacy between the two subgroups. Therefore, the null hypothesis was accepted.
5. A *t*-test compared the difference in the perceptions of teacher efficacy between middle school teachers and middle school principals. There was no statistically

- significant difference found in perceptions of teacher efficacy between the two subgroups. Therefore, the null hypothesis was accepted.
6. A *t*-test compared the difference in the perceptions of teacher efficacy between high school teachers and high school principals. There was no statistically significant difference found in perceptions of teacher efficacy between the two subgroups. Therefore, the null hypothesis was accepted.
 7. A *t*-test compared the difference in the perceptions of teacher efficacy between male and female teachers. There was a statistically significant difference found in perceptions of teacher efficacy between the two subgroups. Therefore, the null hypothesis was rejected.
 8. An analysis of variance compared the differences in the perceptions of teacher efficacy among teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students. There were no statistically significant differences found in the perceptions of teacher efficacy among the three subgroups. Therefore, the null hypothesis was accepted.
 9. An analysis of variance compared the differences in the perceptions of teacher efficacy among teachers who are less than 29 years of age, between 30 and 44 years of age, and 45 and over years of age. There were no statistically significant differences found in the perceptions of teacher efficacy among the three subgroups. Therefore, the null hypothesis was accepted.
 10. An analysis of variance compared the differences in the perceptions of teacher efficacy among teachers in rural, suburban, and urban school settings. There were no

statistically significant differences found in the perceptions of teacher efficacy among the three subgroups. Therefore, the null hypothesis was accepted.

CHAPTER 5

SUMMARY OF FINDINGS AND DISCUSSION

Chapter 5 contains three sections. The first section provides a discussion of the findings which include a summary of the descriptive data and a summary of the hypothesis testing. The second section provides my conclusions and recommendations for implementation and further study. The third section provides a reflection on my research findings and a chapter summary. The purposes of this study were twofold—determine how teacher perceptions change over time in their ability to create a desired effect on student learning and examine the differences between principal and teacher perceptions of teacher efficacy.

The design of this study involved the following procedures:

1. During the 2012 spring semester, 150 public schools were identified through a random number table from a list of schools provided by the Indiana Department of Education that matched the grade-span criteria for elementary, middle, and high schools.
2. For the purposes of this study, a public school was defined as a school with a grade configuration of kindergarten through Grade 12 in the state of Indiana. Elementary schools were defined as schools with a grade configuration of pre-kindergarten through Grade 5, middle schools were defined as schools with a grade configuration of Grades 6 through 8 and high schools were defined as schools with a grade

configuration of Grades 9 through 12. Of the 1,756 public schools in the state of Indiana, 433 matched the grade-span criteria for elementary schools, 172 matched the grade-span criteria for middle schools, and 234 matched the criteria for high schools.

3. After selecting the schools, links to the Teacher Efficacy Survey for Teachers (Appendix A) and the Teacher Efficacy Survey for Principals (Appendix B) were sent to principals identified in the survey population via email addresses provided by the Indiana Department of Education. In this email, principals were also sent the instructions (Appendix C) about how to complete the electronic survey for principals and to forward the request to their teachers to complete the electronic survey for teachers.
4. Follow-up emails were sent to all principals reminding them of the request to complete the survey online and to forward the survey for teachers and the instructions for completing the survey.

Of the 150 schools chosen from the population for participation in the study, 52 principals responded and 171 teachers responded to the survey. The principal survey return was 35%. The number of teachers in the sample population was undetermined due to the lack of knowledge regarding how many teachers received the instructions from their principals.

Statistical analysis of the data included descriptive statistics comparing each of the 20 questions to the average scores of all questions for teacher and principal groups. A paired samples two-tailed *t*-test or an analysis of variance (ANOVA) was used to test the 10 null hypotheses. The level of significance for the analyses of variance was set at .05.

Discussion of the Findings

The purposes of this study were to (a) determine how teacher perceptions change over time in their ability to create a desired effect on student learning and (b) examine the differences between principal and teacher perceptions of teacher efficacy. This section offers a discussion of the findings of the descriptive data and the findings of each of the 10 null hypotheses.

