

**Effect of Teacher Certification:
An Examination of the Use of Teaching Practices in Private Middle School
Classrooms**

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Abstract

Quality teaching is thought to be one of the most essential factors leading to student achievement. The required level of training of a public-school classroom teacher to be an effective instructional leader, by most states, is shown through the acquisition of a teaching certification. This certification is often earned through many hours of university classes, field work, and a professional examination (Abell Foundation). In the private school sector, the requirement for teacher certification is decided on a school-by-school basis; some private schools require their teachers to be state certified while other schools do not (Ballou and Podgursky; Darling-Hammond).

The purpose of this quantitative study was to determine private middle school teachers' use of Marzano, Pickering, and Pollock's (2002) nine instructional methods in their classrooms. The second purpose was to determine if certification status and years of experience affected teachers' use of Marzano et al.'s nine instructional methods. Private middle school teachers from Kansas and Missouri were asked to answer an 11-statement survey. Quantitative analysis was used to determine the results of the 21 respondents. The results of the hypothesis testing indicated that there was no difference between certified and non-certified teachers' use of Marzano et al.'s nine instructional strategies. There was also no difference found between years of teaching experience and the use of Marzano et al.'s nine instructional methods. It could not be concluded, however, that there was a correlation between years of teaching experience and certification status and the use of Marzano et al.'s nine instructional strategies due to an insufficient sample size. Further research is recommended to increase the middle school teacher sample size and expand the grade levels to elementary and high school teachers.

Dedication

First and foremost, I would like to thank my husband, Jaron. You believed in me long before I believed in myself. You believed in my dream so much that you were willing to sell your wedding ring to pay the application fee to Baker University. You have been patient and have never given up on me. I love you.

To my children, Jace and Gillian. Mom started this degree when you were just small and now you are old enough to understand what all the work means. While I made this journey for me, I wanted to show you that anything is possible through cancer, through depression, through tears, but mostly through love. Follow your heart and the rest will follow. I love you both so much.

For my Ninnie, Gertrude Williams, who may have lived a tough life in the hollers of West Virginia but always loved me without prejudice until the day she died. As a very young undergrad student, I had a very quiet dream in your very small living room to someday be “Doctor”. This is it, Ninnie! I did it! I know you would be proud.

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Chapter 1

Introduction

The journey to become a public-school teacher in the United States for most, but not all, includes coursework in educational methods and best practices. Public school teachers must be certified by their state to teach in the classroom. Part of the certification requirement often involves receiving a passing score on a standardized test (Abell Foundation, 2001). This test assesses knowledge of teaching practices which means somewhere along their journey to become an educator, public school teachers are instructed in the best teaching practices. This practice is not always true for private school teachers. Private school teachers are not always required to have a state-issued teaching certificate. Often, private school teachers qualify for their position by having a degree in the subject they teach (Quirke, 2009). Some private school teachers may have never taken an education class at the university level. This may mean these classroom teachers have never been directly instructed in research-based teaching practices for the classroom.

Background

The popularity of private schools in Kansas and Missouri is growing because of the pandemic, according to a major news outlet in the Kansas City area (Aguilar, 2021). According to a KCTV 5 news story in 2021, many parents did not have faith in the public school system after the 2020 school year. The Aguilar news story also included a report that smaller class sizes were an appealing factor for parents enrolling students in private schools in the Kansas City area during the 2020 school year. A CNBC news story by Dickler published in 2021 reported 41% of parents were more likely to prefer a private

education for their children post-pandemic. Before the pandemic, private school enrollment was on the decline. According to the CNBC story reported by Dickler (2021), approximately 50.8 million students attended public schools and 5.8 million attended private schools around the United States in 2021. In Missouri, for the 2022 school year, there were 642 private schools and in Kansas there were 225 private schools, according to the Private School Review (2022). The National Association of Independent Schools (NAIS) is a “nonprofit membership association that provides services such as research and trend analysis, leadership and governance guidance, and professional development” to private schools nationwide (NAIS, 2022). According to the NAIS (para. 1, 2022), 629 member schools across the nation served a total of 696,122 students; in Missouri, 38 private schools and 8 were NIAS members in Kansas. All these schools need teachers, either certified or non-certified.

In some private schools in Canada studied by Linda Quirke (2009), “Principals place little emphasis on professional hiring criteria such as credentials” (p. 625). In private schools just as in public schools, emphasis is placed on being flexible in the classroom and in the school community. Teachers are often asked to coach a sport, sponsor a club, direct a play, and attend school functions to be seen as both teachers and active leaders in the school community.

Not only are teachers active leaders outside of the classroom, but they are academic leaders inside the classroom. Steward, Rhoads, Seridouk, Van Dine, Cherasaro, & Klute (2019), in a study about the association between the qualifications of middle school Algebra I teachers and student achievement, reported students performed worse on math and science standardized tests when the teachers were not certified in their

subject compared to teachers who held a standard certification in their subject area. However, yet another study did not report positive links between teachers' certification levels and student achievement in math (Steward et al., 2019). Results of the research into the relationship between teacher effectiveness and certification have been mixed. In the final analysis, there are few definitive studies that reported a link between teacher certification and student achievement.

Statement of the Problem

According to Lunenburg and Irby (2008), "The statement of the problem is a definition of what you investigated in your study" (p. 114). Research has been conducted to discover the general nature of effective teaching methods (Beishuizen, Hof, & Putten, 2001; Berk, 2005; Marzano, Pickering, & Pollock, 2001; Simon & Dahl, 2012) but scarce research exists exploring the effective nature of private middle school instruction and differences based on certification status of teachers. In contrast, studies have also been conducted investigating the implementation of specific instructional models simultaneously in public and private schools (DiLeo, 2011; Hooks, 2001), but very little research has been conducted specifically geared toward instructional methods based on an examination of similarities and differences of teacher certification.

Marzano et al.'s nine instructional strategies have been utilized in the educational world since 2001. They have been used in classrooms around the country and students who were instructed with these nine instructional strategies have been tested for two decades. While Marzano et al.'s (2001) research revealed an in-depth explanation of these strategies in the book, *Classroom Instruction that Works*, the authors acknowledged

that they still do not know whether some instructional strategies were more effective in certain subject areas and at various grade levels.

Since the teachers are often not required to hold a degree in education or a state teaching certificate, it is unknown whether private school teachers utilize best teaching strategies such as Marzano et al.'s (2001) nine research-based instructional strategies in their classrooms. While Marzano et al.'s instructional strategies are not the only instructional strategy used in classrooms, they have been in use for over twenty years and have been found to be effective strategies. It has been difficult to determine the degree to which private middle school teachers use research-based instructional methods, as this topic has not been researched extensively. The success of students in a crucial transition time such as middle school is important for their future success. The use of research-based instructional strategies may or may not increase with years of teaching experience or certification status.

Purpose of the Study

“The purpose of any study is to help solve the stated problem,” according to Lunenberg and Irby (2008, p. 116). The purpose of this quantitative study was to add to the research on effective core subject (Math, English Language Arts, Social Studies, and Science) instruction by determining to what degree teachers in private middle school grades utilize the nine instructional strategies suggested by Marzano et al. (2001). Four research questions were created to help determine the degree to which middle school teachers use Marzano et al.'s nine instructional strategies. Effective classroom instruction is often the starting point for improving student learning at any level in any subject.

This study involved the use of a survey with a Likert-type scale to measure teachers' perceptions of their use of the instructional strategies proposed by Marzano et al. The survey was administered electronically. A broad range of private school instructors with different levels of teaching experience and certification types within a middle school setting were sought to complete the survey.

Significance of the Study

The significance of the study, according to Lunenberg and Irby (2008), is an “argument that the study makes a significant contribution to the field” (p. 117). Marzano et al. (2001) noted more research could be done in observing if the proposed effective teaching methods work better in specific content areas and with specific grade levels. This study contributes to the current body of research conducted by Marzano et al. by identifying to what degree teachers in private schools use research-based teaching methods. This study also explores to what extent there is a correlation between state certification and the use of research-based teaching practices in private schools based on years of teaching experience.

This information may be used by school leadership to create professional development to give teachers targeted pedagogical methods that can improve classroom instruction. The data may also improve hiring practices and policy making concerning teacher preparedness in private schools. Additionally, information may also cause teachers to pause to reflect on what instructional strategies are being employed in the classroom. Marzano et al.'s nine instructional strategies may, among other strategies from John Hattie or Linda Darling-Hammond, provide methods to improve student learning.