Summary of Descriptive Data

Surveys were sent to principals in 150 public school principals with 50 from each level of elementary, middle, and high schools. Principals were asked to respond to the online survey of 20 questions and seven additional demographic questions. They were also asked to forward the survey to their teachers to complete 20 questions and six additional demographic questions. Through the implementation of a Likert scale, all survey items were rated from *completely disagree* to *completely agree*. A corresponding number was assigned to each of the five possible responses—*completely disagree* received a 1, *mostly disagree* received a 2, *neutral* received a 3, *mostly agree* received a 4, and *completely agree* received a 5. The teacher efficacy scores for each of the respondents were averaged to determine an overall teacher efficacy score. Those scores were averaged with those of other respondents to develop an overall efficacy score to use for comparative purposes.

Of the top 10 of the 20 teacher efficacy questions on the survey related to differences between principals and teachers, principals rated teacher efficacy higher in five of the 10 items. The questions and corresponding statements from those five questions are: Question 1—“Teacher strengths are enough to overcome external factors outside the control of the teachers,” Question 4—“Teachers work well with struggling students,” Question 16—“Teachers are a significant factor in student performance,” Question 17—“Teachers have a significant part in the motivation of their

students to learn classroom content,” and Question 19–“If teachers teach well, their students perform well.” Differences in principal and teacher Z-Scores for the top five questions that principals rated teacher efficacy higher than teachers were reflected in Table 3.

As is noted in Table 3, principals believe more than teachers that teachers have abilities to work with struggling students whether through factors outside of a teacher’s control or for students who have motivational issues. One possible reason for this assertion could be that principals believe challenges placed in front of teachers that stress their capacities to effectively work with struggling or challenging students are surmountable. Additionally, a possible reason for these questions to rise to the top for principals could be that principals have a perspective provided by working with many teachers and their diverse abilities. Principals see teachers who are more effective and others who are less effective in educational situations and can draw from those experiences when articulating their efficacy beliefs.

Of the top 10 of 20 teacher efficacy questions on the survey related to differences between principals and teachers, teachers rated teacher efficacy higher in five of the 10 items. The questions and corresponding statements from those six questions are Question 5–“Teachers are comfortable in dealing with students who become disruptive,” Question 6–“Teachers value learning new teaching strategies,” Question 10–“Teachers know their areas of professional strengths and weaknesses,” Question 11–“Teachers utilize multiple levels of learning in their classroom when designing lessons,” and Question 12–“Teachers employ many different teaching techniques and instructional strategies.” Differences in teacher and principal Z-Scores for the top five questions that teachers rated higher than principals were presented in Table 4. Table 4 reflects that teachers believe that they know themselves and their teaching strengths better than principals. One possible reason that principals rated teachers lower in these five questions could

be that principals believe teachers do not have an entirely accurate measurement of their abilities. An additional reason that principals rated these research questions lower than teachers could be that many of these items are easily observed by the administrator and many of these items can readily be reflected on any feedback a principal may provide to a teacher whether through ad-hoc communications or more formal communications as articulated in a teacher evaluation.

Summary of Hypothesis Testing

The following provides a summary of the 10 hypotheses tested and conclusions drawn from the results of the testing.

H₀1 stated, “There are no significant differences in teacher efficacy among new, mid-career, and veteran teachers.” This hypothesis was tested using a one-way analysis of variance. The ANOVA analysis revealed that no statistically significant differences were found among new, mid-career, and veteran teachers.

H₀2 stated, “There are no significant differences in the perceptions of teacher efficacy among elementary, middle, and high school teachers.” This hypothesis was tested using a one-way analysis of variance. The ANOVA analysis revealed that statistically significant differences in teacher efficacy were found among elementary, middle, and high school teachers.

H₀3 stated, “There are no significant differences in the perceptions of teacher efficacy among elementary, middle, and high school principals.” This hypothesis was tested using a one-way analysis of variance. The ANOVA analysis revealed that statistically significant differences in teacher efficacy were found among elementary, middle, and high school principals.

H₀₄ stated, “There is no significant difference in the perceptions of teacher efficacy between elementary teachers and elementary principals.” This hypothesis was tested using a two-tailed *t*-test. The *t*-test analysis revealed that no statistically significant difference in teacher efficacy was found between elementary teachers and elementary principals.

H₀₅ stated, “There is no significant difference in the perceptions of teacher efficacy between middle school teachers and middle school principals.” This hypothesis was tested using a two-tailed *t*-test. The *t*-test analysis revealed that no statistically significant difference in teacher efficacy was found between middle school teachers and middle school principals.

H₀₆ stated, “There is no significant difference in the perceptions of teacher efficacy between high school teachers and high school principals.” This hypothesis was tested using a two-tailed *t*-test. The *t*-test analysis revealed that no statistically significant difference in teacher efficacy was found between high school teachers and high school principals.

H₀₇ stated, “There is no significant difference in the perceptions of teacher efficacy between male and female teachers.” This hypothesis was tested using a two-tailed *t*-test. The *t*-test analysis revealed that a statistically significant difference in teacher efficacy was found between males and females.

H₀₈ stated, “There are no significant differences in the perceptions of teacher efficacy among teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students.” This hypothesis was tested using a one-way analysis of variance. The ANOVA analysis revealed that no

statistically significant difference in teacher efficacy was found among teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students.

H₀₉ stated, “There are no significant differences in the perceptions of teacher efficacy among teachers who were less than 29 years of age, between 30 and 44 years of age, and 45 and over years of age. This hypothesis was tested using a one-way analysis of variance. The ANOVA analysis revealed that no statistically significant difference in teacher efficacy was found among teachers who were less than 29 years of age, between 30 and 44 years of age, and 45 and over years of age.

H₀₁₀ stated, “There are no significant differences in the perceptions of teacher efficacy among teachers in rural, suburban, and urban school settings.” This hypothesis was tested using a one-way analysis of variance. The ANOVA analysis revealed that no statistically significant difference in teacher efficacy was found among teachers in rural, suburban, and urban school settings.

Conclusions and Research Recommendation for Further Study

Conclusions

H₀₁. For the most part, new, middle, and high school teachers have similar levels of teacher efficacy. There were no significant differences in teacher efficacy among new, mid-career, and veteran teachers. Averages of teacher efficacy for new (4.054), mid-career (3.992), and veteran teachers (4.039) are very similar as reflected in Table 15.

Table 15

Differences in Teacher Efficacy Among New, Mid-Career, and Veteran Teachers

Groups	Count	Sum	Average	Variance
0-4 Years	28	113.524	4.054	0.077
5-19 Years	82	327.313	3.992	0.190
≥ 20 Years	60	242.350	4.039	0.178

This research supports other research in the area of age comparisons to teacher efficacy. Woolfolk Hoy (2000) found that teacher efficacy was mostly formed during the student teaching and first year of teaching with efficacy beliefs being “resistant to change” once they were established. Even with self-efficacy beliefs, Bandura (1997) noted that once established, self-efficacy beliefs remain relatively stable.

H₀₂. Perceptions of teacher efficacy are statistically different among elementary, middle and high school teachers. Averages of perceptions of teacher efficacy for elementary (4.133), middle (4.014), and high school (3.901) teachers were statistically different. Averages for elementary teachers were the highest with averages for middle school teachers second highest and averages for high school teachers the lowest of the three. These statistics are found in Table 16.

Table 16

Differences in Perceptions of Teacher Efficacy Among Elementary, Middle, and High School Teachers

Groups	Count	Sum	Average	Variance
Elementary School	59	243.831	4.133	0.126
Middle School	43	172.600	4.014	0.233
High School	68	265.256	3.901	0.176

It was clear that teacher efficacy decreased in schools with higher grade levels. One could assert that with varying educational experiences students bring to class age brings more variations with it. Thus, students in higher grade levels have a more diverse background due to their life experiences. Those varying degree of differences would most assuredly make a teacher's job more complicated and student weakness more ingrained and perhaps more difficult to overcome.