Delimitations

According to Lunenburg and Irby (2008), “Delimitations are self-imposed boundaries set by the researcher on the purpose and scope of the study” (p. 134). The delimitations utilized in this study narrowed the focus of the study by specifying the geographical location of the people being asked survey questions, and only looking at the private middle school grade levels. The delimitations are as follows:

1. The study took place in private, independent schools in urban and suburban settings in Kansas and Missouri.
2. Data from teachers instructing middle grades were surveyed in this study.
3. The surveys were conducted electronically during the 2022-2023 academic year.
4. Marzano et al.’s nine research-based teaching strategies in the classroom were examined as a basis for survey items.
5. Only questions about instructional techniques and not classroom management or overall curriculum design were asked in the survey.

Assumptions

According to Lunenburg and Irby (2008), "Assumptions are postulates, premises, and propositions that are accepted as operational for purposes of the research” (p. 135). The present study was based on the following assumptions:

1. All participants understood the survey items and gave honest answers.
2. Teachers were employees of private schools.
3. All data entered were accurately recorded.

Research Questions

Lunenburg and Irby (2008) described the research questions as a “directional beam for the study” (p. 126). The research questions “identify questions that have not been addressed previously or remain unanswered in the literature” (Lunenburg and Irby, 2008, p. 126).

RQ1. To what degree do private middle school teachers use Marzano et al.’s nine instructional strategies?

RQ2. To what degree is there a difference between certified and non-certified private middle school teachers in their use of Marzano et al.’s nine instructional strategies?

RQ3. To what degree is there a difference in private middle school teachers’ use of Marzano et al.’s nine instructional strategies in instructional practices based on their years of teaching experience?

RQ4. To what degree is the difference in private middle school teachers’ use of Marzano et al.’s nine instructional strategies in instructional practices between private middle school certified and non-certified private middle school teachers affected by the years of teaching experience?

Definition of Terms

Terms that are specific to a particular study should be defined to aid the reader in fully understanding the topic. The following are important terms the reader should know:

Advanced organizers. According to Haystead (2009), the use of advanced organizers “Involves providing students with a preview of new content” (p. 9).

Cooperative learning. Zook (2018) explained cooperative learning is the “Process of breaking a classroom of students into small groups so they can discover a new concept together and help each other learn” (para. 1).

Effort and recognition. Haystead (2009) stated effort and recognition “Involves reinforcing and tracking student determination and providing appreciation for achievement” (p. 9).

Feedback. Haystead (2009) defined feedback as “providing a student with information relative to how well they are doing regarding a specific assignment” (p. 9).

Generating and Testing Hypotheses. Marzano et al. (2001) defined generating and testing hypotheses with students as “the process of guiding students to use deductive or inductive thinking to predict a future action in a lesson and describing the thinking that led to the prediction” (pp. 106-107).

Graphic organizers. Haystead (2009) stated using graphic organizers with students “Involves providing a visual display of something being discussed or considered, e.g., using a Venn diagram to compare two items” (p. 9).

Homework. Haystead (2009) defined homework as “Providing students with opportunities to increase their understanding through assignments completed outside of class” (p. 9).

Identifying similarities and differences. Haystead (2009) stated identifying similarities and differences “Involves the identification of similarities and/or differences between two or more items being considered” (p. 9).

Independent school. According to the author Ali Trachta (2022), a private or independent educational institution is one that “is run by a board of governors or trustees

that is independent of any other school entities,” such as a religious organization. Each independent school is administered by a unique mission and philosophy set by the board of governors or trustees.

Parochial school. According to the Merriam Webster (n.d.) it is a “private school maintained by a religious body usually for elementary and secondary instruction”.

Nonlinguistic representations. The use of nonlinguistic representations with students, according to Haystead (2009), “involves providing a representation of knowledge without words, e.g., a graphic representation or a physical model” (p. 9).

Note taking. Haystead (2009) explained note taking “involves recording information that is considered to be important” (p. 9).

Practice. Haystead (2009) defined practice for students as a method that “involves massed and distributed practice on a specific skill, strategy, or process” (p. 9).

Private school. According to the Macmillan dictionary (n.d.), a private school is an educational institution “that is established, conducted, and primarily supported by a nongovernmental agency”.

Public school. According to the Macmillan dictionary (n.d.), a public school “is a school paid for from state and local taxes and provides free education to local children between the ages of five to eighteen”.

Setting goals/objectives. According to Haystead (2009), setting goals and objectives “involves identifying a learning goal or objective regarding a topic being discussed in class” (p. 9).

Teaching certificate/credential/license. A teaching credential is “a license conferred by a state agency to teachers who have completed certain state-mandated

requirements, such as education courses and student teaching experience and have passed additional state mandated teaching examinations” (“All Education Schools”, n.d.).

Organization of the Study

This study has been divided into five chapters. Chapter 1 included an introduction, background, a statement of the problem, the purpose of the study, the significance of the study, delimitations, assumptions, research questions, a definition of important terms, and the organization of the study. Chapter 2 is a review of the literature which includes information on the differences between public and private education in general, teaching certification, the importance of the transition of students into middle school, and teacher efficacy in private schools. Chapter 3 includes the research design, selection of participants, the measurement, data collection procedures, data analysis and hypothesis testing, limitations, and summary. Chapter 4 consists of the results of the analyses, description of statistics, and hypothesis testing results. Finally, Chapter 5 consists of an overview of the problem, purpose statement and research questions, a review of the methodology, major findings, findings related to the literature, implications for action, recommendations for future research, and concluding remarks.

Chapter 2

Review of the Literature

For decades, the qualifying standard of a public-school teacher has been determined by acquiring a state teaching certification. To teach in a public school nationwide, an educator must be certified through the state department of education. This endorsement can be a traditional certification or any number of alternate certification methods that vary by state. Conversely, private school teachers can instruct students without having a state teaching certificate. Most teachers do hold at least an undergraduate degree in the field in which they teach but are not required to have taken any university-level courses in education methodology or pedagogy. The efficacy of a teacher may not just be measured by a certificate but rather by their use of effective teaching methods that may or may not have been explicitly taught to them in a school of education.

Effective teachers can be vitally important in the middle grades where monumental changes both academically and emotionally take place. Students make the all-important transition from elementary school to middle school and then the transition to high school. Teachers who are passionate and skilled educators, whether certified or not, can be the catalyst of success for students in middle school and beyond.

Private and Public-School Contrasts and Comparisons

There is a perception among some in the United States that a private school education is superior to one in the public-school sector. Parents select to have their children in private schools for various reasons with some believing “that private schools are safer and provide better social and intellectual training” (Donnelly, 2021, p. 3). The

effectiveness of instruction is often noted as a primary reason by parents for choosing a private over public school, but other reasons include safety, discipline, and the school environment. According to an article by Ornstein (1990), private schools were historically smaller than public schools. Ornstein (1990) stated, “Private schools, on average, tend to be smaller than public schools” which allows for smaller class sizes and decreased student-to-teacher ratio (p. 210). Students and teachers can develop a closer educational relationship in the smaller classrooms and that draws many parents to enroll their child in a private school. In 2022, according to the website Private School Review, the national average private school student enrollment was 183 students. The state with the largest average private school student enrollment was Louisiana with 325 students and the smallest student enrollment average in private schools was Wyoming at 72 students (privateschoolreview.com, 2022).

According to the National Association of Independent Schools (2016) which has approximately 1,276 member schools, the median class size for grades six through eight was 15 students. In the results from the 2017-2018 National Teacher and Principal survey, class sizes in public and private schools were very similar in the middle grades. In public schools, middle grade class sizes averaged 16.6 students and in private schools, middle grade class size was 17.8 (Taie & Goldring, 2020). Small class sizes can have a positive impact on student learning because teachers can focus on the learning needs of individual students. Parents identify academic emphasis as one of the most significant reasons for enrolling their child in a private school and is why parents are willing to pay tuition and provide the extra time and transportation that accompanies private school enrollment (Johnson, 1996).