This difference in teacher efficacy is supported in research; however, it was found that teacher efficacy comparisons among grade levels was less researched than many other teaching aspects such as age, experience, and school size. Soodak and Podell (1996) found that preschool and elementary teachers had a higher degree of perceived self-efficacy than that of secondary teachers. This assertion was further supported in the research of Egger (2006) when she studied teacher efficacy and teacher demographics. Egger concluded that elementary teachers' perceptions of teacher efficacy were higher than those of secondary teachers. Further research by Klassen and Chiu (2010) supported this assertion as well. Klassen and Chiu pointed to the work of Wolters and Daugherty when they found that teachers in higher grade levels reported

lower degrees of self-efficacy. In their own research, Klassen and Chiu also found that teachers in higher grade levels reported less teacher efficacy than those in lower grade levels when they examined the patterns of self-efficacy beliefs of 1,430 teachers. They found that teachers in elementary schools reported 7% better self-efficacy than those who worked in secondary schools. Not only did Klassen and Chiu conclude that elementary teachers had higher degrees of self-efficacy than secondary teachers, they also observed that even within individual schools teachers who taught the lowest grade levels had the highest degree of self-efficacy. They noted that kindergarten teachers averaged 3% higher self-efficacy than teachers who taught first or second grade students.

H₀3. Perceptions of teacher efficacy are statistically different among elementary, middle, and high school principals. Averages of perceptions of teacher efficacy for elementary (4.207), middle (4.011), and high school (3.848) principals were statistically different. Averages for elementary principals were the highest with averages for middle school principals second highest, and averages for high school principals lowest of the three. These numbers are reflected in Table 17.

Table 17

Differences in Perceptions of Teacher Efficacy Among Elementary, Middle, and High School Principals

Groups	Count	Sum	Average	Variance
Elementary School	17	71.511	4.207	0.086
Middle School	19	76.216	4.011	0.164
High School	14	53.869	3.848	0.163

It is interesting that principal perceptions of teacher efficacy mirror those of teachers in the same grade level in which the principal serves. Since this research had principals rating general teaching efficacy in the same manner as their teachers, it was logical that principal and teacher reports of teacher efficacy were similar. With principals reporting very similarly to teachers in regards to teacher efficacy by grade level configurations, this further supported the hypothesis that teacher efficacy decreases in higher grade levels.

H₀4. Elementary teachers and elementary principals have similar levels of perceptions of teacher efficacy. There were no significant differences in elementary teacher and elementary principal perceptions of teacher efficacy. Averages of teacher efficacy for elementary teachers (4.133) and elementary principals (4.207) were very similar (Table 18).

Table 18

Differences in Perceptions of Teacher Efficacy Between Elementary Teachers and Elementary Principals

Groups	Count	Sum	Average	Variance
Teachers	59	113.524	4.133	0.126
Principals	17	71.512	4.207	0.086

With elementary principals mostly coming from the elementary teaching ranks, it is logical that their perceptions of teacher efficacy would not differ from those of elementary teachers. This again supports the research that states once efficacy beliefs are established, they remain stable (Bandura, 1997; Woolfolk Hoy, 2000).

H₀5. Middle school teachers and middle school principals have similar levels of perceptions of teacher efficacy. There were no significant differences in middle school teacher

and middle school principal perceptions of teacher efficacy. Averages of teacher efficacy for middle school teachers (4.014) and middle school principals (4.011) were very similar as reflected in Table 19.

Table 19

Differences in Perceptions of Teacher Efficacy Between Middle School Teachers and Middle School Principals

Groups	Count	Sum	Average	Variance
Teachers	43	172.602	4.014	0.233
Principals	19	76.209	4.011	0.483

Much like the relationship between elementary principals and elementary teachers regarding teacher efficacy, middle school principals and middle school teachers have very similar perceptions of teacher efficacy.

H₀₆. High school teachers and high school principals had similar levels of perceptions of teacher efficacy. There were no significant differences in high school teacher and high school principal perceptions of teacher efficacy. Averages of teacher efficacy for high school teachers (3.901) and high school principals (3.845) are very similar as presented in Table 20.

Table 20

Differences in Perceptions of Teacher Efficacy Between High School Teachers and High School Principals

Groups	Count	Sum	Average	Variance
Teachers	68	265.268	3.901	0.176
Principals	14	53.830	3.845	0.163

Like the principal and teacher similarities in elementary and middle schools, the difference in teacher efficacy between high school principals and high schools teachers are negligible. Having all three levels with similar efficacy beliefs between principals and teachers is a very strong support to efficacy beliefs not changing once they are set (Woolfolk Hoy, 2000). Also, this trifecta strengthens Hypotheses 2 and 3 in that teacher efficacy beliefs do differ significantly among elementary, middle, and high schools.

H₀₇. Perceptions of teacher efficacy are statistically different between male and female teachers. Averages of teacher efficacy for male teachers (3.837) and female teachers (4.091) were different with perceptions of female teachers higher than those of male teachers at a statistically different level as shown in Table 21.

Table 21

Differences in Perceptions of Teacher Efficacy Between Male and Female Teachers

Groups	Count	Sum	Average	Variance
Male	50	191.850	3.837	0.211
Female	119	486.829	4.091	0.129

This hypothesis is supported by other research. In a study of 373 teachers, Garrett (1977) found that female teachers attributed the success of their students higher for teacher-controlled activities than their male counterparts. In this same study, male teachers put more emphasis on a student's success relating to students with higher academic ability. In a study conducted by Brennan and Robison (1995), it was determined that teacher efficacy was weaker in male than in female teachers. Comerchero (2008) found that gender did make a difference in teaching efficacy and stated that "being female was positively related to teaching efficacy" (p. 86). Multiple studies in other countries also explored the relationship of gender and teacher efficacy. Using a teacher efficacy scale, Khurshid, Qasmi, and Ashraf (2012) surveyed 75 male and female school teachers selected from 12 schools in Islamabad. This research concluded that female teachers scored higher on the teacher efficacy scale than their male counterparts.

There is a plethora of research regarding male and female differences in efficacy from computer engineering to exercise with varying results; however, for teachers the research is clear, female teachers most typically have a higher degree of teaching efficacy than do male teachers. Not only did I find that female teachers had higher degrees of teacher efficacy, it was found that female principals also reported higher degrees of efficacy than male principals (Tschannen-Moran & Gareis, 2004).

H₀8. The perceptions of teacher efficacy among teachers in schools with less than 400 students, schools with 401-1,000 students, and schools with more than 1,000 students were very similar. Averages in the perceptions of teacher efficacy among teachers in schools with less than 400 students (4.065), schools with 401-1,000 students (3.972), and schools with more than 1,000 students (4.086) were very similar and not statistically different as reflected in Table 22.

Table 22

Differences in Perceptions of Teacher Efficacy Among Teachers by Size of School Enrollment

Enrollment	Count	Sum	Average	Variance
≤400	52	211.354	4.065	0.116
401-1,000	105	417.082	3.972	0.219
>1,000	14	57.200	4.086	0.117

H₀9. The perceptions of teacher efficacy among teachers who were less than or equal to 29 years of age, between 30 and 44 years of age, and 45 and over years of age were very similar. Averages perceptions of teacher efficacy among teachers who were less than or equal to 29 years of age (4.054), between 30 and 44 years of age (3.958), and 45 and over years of age (4.055) were very similar and not statistically different as shown in Table 23.

Table 23

Differences in the Perceptions of Teacher Efficacy Among Teachers by Age

Age	Count	Sum	Average	Variance
≤29	29	117.571	4.054	0.091
30-44	63	249.363	3.958	0.223
≥45	78	316.252	4.055	0.148

Much like experience levels, age does not make a significant difference in levels of teacher efficacy. As with Hypothesis 1, it had been determined that efficacy beliefs are resistant

to change once they were established in the student teaching or first year of one's teaching career (Woolfolk Hoy, 2000).

H₀10. The perceptions of teacher efficacy among teachers in rural, suburban, and urban settings were very similar. Averages in the perceptions of teacher efficacy among teachers in schools in a rural setting (3.965), teachers in schools in a suburban setting (4.087), and teachers in a school in an urban setting (4.101) were very similar and not statistically different as shown in Table 24.

Table 24

Differences in Perceptions of Teacher Efficacy Among Teachers in Rural, Suburban, and Urban Settings

Setting	Count	Sum	Average	Variance
Rural	111	440.165	3.965	0.186
Suburban	35	143.030	4.087	0.220
Urban	21	86.113	4.101	0.075

Teachers with varying abilities are spread throughout our state and one can find highly effective, effective, and less than effective teachers in any school he or she would visit.

Although not a significant difference, the differences among rural, suburban, and urban teachers in teacher efficacy certainly do not mirror any perceived differences in socio-economic status.

One could imagine that once beginning a career as an urban teacher that he or she would remain teaching in an urban area just as those beginning their careers in a rural or suburban area would most likely remain in those geographical areas during their teaching careers.