Private schools could have more flexibility because private schools are often free of governmental regulations such as state testing requirements. Private schools also have higher rates of parental involvement. According to a study conducted by Noel, Stark, and Redford (2013) for the U.S. Department of Education, 95% of private school parents attended a PTO or PTA meeting at the school as compared to 86% of public-school parents. The numbers become more disparate in the percentages of parents who have participated in school fundraising according to the Noel et al. (2013) study. Fifty-six percent of public-school parents have participated in school fundraising compared to 77% of private school parents. The same survey also found 91% of private school parents attended a school or class event and 66% volunteered or served on a school committee whereas the percentages for the same activities in public school were 73% and 38% respectively (Noel et al., 2013).

A Lubienski and Lubienski study of National Assessment of Educational Progress data from 2008 study defined “the private school effect” (p. 3), as a belief that private school students outperform their public-school counterparts, doesn’t exist. Private school students do not outscore public school students in mathematics when demographic differences are accounted for in the raw data. Mathematics scores were looked at because Lubienski and Lubienski (2006) noted “math is more heavily influenced by school rather than home experiences, so studying math achievement provides clearer insights into the relative performance of different types of schools” (p. 2). Public schools outscored private, non-parochial schools in 8th grade math by 2 points after controlling demographics and location (Lubienski & Lubienski, 2006).

When Duncan and Sandy (2007) reviewed The Armed Forces Qualifications Test, the results reflected private school students on average scored 12 points higher than public school students but when controls for family background and school quality measures were averaged, the advantage diminished by seven points making the advantage lose statistical significance. The findings of this study suggested “students who attend private schools possess more of the characteristics associated with high test scores” (p. 177). Duncan and Sandy (2007) reported adjusting controls for family background and school quality measures, the private school advantage in the National Longitudinal Survey of Youth respondents diminished to a mere statistical difference. Before adjustments were taken, according to the Duncan and Sandy study (2007), private school students, on average, scored 12 points higher on the Armed Forces Qualifications Test (AFQT) than public school students. According to Duncan & Sandy (2007), the difference of five points on the test between public and private school students can be “explained by differences in family background while only three points are due to differences in school characteristics” (p. 189). Parents who sent their children to private school tended to invest more time and resources in the development of their children’s educational future. This time investment may account for the five-point statistical difference on the AFQT which was larger than the three-point statistical difference given for students attending either a public or private school.

The Duncan & Sandy (2007) study touched on another reason parents chose to send their children to a private school: an alignment with home and school values in an environment of greater safety and discipline. Just as the parents of private school students were more educated, they were also willing to provide “time, tuition, and

transportation for their child's education more often than demographically similar parents do" (Duncan & Sandy, 2007, p. 181). Private schools often serve more advantaged students and parents who understand the characteristics associated with school success because it is modeled in the home environment. The United States Department of Education's statistics on parent and family involvement in education, have revealed in 2011-2012, 61% of private school parents expected their child to obtain a professional or graduate degree. The perception by some is a private-school curriculum is more rigorous than the public-school curriculum and students who attend a private school will be more prepared for college. In a study done for a dissertation by Carolyn Johnson (1996), "parents believe effectiveness of instruction to be the most important factor in the selection of a private school for their child" (p. 119). It is an ever-present option parents can leave a private school if the student's needs, academically, environmentally, and morally, are not being met.

Some parents perceive public schools as an unsafe environment. In a study done by Davis (2011), the author stated "parents cited safe, caring, loving, and nurturing as factors in the school's environment that aided in their decisions to choose a private education" (p. 75). According to O'Brian and Pianta (2010), private schools were often thought to create a strong student community which may explain why private school students were also more attached to their schools. In a quantitative study done by Lauder milk (1994), parents were asked why they chose to send their child to a private school. Many participants described "a small close community as making them feel safe and protected" (p. 76). Some parents chose to enroll their child in a private school because of lack of physical violence or the threat of physical violence in the public

school. One of the parents interviewed by Lauder milk said she felt her daughter's "educational process had been impaired by the kind of harassment and fear that she was going through" (p. 78) in the public-school system. Parents said they believed their children could reach their academic potential in an environment that is protected. Some parents in the Lauder milk study noted they chose a private school because of the greater degree of harmony found in the small school environment. More recently, DeAngelis and Lueken (2019) collected data from 618 public, private, and charter school leaders in Indiana to examine the relationship between private schools and the presence of school safety practices. The study found "private schools and public charter schools are less likely to use school safety practices that restrict students than traditional public schools" (DeAngelis & Lueken, 2019, p. 29). Also, DeAngelis and Lueken's (2019) data indicated

private school leaders are also more likely than traditional public-school leaders to report 'never' having problems such as physical conflicts among students, theft, vandalism, students possessing weapons, student physically abusing teachers, racial tensions, students verbally abusing teachers, widespread disorder in classrooms, disrespect for teachers by students, and gang activity. (pp. 29-30)

DeAngelis and Lueken offered a few possible explanations as to why private school leaders report never having problems in their schools. Families choose private schools based on safety, culture, and mission, so there is a competitive advantage to keeping students safe. Also, private schools have more freedom to set discipline policies and may be more efficient at employing those policies. Finally, according to DeAngelis and Lueken (2019), "private schools may have a systemic advantage at creating a strong

school culture” (p. 26). With small classes and a clear emphasis on community building, private schools may have an advantage intentionally creating strong school cultures.

Some parents choose private schools over public schools for religious reasons. The number of students in U.S. parochial schools in 2015-2016 was over 3 million (National Center for Educational Statistics [NCES], 2016). This number has fluctuated in the past few decades. In the 1960s, there were more than five million students in Catholic schools in the United States alone, while in 2020-2021 there were approximately 1.6 million (Crary, 2021). For the 2020-2021 school year, enrollment in Catholic schools dropped by 6.4% and caused the closure of over 200 schools across the nation (Crary, 2021). Many of these closures happened in urban communities where private schools served a community of non-Catholic, Black students. Private schools were more vulnerable to closure because they did not have the safety net of state and federal funding. When parents could no longer afford private school tuition, as was the case with the many Catholic schools, closures occurred. Closures can also occur if parents are unsatisfied with the quality of education their child receives or the environment of the school. Public schools rely on professionally trained teachers to provide credibility and legitimacy, while private schools offer an alternative environment for students.

Certification

Private school teachers often lack the state certification required of public-school teachers. By not accepting federal funding, private schools can hire outside of the certified teacher pool. Ballou and Podgursky (1998) stated private schools “enjoy greater flexibility in structuring pay, provide more effective support for new teachers, and find it easier to dismiss teachers for poor performance and to restructure staff on the basis of

changing instructional needs” (p. 414). According to results from the 2017-2018 National Teacher and Principal Survey, full-time private school teachers’ average base salary was approximately \$12,600 less than their public-school counterparts. The average class size for teachers in a self-contained public-school classroom was 20.9 compared to the private school teacher’s 16.7 self-contained class size. According to a descriptive study conducted by Carolyn Johnson (1996), smaller class sizes can help teachers connect with students, meet parent expectations of a safer school community because students will be known by teachers, and can make sure educational needs are met in the classroom. O’Brian and Pianta (2010) examined classroom processes and characteristics in public and private schools and noted “teachers in public schools were more likely to use reform-oriented mathematics teaching practices” (p. 412) that had been taught as part of a teacher preparation program but “smaller classes were more common in private schools” (p. 412). These characteristics, found in both public and private schools, with smaller class sizes and reform-oriented mathematics teaching practices, help student achievement at all levels.

There are no state certification requirements for private school teachers in the United States. In Kansas, private schools must register with the Kansas Board of Education, but the wording given by the United States Department of Education simply states teachers must be noted “competent instructors” (U.S. Department of Education, 2009). Missouri’s laws do not state that private school teachers must be competent. Ballou and Podgursky (1998) noted in a study comparing teacher recruitment and retention in public and private schools “Secondary school teachers in the private sector are more likely than their public-school counterparts to hold an undergraduate degree in

an academic subject, as opposed to education” (p. 395). This is a point of contention in literature as many studies make the point that teacher certification is correlated with higher student achievement. Higher student achievement because of the certification status of teachers may not always be the case and overly complicated certification requirements may keep qualified instructors from the classroom. Ballou and Podgursky (1998) also pointed out that some “evidence shows that teachers with stronger cognitive skills and superior knowledge of their subjects are, on average, more effective in the classroom” (p. 395). In a study by Goldhaber and Brewer (2000), the research showed students in mathematics and science who were taught by “teachers with emergency credentials do no worse than students of teachers with standard teaching credentials” (p. 141).

Teacher certification is the formal approval to teach in a public-school classroom that requires the completion of many hours of prescribed education coursework which can also include content coursework for secondary teachers, student teaching experience, and a passing grade on a teaching exam (often the Praxis) before entering a classroom as a teacher. Teacher certification is key in some studies related to student achievement. Alexander and Fuller (2004) found in Texas, “students who have had certified teachers had greater gains on the TAAS mathematics exam than students having non-certified teachers, after controlling for several variables” (p. 12). Darling-Hammond, Berry, and Thoreson (2001) denoted to an earlier study by Goldhaber and Brewer (2000) that reported emergency teaching credentials made no difference in student achievement, finding there was a “strong positive relationship between student achievement and full certification” (p. 31). Teachers can also have an optional, even higher level of

certification by being certified by the National Board for Professional Teaching Standards which goes above and beyond state certification standards. Belson and Husted (2015) described the National Board certification as having a positive impact on student outcomes in math and reading scores on the National Assessment for Educational Progress.

Smaller class sizes are a positive selling point for many private schools and appeal to parents who want a lower student-to-teacher ratio for a more personalized learning environment. Darling-Hammond (1999) asserted while smaller class sizes do appear to contribute to student learning, the size of a class does not matter if there is not a qualified or certified teacher in charge who knows how to use the technology, textbooks, curriculum content or how to diagnose student learning needs. Darling-Hammond further stated “among variables assessing teacher ‘quality’, the percentage of teachers with full certification and a major in the field is a more powerful predictor of student achievement than teachers’ education levels (e.g., master’s degrees)” (p. 38).

One of the most frequently reported reasons parents choose to send their child to private schools is a belief in the high quality of instruction. According to a study done by Johnson, (1996) “it is clearly evident from the results (of the research study) that the factor of effectiveness of instruction is, for the majority of parents, the most important factor in selecting a private school for their child” (p. 119). The research does not always show teacher certification equates to higher student achievement. A study conducted by Steward et al. (2019), “did not find positive links between teacher certification levels and student achievement in math, after student and school characteristics as well as other teacher qualifications were accounted for” (p. 12). Perhaps the biggest indicator of the

student success found by the Steward et al. study was a teacher's passing score of 137 or above on the Praxis II Mathematics Content Knowledge exam followed by years of teaching experience. A teacher who is competent in their content area and passionate about teaching is valued highly in the private and public-school setting. The head of a private school will look at a teaching candidate's transcripts but may place more value on the in-class lesson taught as part of an application process.

Instead of relying on professional certification to validate the quality of teachers, private school principals often take an idiosyncratic and instinctual look at the qualifications of new teacher hires. This could be a challenge for less skilled heads of private schools who may be less proficient in processing good teaching instincts. A study done by Linda Quirke (2009) looked at a group of private schools in Ontario, Canada, that opted not to hire certified teachers. In interviews done with 45 private school principals, Quirke summarized "Principals overwhelmingly sought those (teachers) with a philosophical stance or passion for teaching" (p. 625) with some heads of private schools negatively perceiving certified teachers as "too rigid, demanding, too bureaucratic, inflexible, 'burnt out', miserable, with a 'union' mentality" (p. 625). Private school principals hire teachers for their own school and know the culture and needs of the school community intimately. The Abell Foundation (2001) compiled a report outlining recommendations and research attempting to convince the Maryland Department of Education to modify teacher certification standards. In this document, the authors noted "a principal's judgement may be fallible, but it is certainly no more fallible" than the requirements of state certification (p. viii). There is a general sense among principals in the Quirke (2009) article that "teaching was an innate talent rather

than something that could be fostered through formal training” (p. 625). Sometimes candidate teachers would teach a lesson for a class in the subject being applied for while being observed by the head of school. In this way, the head of school or principal could gain a sense of how the teacher may perform in the classroom setting. The Abell Foundation (2001) stated “teachers with higher verbal ability produce greater achievement gains in students” (p. 8). Verbal ability may be somewhat pliable in nature and could be improved through college and beyond thus making more effective teachers (Abell Foundation, 2001). Strong professional development, formal and informal, may help make private school teachers who are not certified just as effective as certified teachers.

The fact that teachers are not certified in private schools is not necessarily an impediment to their success as teachers. According to Quirke (2009), private schools as well as public schools embrace non-professional traits in their teachers such as “teaching philosophy, passion, caring for students, devotion to teaching, and flexibility” (p. 626) that cannot be measured by a state certification. Devotion to teaching and flexibility are traits very much needed to teach in the middle grades as this is a time of much change in students intellectually, physically, and emotionally.

Importance of Middle School Education

Middle school students present a unique set of challenges educationally and developmentally. Schools need to be systematic in planning the transition between elementary and high school to minimize achievement loss, declining motivation, and organizational challenges presented in middle school. Coelho, Marchante, and Jimerson (2017) reported self-esteem, emotional self-concept, and physical self-concept are

negatively impacted by the transition into the middle grades. A study conducted by Alspaugh (1998) compared three groups of 16 school districts to explore achievement loss associated with school-to-school transitions. The author concluded students who transitioned into a middle school that funneled in multiple elementary schools experienced greater achievement loss than those students transitioning from a single elementary school to a single middle school.

The transition into the middle school setting often leads to a decrease in standardized test scores. Alspaugh & Harting published a study in 1995 of five Missouri school districts using the Missouri Mastery and Achievement Tests focusing on elementary and middle school achievement. Fifteen of the sixteen transition-year school comparisons showed achievement loss. This led the authors to conclude “whenever there is a change in grade-level organization of the school, it is reasonable to expect a loss in achievement the following year” (p. 148). Many additional factors such as a decline in student self-efficacy and motivation weigh into the difficulty of the transition from elementary to middle school (LaPlante, 2010). Minimizing this achievement loss in the transition between elementary and middle school could help students be more confident in their middle school classroom learning and achieve higher levels of success in high school. Students transitioning into middle school are often placed into an environment of increased academic competition, independence on a new level, and an entirely new social paradigm that may be different from any educational experience to date. These significant environmental changes can affect the motivation and emotional function of middle school students over time. If a student has a poor sense of academic competence, the outcome may lead to poor academic performance. In a study done by Roeser, Eccles,

and Sameroff (1998) data showed “aspects of a school environment that supported adolescents’ need for competence in an encouraging, noncomparative manner were associated with positive changes in motivation over time and positive achievement at the end of eighth grade” (p. 334).

Middle schoolers present as a unique group with their own challenges just as high school and elementary students. In an early study done, Kling (1985) stated, “They are, therefore, equally deserving of a unique system of education” (p. 335). Private schools, by the nature of their flexibility and curricular freedom, are designed to meet the challenges of middle school students in the classroom. Smaller class sizes with lower student-to-teacher ratio help middle school students adjust to rotating classrooms and the intense developmental changes by helping establish relationships that guide students into high school. In a study done by Roeser et al. (1998), “aspects of a school environment that supported adolescents’ need for competence in an encouraging, noncompetitive manner were associated with positive changes in motivation over time and positive achievement at the end of eighth grade” (p. 334).

Students in middle school experience a myriad of changes both physically and mentally. In an article exploring the minds of middle schoolers, Daniels (2005) shared those students in the middle grades are in the process of transitioning from the egocentrism of elementary school to a more group-centered way of thinking; they feel as if they are the only person experiencing stress or facing the drama in the hallways, but they still crave the acceptance of their friend group. An environment fraught with higher expectations, social pressures, and hormonal changes can leave a middle schooler feeling all alone. Daniels (2005), as part of her dissertation focusing on student motivation in

middle school, discovered of middle school students that “developing and sustaining new and long-term friendships are crucial activities” as well as becoming part of a group while forging an independent place in the world are all important milestones transitioning middle schoolers face and can sometimes make them feel “crowded” (p. 54).

Given the changes within a middle schooler’s social environment, through wanting more freedom and changing to a group-centered mindset, it is not surprising that students may want more decision-making power in the classroom but received less because of greater academic expectations (Daniels, 2015). As compared to elementary school, Feldlaufer, Midgley, & Eccles (1988) found middle school students may be more aware of their performance as compared to others in their peer group and may see their middle grade teachers as “less caring, warm, friendly, and supportive” (p. 151) than their elementary teachers. Middle grade students want to know their teacher will support them in a world of high expectations using such techniques as Feldlaufer et al. (1998) who stated, “multiple assessments to identify specific learning needs, providing support and scaffolding on the basis of those needs, and allowing students to select multiple paths to the same outcome” (p. 153) can support students.