Recommendations for Further Study

1. A study should be conducted to show the relationship between a teacher's perceived efficacy and his or her most recent evaluation classification of highly effective, effective, needs improvement, or ineffective as identified by Indiana state law.
2. A study should be conducted to show the relationship between the perceived teacher efficacy of principals who are most effective and the perceived teacher efficacy of principals who are least effective as identified by their superintendents.
3. A study should be conducted to show the relationship between the average teacher efficacy scores of schools with high growth and those schools that exhibit low growth as identified by the Indiana Department of Education.
4. A study should be conducted to determine the relationship between a teacher's perceived efficacy and his or her students' success level on standardized testing.
5. A study should be conducted to show the relationship between a teacher's perceived efficacy and the amount of professional development he or she receives.
6. A study should be conducted to show the relationship between the average teacher efficacy in low poverty and the average teacher efficacy in high poverty schools.
7. A comparison among standardized tests scores of elementary, middle, and high schools as identified in my sample should be done to determine the differences in pass rates. These differences should be compared with the findings of this study that perceived teacher efficacy decreases in schools with higher grade levels.
8. A study should be conducted to show the relationship between perceived teacher efficacy and education levels of teachers.
9. A study should be conducted to show the relationship among the perceived teacher

efficacy of teachers and the post-secondary schools where they received their teaching certifications.

10. A study should be conducted to determine the difference in teacher efficacy beliefs of teachers who began their careers in an urban setting and moved to a rural or suburban setting with those who began in a rural or suburban setting and moved to an urban setting.

Reflections on Research Findings

This study determined that teacher efficacy decreases from elementary schools to middle schools and from middle schools to high schools. It is interesting how this powerful concept of teacher efficacy and the results of this study support the recent adoption of third-grade reading proficiency in the state of Indiana. Much like what legislators and state politicians assert, it is difficult to achieve a desired effect in later grades. Teacher efficacy research supports this idea in that teachers believe the higher grade level in which a student is enrolled, the less influence teachers have on them to achieve.

Teacher efficacy is a powerful idea and a teacher's belief in his or her abilities to create a desired effect does indeed matter. Teacher efficacy influences the effort a teacher is willing to put forth and how he or she persists when faced with obstacles. More and more obstacles are placed before teachers with our everchanging society and the increased expectations that are placed on schools. Today, teachers in most states have much higher stakes with the academic achievement of their students being tied to pay. All of these increased expectations must be met with increased effort and the amount of planning and professional development required to meet these challenges will tax many who serve in schools and who teach.

To improve, teachers need quality training both in pre-service institutions and while they

are practicing their craft as professional teachers. Building mastery experiences and mentorship are as important as ever for student teachers and novice teachers. Experienced educators must purposefully work to ensure that all young teachers receive the best training possible as that training will help develop a sense of efficacy that will be carried with them throughout their entire teaching career.

As Tschannen-Moran and Garegis (2004) noted, principals are being viewed to spearhead change efforts. Change takes education, and principals must devote more time to instruction. Principals must behave more like teacher leaders and less like managers. Teachers are learners, and principals are responsible for providing them the information that they need to succeed. Soon, teachers throughout the state will be looking to principals like they never have before to learn how to improve their evaluation rating. Principals must be well-versed in facilitation skills and professional development. Although many do focus on their teaching staff as a whole, a concerted effort must be made to help those new to their institutions.

Never before has it been as important as it is today for teachers to believe in themselves. The content standards movement of a previous decade saw much change in what teachers do and the teaching standards movement we are currently experiencing calls for even more change. With change comes training. In a time when many feel the need to be less collaborative due to the perceived competition among teachers, it is those schools that will be most collaborative that will see the most success in their teaching staffs. This research clearly shows that success, or mastery experiences, builds efficacy, and those teachers with the most teacher efficacy will be able to meet the challenges of today and tomorrow with the vigor required to succeed. This is an example of the adage that success breeds success.