Forging the teacher-to-student relationships middle graders need to help them navigate the larger world can be difficult to do for middle school teachers. Regardless of the type of school, middle school teachers usually see students only one period a day and teach many more students than elementary classroom teachers. Developing relationships with teachers is a positive predictor of student achievement. In a study conducted by Wentzel (2002), dimensions of teaching that correspond to effective parenting like fairness, teacher motivation, rule setting, negative feedback, and high expectations were

correlated as part of a questionnaire given to sixth grade students. Wetzel (2002) concluded having “high expectations for students was the most consistent positive predictor of students’ goals and interest, and negative feedback was the most consistent negative predictor of academic performance and social behavior” (p. 299). Student interest in academic activities may also be motivated by, as Wetzel (2002) stated “Teacher characteristics that reflect social as well as curricular and instructional approaches to learning affirms the motivational significance of teacher-student relationships in the lives of young adolescents” (p. 297). The more positive and constructive feedback middle grade students can receive from multiple sources like teachers, parents, and peers, the better the overall outcome of the student. The constructive feedback and high expectations that Wetzel concluded can help student achievement can be present in teachers who are and are not certified.

In a study done by Atkinson (2010) where private school students were asked about their transition into the middle school grades, the author found the students were more academically motivated than they were in elementary school. Atkinson stated in his results, “They liked middle school classes better, put forth more effort, enjoyed academic challenges more, and were more concerned about getting their homework answers right” (p. 122). The private school students in the study answered they found the transition into middle school to be easy or somewhat easy, and they felt an overall sense of connectedness, which may have been because the students found that their needs were being met in a caring and supportive environment. The safe and caring environment many private schools strive to cultivate may innately help students make the important transition from elementary into middle school successfully. The most important

relationship for middle grade students may be the classroom teacher. In an article by Mawhinney and Sagan (2007) about the power of personal relationships between student and teacher, the authors quoted Robert and Jana Marzano who claimed “the quality of teacher-student relationships is the keystone for all other aspects of classroom management” (p. 461). To promote high student achievement and promote self-confidence in students, the teacher must strike a balance in their instruction, finding the right amount of challenge at a given time and differentiating instruction to meet the needs of all students in a classroom.

Teaching core subjects at the middle school level includes the introduction of increasingly broad topics that encourage students to think critically about their maturing mind. The middle grade years are a learning bridge for students between the concrete learning conducted in elementary school and the higher order thinking of high school. Instruction should reflect the learning needs of all students. Teaching middle school students also offers a unique set of challenges to instructors as they help students with a critical transition to, for some, a new building, a body that physically is starting to go through many changes, the growing importance of the peer social group, and moving to different rooms with different teachers.

Teacher Efficacy in Private School

An efficacious teacher follows a near universal set of effective teaching practices whether they teach in a public or private school. Goe, Bell, and Little (2008) synthesized a five-point definition of effective teachers. Effective traits include having high expectations for all students and helping students learn, “using diverse resources to plan and structure engaging learning opportunities” (p. 5), monitoring student progress,

adapting instruction as assessments deem necessary, and “evaluate learning using multiple sources of evidence” (p. 8). Private schools have greater autonomy regarding curriculum and hiring which may be viewed as a benefit. A study by Lubienski, Lubienski, and Crane (2008), however, provided “evidence that teacher certification and some reform-orientated instructional practices both correlate positively with achievement and are more prevalent in public schools than in their demographically similar private counterparts” (p. 132). While this may seem counter to teacher efficacy in private schools, according to Duke, Cervetti, and Wise (2016), the ability for teachers to “express high positive expectations for students” and offering “more choice and control in the classroom” as well as modeling self-regulation, enthusiasm, and kindness toward others may be greater in the small classrooms of private schools (p. 37).

In an article by McShane (2018) exploring if private school educators need a different set of skills than public school educators to be successful, it was noted the skills public and private school teachers need to be successful in the classroom overlap. All teachers need to have stellar organization and planning skills, have an ability to listen and be a team player, have amazing communication skills, and have patience and flexibility. Many, but not all, private schools are parochial and in addition to teaching subject content, teachers are also asked to take on some role in the faith formation of students (McShane, 2018). As a result of the unique semi-consumer driven environment of a private school, teachers need to be, as McShane (2018) explained, somewhat “entrepreneurial, to understand school budgets, to have good public relation skills, and to have the ability to teach multiple subjects” (p. 9). Private schools in urban areas tend to be smaller than public schools. Teachers are often asked to perform many duties outside

of the classroom from helping to sell concessions on game days to serve as part-time administrators. Private schools, according to Lubienski et al. (2008), “were more effective than public schools at boosting student achievement, even after socioeconomic differences were considered” (p. 694). The same Lubienski et al. (2008) study uncovered in research that the presence of certified teachers in the classroom boosted student achievement. Since many private school teachers do not need to be certified, Lubienski’s findings are contradictory.

One of the requirements for earning a traditional teaching certification in any state is to have graduated from an accredited university education program. To earn a bachelor’s degree in education, a student may take classes in education theory, child development, contemporary issues in education, assessment of students, curriculum development, as well as hours of student teaching experience, and for a secondary level pre-service teacher, content area classes as well as student teaching experience (Bascuas, 2020). Part of what pre-service teachers might learn is explicit teaching or direct instruction. Rosenshine (1987) stated this is “a systemic method of teaching with emphasis on proceeding in small steps, checking for student understanding, and achieving active and successful participation by all students” (p. 34). Instruction using this technique could take a great deal of guided and independent practice in the college classroom and in the field under the guidance of a certified classroom teacher. Rice (2003) further explained five broad categories organize characteristics reflecting teacher quality include:

- teacher experience measured in terms of number of years as a teacher;

- teacher preparation programs and degrees including graduation from an education program;
- teacher certification where teachers have fulfilled requirements for state certification;
- specific coursework taken by teachers in preparation for the profession; and
- teachers' own test scores that indicate teacher knowledge, proficiency, or level of literacy. (pp. 11-12)

What is learned in a university about being an effective classroom teacher and what teachers themselves say about being an effective teacher differ. Walls, Narsi, Minden, & Hoffman (2002) asked 90 teachers in different stages of teaching (prospective teachers, novice teachers who had just finished student teaching, and experienced teachers) in 2002 what constituted an effective and ineffective teacher. When teachers were asked to describe what constituted an effective teacher, descriptions like creating an emotional environment where students were cared for were often noted. Teacher motivation also often appeared, meaning teachers were enthusiastic about their profession. Being burned out or just going through the motions were seen as ineffective in the classroom. In a mixed study done by Moran (2005), middle school teachers were asked to share what qualities they thought made a good classroom teacher. Descriptions such as “an inherent and visible love of students and the content they taught” and “relationship building with students” were thought to make an effective teacher while “lack of passion” and becoming a teacher because of the “ease of the job” (p. 85) were thought to be ineffective qualities of a teacher.

Effective Teaching

A question remains of how to measure a teacher's efficacy, especially if they are not certified by a state department of education. A way of possibly measuring the efficacy of a teacher may be to determine if they utilize any and to what extent they utilize the nine instructional strategies written by Marzano et al.(2001) in the book *Classroom Instruction that Works*. These instructional strategies include:

- identifying similarities and differences;
- summarizing and note taking;
- reinforcing effort and providing recognition;
- homework and practice;
- nonlinguistic representations;
- cooperative learning;
- setting objectives and providing feedback;
- generating and testing hypotheses; and
- cues, questions, and advance organizers.

Not all nine instructional strategies work equally well in every situation, but identifying similarities and differences led to a percentile gain of 45 in a meta-analysis of several students (Marzano et al., 2001). Not all students saw gains that were explained by the researchers. In another meta-analysis conducted by Haystead (2009), 329 independent studies were analyzed for student learning with use of the nine instructional strategies, “the independent studies represent a gain of 16 percentile points over what would be expected if teachers did not use the instructional strategies” (p. 5).

In a study conducted by Musmar (2019) in the United Arab Emirates (UAE) to assess the importance of Marzano's instructional strategies on achievement in reading comprehension, the results indicated "that using Marzano's instructional strategies in reading comprehension instruction yields higher students' achievement...than students in traditional strategies for grade 10 students in UAE" (p. 222). The United Arab Emirates is "very eager to try and endorse any innovative invitations that might contribute to enhance students' learning outcomes and the whole education system in the country in general" (p. 326), according to a study conducted by Almekhlafi, Ismail, and Hassan (2020). Marzano's instructional learning strategies are a large part of this enhancement of student learning in the UAE. A large study was done by Almekhlafi et al. (2020) with 512 teachers in K-12 schools in the United Arab Emirates asking about their use and implementation of Marzano's Nine Instructional Strategies. The results of the study uncovered teachers were aware of Marzano's strategies and perceptions were positive towards the use of the strategies in classrooms. Also, "their reported use of these strategies in their classes was high" (p. 335), according to Almekhlafi et al. (2020). The recommendation by the authors indicated the educators should obtain support and hands-on training with Marzano's Nine Strategies that could lead to greater use on a large scale throughout educational institutions, both public and private, throughout the UAE.

The Saudi Arabian university system has also looked at Marzano's instructional strategies to improve student thinking skills, in particular creative thinking skills. Azizah Rowais (2019) noted the level of creative thinking skills of students at Saudi Universities was low. Rowais conducted a study to identify if Marzano's dimensions of learning model in developing creative thinking skills was effective for first year students at

university. The model Rowais used was developed by Marzano and a comprehensive team of educators who evaluated educational research. The model was “based on constructive philosophy which makes both the teacher and the learner active” (Rowais 2019, p. 50). The model that Rowais (2019) used for the study included five dimensions of thinking as listed below:

- Dimension 1 is positive attitudes and perceptions about learning.
- Dimension 2 is acquisition and integration of knowledge.
- Dimension 3 is extension and refinement of knowledge.
- Dimension 4 is meaningful use of knowledge.
- Dimension 5 is productive habits of mind (p. 50).

These creative learning dimensions are taught to students using what Rowais called “the steps of teaching model” (p. 53). These teaching model steps closely correspond with Marzano’s nine instructional methods. The author (Rowais, 2019) defined Marzano’s nine instructional methods in illustration of the importance of the model in “regulating and arranging knowledge as well as the skills which help integrate, refine, and use knowledge meaningfully” (p. 53).

Rowais (2019) divided 50 students into two groups, a control group of 25 who were taught traditionally and a second group of 25 who studied the same unit the control group studied but utilizing Marzano’s dimensions of learning model. Both groups were given a pre- and post-test for creative skills. The teaching strategies used in the study, according to the Marzano model, focused on a positive learner by providing students with opportunities to complete, correct, and discuss solutions. Rowais (2019) discovered “teaching the course using the model helped students think unconventionally and find

different solutions to the problems they face” (p. 59). The research uncovered statistically significant differences between the two groups with the experimental group showing greater excellence in creative thinking. The recommendation from Rowais’ study called for “developing university courses according to Marzano’s dimensions of learning model” (p. 59).

Marzano’s ideas on effective instruction are not the only theories available for teachers. Robert E. Slavin (1995) presented a model of effective instruction called QAIT (Quality, Appropriateness, Incentive, Time). Slavin (1995) explained “each of the elements of the QAIT model is like a link in a chain” (p. 2) and must work together for the instruction to be effective. Quality of instruction “refers to the activities we think of first when we think of teaching: lecturing, discussing, and calling on students” (Slavin, 1995, p. 3).

A qualitative study conducted by Yildirim (2021) in which the author scrutinized the methods of effective teachers, found effective teachers used methods that “allowed for the active participation of students” (p. 90). John Hattie (2008) further defined the qualities of an effective teacher. An effective teacher, Hattie (2008) described as an expert teacher, guiding learning through classroom interaction by providing an “optimal classroom climate for learning” (p. 3), providing feedback that is relevant and useful, and influences student outcomes by “providing appropriate challenging tasks and goals for students” (p. 9). The qualities put forth by Yildirim and Hattie align with the quality of instruction proposed by Slavin.

The appropriateness of the tasks and goals Slavin (1995) explained in his model of effective instruction refers to appropriate levels of instruction for students. Teachers

need to “accommodate instruction to the needs of students with different levels of prior knowledge and different learning rates” (p. 4). Slavin approached this accommodation by using group learning. Both Marzano and Hattie’s thoughts on effective instructional strategies aligned in a summary paper of the two educational theorists by Killian (2022), who stated getting students to work together is an effective instructional strategy that not only adds value to whole class instruction but also to individual work.

Incentive is the next quality in Slavin’s (1995) effective instructional methods; “If students want to know something, they will be more likely to exert the necessary effort to learn it” (p. 5). Teachers need to present topics in an interesting way according to Slavin. Teachers may be able to do this, according to Hattie (2003), by being passionate about teaching, learning, and proficiently creating an optimal classroom climate for learning where topics are accessible for students.

Finally, Slavin (1995) stated “instruction takes time” but admitted “research on engaged time generally finds positive relationships between time students are on task and their achievement, but even with these variables results are inconsistent” (p. 6). Hattie classified an expert teacher as being better “decision-makers and can identify what decisions are important and which are less important decisions” (p. 6). These expert instructional educators are skilled in keeping a lesson on track while accomplishing their objectives. Robert Marzano and John Hattie differ on some of their methods and terminology surrounding effective instructional strategies, but they do align in eight crucial instructional strategies according to a summary by Killian (2022) who stated “a clear focus for the lesson, offer overt instruction, get the students to engage with the

content, give feedback, multiple exposures, have students apply their knowledge, get students working together, and build students' self-efficacy" (pp. 1-5).

Summary

Quality teaching is thought to be one of the most essential factors leading to student achievement. The required level of training of a public-school classroom teacher to be an effective instructional leader, by most states, is shown through the acquisition of a teaching certification. This certification is often earned through many hours of university classes, field work, and a professional examination. In the private school sector, the requirement for teacher certification is done on a school-by-school basis; some private schools require their teachers to be state certified while other schools do not.

The success of teachers in private schools is of special importance in the middle grades when students are making significant life transitions. Alspaugh (1998) concluded in his study the "middle grades can be viewed as the last best chance to identify students at risk of academic failure and get them back on track in time for them to succeed in high school" (p. 24). Chapter 3 is a detailed description of the methods used in this study.

Chapter 3

Methods

This study was designed to investigate whether private school teachers in middle school grades use Marzano et al.'s nine instructional methods during classroom instruction and if holding a current teaching certificate or years of teaching experience or both affect the use of these instructional methods. The four purposes of this study were to discover to what degree private middle school teachers use effective teaching strategies in their classroom based on differences in certification and non-certification, years of teaching experience, and a correlation between years of experience and certification status. This chapter includes a description of the research design, the selection of participants, a description of the measurement used, data collection procedures, the data analysis and hypothesis testing, and the limitations of the study.

Research Design

In a quantitative study, according to Creswell (2014), "Investigators use quantitative research questions and hypotheses, and sometimes objectives to shape and specifically focus the purpose of the study" (p. 143). A survey design was used which provided, as Creswell (2014) explained, "a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population" (p. 155). A survey was specified to determine the use of research-based teaching practices, specifically Marzano et al.'s (2001) nine instructional strategies, in private middle school classroom, the certification status of teachers, and their years of teaching experience. The teachers were surveyed using a Likert-type scale to determine the frequency with which Marzano et al.'s nine instructional strategies are used in classroom instruction. The dependent variable in the study was the extent of the use of each of Marzano's nine

instructional strategies. Independent variables were certification status (yes or no) and the number of years of teaching experience (1-10 years or 11 or more years).

Selection of Participants

At the time of the study, the surveyed teachers were private middle school teachers in Kansas and Missouri. Participants were a purposeful sampling of current teachers in private schools in Kansas and Missouri. The private schools were independent in nature. The sampled teachers were instructors in grades 6 through 8.

Measurement

The researcher developed the survey used in this study. The survey was created by adapting Marzano et al.'s (2001) nine instructional strategies, as found in *Classroom Instruction That Works*. The survey items were written using language from Marzano's nine instructional strategies. An example of each one of the nine effective teaching strategies was folded into each question to act as dependent variables in the study.

A Likert-type scale with five labels was used to measure respondents' reported frequency of use of Marzano et al.'s nine strategies in their lesson planning: 1=*almost never*, 2=*rarely*, 3=*occasionally*, 4=*a moderate amount*, 5=*a great deal*. The alignment of the survey questions, hypotheses, and items used to measure the strategies is presented in Table 1. Two survey items were created to measure the independent variables: holding a teaching certificate and the number of years teaching. Two scale labels were given for holding a current or teaching certificate: *yes*, *no*. Three scale labels were given for years of teaching experience: 1 = 1-5 years, 2 = 6-10 years, 3 = 11 or more years.