Summary of the Study

This study was designed to determine how teacher perceptions change over time in their ability to create a desired effect on student learning and to examine the differences between principal and teacher perceptions of teacher efficacy. The tests revealed that there was no significant difference in teacher efficacy over time. Through examining teacher efficacy of teachers in different age groups, it was found that once teacher efficacy beliefs are determined by the teacher, then they remain consistent. This research also supported that teacher and principal perceptions of teacher efficacy are very similar as they decrease the higher the grade level of the schools in which they serve. Principals and other educational leaders should understand the impact of teacher efficacy and make a considerable effort to reinforce positive efficacy building experiences early in a teacher's career.

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APPENDIX A: TEACHER EFFICACY SURVEY—TEACHER

Directions: Please respond by checking one box for each question.

Question

# Question	Completely Agree	Mostly Agree	Neutral	Mostly Disagree	Completely Disagree
1 My teaching strengths are enough to overcome external factors outside of my control.					
2 I can get through to most of the students who are at risk.					
3 I know how to provide instruction to students who are struggling with a specific concept.					
4 Students who struggle in other classrooms usually get better grades in my classes.					
5 I am comfortable in dealing with students who become disruptive.					
6 I value learning new teaching strategies.					
7 When students struggle in my class, I am able to adjust my instruction to his/her level.					
8 I am able to effectively address varied learning styles within my classroom.					
9 I have the ability to teach students who are at risk of not graduating.					
10 I know my areas of professional strengths and weaknesses.					
11 I utilize multiple levels of learning in my classroom when designing lessons.					
12 I employ many different teaching techniques and instructional strategies.					
13 I have received adequate training/professional development to be an effective teacher.					
14 When students master content quickly, it is because I provided quality instruction.					
15 Students perform better when I put more effort into my job.					
16 When considering all factors, teachers are a significant factor in student performance.					
17 I have a significant part in the motivation of my students to learn classroom content.					
18 All students can learn.					
19 If I teach well, students will perform well.					
20 If a large percentage of students fail one of my tests, it is my fault.					

- 21 Check the grade configuration that most closely identifies your school. PK/K-5 6-8 9-12
- 22 What is the current enrollment of your school? ≤400 410-1,000 >1,000
- 23 What is the setting of your school? Rural Suburban Urban
- 24 What is your current age? ≤29 30-44 ≥45
- 25 How many years have you been teaching? 0-4 5-19 ≥20
- 26 What is your gender Male Female

APPENDIX B: TEACHER EFFICACY SURVEY—PRINCIPAL

Directions: Please respond by checking one box for each question.

Question

	Completely Agree	Mostly Agree	Neutral	Mostly Disagree	Completely Disagree
1 My teachers' strengths are enough to overcome external factors outside of my control.					
2 My teachers can get through to most of the students who are at risk.					
3 My teachers know how to provide instruction to students who are struggling with a specific concept.					
4 My teachers work well with struggling students.					
5 My teachers are comfortable in dealing with students who become disruptive.					
6 My teachers value learning new teaching strategies.					
7 When students struggle in my teachers' classes, teachers are able to adjust their instruction to the student's level.					
8 My teachers are able to effectively address varied learning styles within their classroom.					
9 My teachers have the ability to teach students who are at risk of not graduating.					
10 My teachers know their areas of professional strengths and weaknesses.					
11 My teachers utilize multiple levels of learning in their classroom when designing lessons.					
12 My teachers employ many different teaching techniques and instructional strategies.					
13 My teachers have received adequate training/professional development to be an effective teacher.					
14 When students master content quickly, it is because my teachers provided quality instruction.					
15 Students perform better when my teachers put more effort into their job.					
16 When considering all factors, teachers are a significant factor in student performance.					
17 My teachers have a significant part in the motivation of their students to learn classroom content.					
18 All students can learn.					
19 If my teachers teach well, their students will perform well.					
20 If a large percentage of students fail one of my teacher's tests, it is my teacher's fault.					

- 21 Check the grade configuration that most closely identifies your school. PK/K-5 6-8 9-12
- 22 What is the current enrollment of your school? ≤400 410-1,000 >1,000
- 23 What is the setting of your school? Rural Suburban Urban
- 24 What is your current age? ≤29 30-44 ≥45
- 25 How many years have you been in education? 0-10 11-20 ≥21
- 26 What is your gender Male Female
- 27 How many years have you served as the primary building administrator? 0-5 6-15 ≥16

APPENDIX C: LETTER TO PRINCIPAL

You are being invited to participate in a research study about the perceptions of public school teachers and principals in regards to teacher efficacy (a teacher's belief in their ability to achieve a desired effect). This study is being conducted by Jack Parker as part of a doctoral dissertation with Dr. Todd Whitaker serving as the faculty sponsor from the department of Educational Leadership at Indiana State University.