The survey was sent to the Assistant Superintendent of Curriculum and Instruction for the Paola, KS school district, for their review of the validity of the

measurement. The survey was also sent to a 15-year researcher fellow at the Marzano Research group to gain his insights. The research fellow and the researcher met via Zoom and communicated via email to discuss the survey at length.

Table 1

Alignment of Survey Items and Hypotheses

Survey Item	Hypothesis
I identify similarities and differences with students in my classroom.	H1, H10, H19, H28
I ask students to summarize material presented in class by encouraging students to take notes in class either teacher formatted, or student formatted.	H2, H11, H20, H29
I reinforce effort and provide recognition for students.	H3, H12, H21, H30
I assign homework that keeps parental involvement to a minimum and is purposeful and articulated as such to students while providing meaningful feedback on the homework assigned.	H4, H13, H22, H31
I utilize nonlinguistic representation of knowledge such as graphic organizers, concept patterns, cause-effect patterns, or models.	H5, H14, H23, H32
I incorporate meaningful cooperative group work with varied group sizes and student group make up.	H6, H15, H24, H33
I set objectives and provide feedback for students.	H7, H16, H25, H34
I ask students to generate and test hypotheses.	H8, H17, H25, H34
I use cues, questions, and advanced organizers with students.	H9, H18, H27, H36
I hold a current teaching certificate.	H10-18, H28-36
Years of teaching experience.	H28-36

Data Collection Procedures

The data collection focused on surveys of teachers in private middle school classrooms to determine whether the nine instructional strategies are utilized, given that many private school teachers are not required to have a state teaching credential. More

specifically, the data collection involved the examination of the use of the nine instructional strategies outlined in the Marzano et al.'s. (2001) book *Classroom Instruction That Works* as indicator markers of effective classroom instruction as well as the number of years the instructor had been teaching and if that person held a state teaching certificate.

Before data collection, a proposal to conduct research was submitted to the Baker Institutional Review Board (IRB) on October 10, 2022. The IRB granted permission to conduct the research study on November 10, 2022. The researcher then emailed individual teachers (see Appendix B) at private middle schools in Kansas and Missouri. The email indicated participation in the survey was voluntary, and participants could skip items or stop the survey at any time (see Appendix B). Anonymity for the participants was assured. A link to the Google form that contained the survey was also included in the email as was the researcher's contact information as well as the major advisor's contact information. The survey was closed on January 21, 2023, and the data was downloaded to an Excel spreadsheet.

Data Analysis and Hypothesis Testing

Each research question and the corresponding nine hypotheses used to address each research question is below. The statistical analyses specifying how each of the nine hypotheses was tested is also below. There are four research questions and 36 hypotheses.

RQ1. To what degree do private middle school teachers use Marzano et al.'s nine instructional strategies?

H1. Private middle school teachers utilize the instructional strategy of identifying similarities and differences.

H2. Private middle school teachers utilize the instructional strategy of summarizing and note taking.

H3. Private middle school teachers utilize the instructional strategy of reinforcing effort and providing recognition.

H4. Private middle school teachers utilize the instructional strategy of homework practice.

H5. Private middle school teachers utilize the instructional strategy of engaging nonlinguistic representations.

H6. Private middle school teachers utilize the instructional strategy of organizing students into cooperative learning groups.

H7. Private middle school teachers utilize the instructional strategy of setting learning objectives and providing feedback for students.

H8. Private middle school teachers utilize the instructional strategy of engaging students to generate and test hypotheses.

H9. Private middle school teachers utilize the instructional strategy of using cues, questions, and advance organizers to enhance student learning.

Nine one-sample t tests were conducted to address RQ1. The sample mean was compared to a test value of 3. The one-sample t test was chosen for the hypothesis testing because it involves the comparison of one group mean with a known value, and the group mean calculated from a numerical variable. The level of significance was set at .05.

RQ2. To what degree is there a difference between certified teachers and non-certified mid-level grade private school teachers in their use of Marzano et al.'s nine instructional strategies?

H10. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of identifying similarities and differences.

H11. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of summarizing and note taking.

H12. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of reinforcing effort and providing recognition.

H13. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of utilizing homework practice.

H14. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of engaging nonlinguistic representation.

H15. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of organizing students into cooperative learning groups.

H16. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of setting learning objectives and providing feedback for students.

H17. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of engaging students to generate and test hypotheses.

H18. There is a difference between certified and non-certified private middle school teachers in their use of utilization of the instructional strategy of cues, questions, and advance organizers.

Nine two-factor analyses of variance (ANOVAs) were conducted to address RQ2-RQ4. The two categorical variables used to group the dependent variable, Marzano et al.'s instructional strategies, were certification status (certified, non-certified) and years of teaching experience (1-5 years, 6-10 years, 11 or more years). The results of the two-factor ANOVA can be used to test for differences in the means for a numerical variable among three or more groups, including a main effect for certification status, a main effect for years of teaching experience, and a two-way interaction effect (certification status x years of teaching experience). The main effect for certification status was used to test H10-H18. The level of significance was set at .05. When appropriate, an effect size, as indexed by eta squared, is reported.

RQ3. To what degree is there a difference in private middle school teachers' use of Marzano et al.'s nine instructional strategies based on their years of teaching experience?

H19. There is a difference in private middle school teachers' utilization of the instructional strategy of the identification of similarities and differences based on their years of teaching experience.

H20. There is a difference in private middle school teachers' utilization of the instructional strategy of summarizing and note taking based on their years of teaching experience.

H21. There is a difference in private middle school teachers' utilization of the instruction strategy of reinforcement of effort and offering of recognition based on their years of teaching experience.

H22. There is a difference in private middle school teachers' utilization of the instructional strategy of homework practice based on their years of teaching experience.

H23. There is a difference in private middle school teachers' utilization of the instructional strategy of engaging students in nonlinguistic representations based on their years of teaching experience.

H24. There is a difference in private middle school teachers' utilization of the instructional strategy of organizing students into cooperative learning groups based on their years of teaching experience.

H25. There is a difference in private middle school teachers' utilization of the instructional strategy of setting learning objectives and offering feedback based on their years of teaching experience.

H26. There is a difference in private middle school teachers' utilization of the instructional strategy of engaging students to generate and test hypotheses based on their years of teaching experience.

H27. There is a difference in private middle school teachers' utilization of the instructional strategy of cues, questions, and advance organizers to enhance student learning, based on their years of teaching experience.

The main effect for experience from each of the two-factor ANOVAs was used to test H19-H27. The level of significance was set at .05. When appropriate, an effect size, as indexed by eta squared, is reported.

The main effect for years of teaching experience from each of the nine ANOVAs specified above was used to test H19-H27. The level of significance was set at .05. When appropriate, an effect size, as indexed by eta squared, is reported.

RQ 4. To what extent is the difference between certified and non-certified private middle school teachers' use of Marzano et. al.'s nine instructional strategies affected by the years of teaching experience?

H28. The difference between certified and non-certified private middle school teachers' utilization of the instructional strategy of similarities and difference is affected by their years of teaching experience.

H29. The difference between certified and non-certified private middle school teachers' utilization of the instruction strategy of summarizing and note taking is affected by their years of teaching experience.

H30. The difference between certified and non-certified private middle school teachers' utilization of the instructional strategy of reinforcement of effort and offering of recognition is affected by their years of teaching experience.

H31. The difference between certified and non-certified private middle school teachers' utilization of the instructional strategy of homework practice is affected by their years of teaching experience.

H32. The difference between certified and non-certified private middle school teachers' utilization of the instructional strategy of engaging students in nonlinguistic representations affected by their years of teaching experience.

H33. The difference between certified and non-certified private middle school teachers' utilization of the instructional strategy of organizing students into cooperative learning groups affected by their years of teaching experience.

H34. The difference between certified and non-certified private middle school teachers' utilization of the instructional strategy of learning objectives and providing feedback affected by their years of teaching experience.

H35. The difference between certified and non-certified private middle school teachers' utilization of the instructional strategy of engaging students to generate and test hypotheses affected by their years of teaching experience.