We are requesting a few minutes of your time to complete a short online survey that will provide valuable data for this research. For principals, we are additionally requesting that you forward this to your teaching staff in order to provide them with the opportunity to complete a similar survey online.

We believe that teacher efficacy is as important as ever in these changing times. It strongly affects a teacher's motivation and has been associated with student motivation, teacher adaptation to innovation, teacher evaluation ratings, classroom management, amount of time spent on subjects, and teacher referrals to special education. The information that you provide will be used to determine the perceptions of teacher efficacy among teachers in elementary, middle and high schools along with the efficacy beliefs of teachers with varying levels of experience.

This survey is anonymous and contains no risk to you should you choose to participate in this research study. Even though this is an anonymous survey, absolute anonymity cannot be guaranteed over the internet. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. Individuals from the Institutional Review Board may inspect these records. Should the data be published, no individual information will be disclosed. Also, there are no costs to you for your participation.

PRINCIPALS, please follow this link to participate in the study: _____

TEACHERS, please follow this link to participate in the study: _____

By completing the survey, you are voluntarily agreeing to participate in this study. You are free to decline to answer any particular question for any reason.

If you have any questions about the study, please contact Jack Parker at 5635 W. Stones Crossing Rd., Greenwood, IN 46143, (317) 882-9391 or jack-parker@comcast.net. You may also contact Dr. Todd Whitaker at Indiana State University, UH 317B, Terre Haute, IN 47809, (812) 237-2904 or Todd.Whitaker@indstate.edu.

If you have any questions about your rights as a research subject or if you feel you've been placed at risk, you may contact the Indiana State University Institutional Review Board (IRB) by mail at Indiana State University, office of Sponsored Programs, Terre Haute, IN 47809, by phone at (812) 237-8217, or by email at irb@indstate.edu.

Thank you very much for your help.

Principal Investigator
Jack Parker

Faculty Supervisor
Dr. Todd Whitaker

APPENDIX D: FOLLOW UP LETTER TO PRINCIPAL

Recently I sent you an email inviting you to participate in a study about the perceptions of public school teachers and principals in regards to teacher efficacy (a teacher's belief in their ability to achieve a desired effect). If you have completed the survey, thank you very much for your valuable responses.

If you have not had the opportunity to complete the survey, you can do so today through the appropriate URL below. This study is being conducted by Jack Parker as part of a doctoral dissertation with Dr. Todd Whitaker serving as the faculty sponsor from the department of Educational Leadership at Indiana State University.

We are requesting a few minutes of your time to complete a short online survey that will provide valuable data for this research. For principals, we are additionally requesting that you forward this to your teaching staff in order to provide them with the opportunity to complete a similar survey online.

We believe that teacher efficacy is as important as ever in these changing times. It strongly affects a teacher's motivation and has been associated with student motivation, teacher adaptation to innovation, teacher evaluation ratings, classroom management, amount of time spent on subjects, and teacher referrals to special education. The information that you provide will be used to determine the perceptions of teacher efficacy among teachers in elementary, middle and high schools along with the efficacy beliefs of teachers with varying levels of experience.

This survey is anonymous and contains no risk to you should you choose to participate in this research study. Even though this is an anonymous survey, absolute anonymity cannot be guaranteed over the internet. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. Individuals from the Institutional Review Board may inspect these records. Should the data be published, no individual information will be disclosed. Also, there are no costs to you for your participation.

PRINCIPALS' link: _____ TEACHERS' link: _____

By completing the survey, you are voluntarily agreeing to participate in this study. You are free to decline to answer any particular question for any reason.

If you have any questions about the study, please contact Jack Parker at 5635 W. Stones Crossing Rd., Greenwood, IN 46143, (317) 882-9391 or jack-parker@comcast.net. You may also contact Dr. Todd Whitaker at Indiana State University, UH 317B, Terre Haute, IN 47809, (812) 237-2904 or Todd.Whitaker@indstate.edu.

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Principal Investigator
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