H36. The difference between certified and non-certified private middle school teachers' utilization of the instructional strategy of cues, questions, and advance organizers is affected by their years of teaching experience.

The interaction effect from each of the two-factor ANOVAs was used to test H28-H36. The level of significance was set at .05. When appropriate, an effect size, as indexed by eta squared, is reported.

Limitations

Lunenburg & Irby (2008) stated “limitations of a study are not under the control of the researcher, [but] may have an effect on the interpretation of the findings or on the generalizability of the results” (p. 133). One limitation may have been that all teachers who took the survey may not have understood all the concepts and may not have accurately reported their frequency of use of the nine instructional strategies. A further limitation may have been that the participation was voluntary. As a result, the responses may not represent the use of the nine instructional strategies by survey non-participants.

Summary

This chapter stated the study’s four purposes was to determine how often private middle school teachers utilized Marzano et al.’s nine instructional strategies in their classroom based on differences in certification and non-certification, years of teaching experience, and a correlation between years of experience and certification status. A quantitative research design was used for this study. Participants of the study taught in private middle schools in Kansas and Missouri. The researcher developed a survey to assess the variables in the four questions. A Google form was used to collect the responses to the survey items. In Chapter 4, the researcher will explain the descriptive statistics and the results of the hypothesis testing.

Chapter 4

Results

This study was designed to investigate whether Marzano et al.'s nine instructional methods were utilized by non-certified teachers in private middle schools. Certification of teachers as well as the years having taught were the independent variables in the study. Another independent variable in the study was the use of Marzano's nine instructional methods. The four purposes of this study were achieved by examining the data collected in a survey sent to teachers of core subjects (English Language Arts, Social Studies, Math, Foreign Language, and Science) asking about the use of the nine instructional methods in their classrooms. This chapter reports the results of the analysis that addressed the four research questions by testing the four research questions and the thirty-six hypotheses.

Descriptive Statistics

There were 200 surveys sent to private schools in Kansas and Missouri and 21 completed and returned. The small number of returned surveys made it necessary to choose an alternative hypothesis testing method, the independent-samples *t* test, to address RQ2 and RQ3. To conduct the *t* test for RQ3, the variable, experience, was collapsed from three categories (1-5 years, 6-10 years, and 11+ more years) to two categories (1-10 years and 11+ years). Those analyses are explained below for each RQ and the results of the hypothesis tests for RQ1 and RQ3 are presented below in the Hypothesis Testing section. A test to address RQ4 could not be conducted because two

of the cells contained fewer than five observations. Table 2 contains a cross-tabulation of certification status by years of teaching experience.

Table 2

Cross-Tabulation of Certification Status by Years of Teaching Experience

Certification status	Teaching experience (years)		
	1-10	11+	Total
Not certified	4	6	10
Certified	3	8	11
Total	7	14	21

Hypothesis Testing

The results of the hypotheses testing address the four research questions presented in this study and are discussed in this section. The question is the method used to test hypotheses related to that question. Next, the corresponding hypotheses statements are listed, along with the results of each test. The significance level of .05 was utilized for all statistical analyses.

RQ1. To what degree do private middle school teachers use Marzano et al.'s nine instructional strategies?

Nine one-sample t tests were conducted to address RQ1. For each test, the sample mean was compared to a test value of 3. The one-sample t test was chosen for the hypothesis testing because it involves the comparison of one group mean with a known value, and the group mean is calculated from a numerical variable. The level of

significance was set at .05. When appropriate, the effect size, as indexed by Cohen's d , is reported.

H1. Private middle school teachers utilize the instructional strategy of identifying similarities and differences.

The results of the one sample t test indicated a statistically significant difference between the group mean and the test value, $t(20) = 4.932$, $p = .000$, Cohen's $d = 1.076$. The sample mean ($M = 4.05$, $SD = 0.97$) was significantly higher than the test value (3). H1 was supported. Private middle school teachers utilize the instructional strategy of identifying similarities and differences a moderate amount. The effect size indicated a large effect.

H2. Private middle school teachers utilize the instructional strategy of summarizing and note taking.

The results of the one sample t test indicated a statistically significant difference between the group mean and the test value, $t(20) = 4.298$, $p = .000$, Cohen's $d = 0.938$. The sample mean ($M = 4.05$, $SD = 1.12$) was significantly higher than the test value (3). H2 was supported. Private middle school teachers utilize the instructional strategy of summarizing and note taking a moderate amount. The effect size indicated a large effect.

H3. Private middle school teachers utilize the instructional strategy of reinforcing effort and providing recognition.

The results of the one sample t test indicated a statistically significant difference between the group mean and the test value, $t(20) = 11.245$, $p = .000$, Cohen's $d = 2.454$. The sample mean ($M = 4.48$, $SD = 0.60$) was significantly higher than the test value (3). H3 was supported. Private middle school teachers utilize the instructional strategy of

reinforcing effort and providing recognition between a moderate amount and a great deal. The effect size indicated a large effect.

H4. Private middle school teachers utilize the instructional strategy of homework practice.

The results of the one sample t test indicated a statistically significant difference between the group mean and the test value, $t(20) = 4.394$, $p = .000$, Cohen's $d = 0.944$. The sample mean ($M = 3.90$, $SD = .94$) was significantly higher than the test value (3). H4 was supported. Private middle school teachers utilize the instructional strategy of homework practice a moderate amount. The effect size indicated a large effect.

H5. Private middle school teachers utilize the instructional strategy of engaging nonlinguistic representations.

The results of the one sample t test indicated there was not a statistically significant difference between the group mean and the test value, $t(20) = 1.826$, $p = .083$. The sample mean ($M = 3.43$, $SD = 1.08$) was not significantly different than the test value (3). H5 was not supported. Private middle school teachers utilize the instructional strategy of engaging nonlinguistic representations sometimes/occasionally.

H6. Private middle school teachers utilize the instructional strategy of organizing students into cooperative learning groups.

The results of the one sample t test indicated a statistically significant difference between the group mean and the test value, $t(20) = 2.970$, $p = .004$, Cohen's $d = 1.102$. The sample mean ($M = 3.71$, $SD = 1.10$) was significantly higher than the test value (3). H6 was supported. Private middle school teachers utilize the instructional strategy of

organizing students into cooperative learning groups a moderate amount. The effect size indicated a large effect.

H7. Private middle school teachers utilize the instructional strategy of setting learning objectives and providing feedback for students.

The results of the one sample t test indicated a statistically significant difference between the group mean and the test value, $t(20) = 4.076$, $p = .000$, Cohen's $d = 0.964$. The sample mean ($M = 3.86$, $SD = .96$) was significantly higher than the test value (3). H2 was supported. Private middle school teachers utilize the instructional strategy of setting learning objectives and provide feedback for students a moderate amount. The effect size indicated a large effect.

H8. Private middle school teachers utilize the instructional strategy of engaging students to generate and test hypotheses.

The results of the one sample t test indicated there was not a statistically significant difference between the group mean and the test value, $t(20) = -1.321$, $p = 0.202$. The sample mean ($M = 2.62$, $SD = 1.32$) was not significantly different than the test value (3). H8 was not supported. Private middle school teachers utilize the instructional strategy of engaging students to generate and test hypotheses sometimes/occasionally or a moderate amount.

H9. Private middle school teachers utilize the instructional strategy of using cues, questions, and advance organizers to enhance student learning.

The results of the one sample t test indicated a statistically significant difference between the group mean and the test value, $t(20) = 4.394$, $p = .000$, Cohen's $d = 0.944$. The sample mean ($M = 3.90$, $SD = .94$) was significantly higher than the test value (3).

H9 was supported. Private middle school teachers utilize the instructional strategy of using cues, questions, and advance organizers to enhance student learning a moderate amount.

RQ2. To what degree is there a difference between certified and non-certified private middle school teachers in their use of Marzano et al.'s nine instructional strategies?

Nine independent-samples *t* tests were conducted to address RQ2. The two-sample means were compared. An independent-samples *t* test was chosen for the hypothesis testing because the hypothesis test involves the examination of the mean difference between two mutually exclusive independent groups, and the means are calculated using data for numerical variables. The level of significance was set at .05. When appropriate, an effect size is reported.

H10. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of identifying similarities and differences.

The results of the independent samples *t* test indicated there was not a statistically significant difference between the two means, $t(19) = -0.675, p = .508$. The sample mean for certified teachers ($M = 3.91, SD = 1.22, n = 11$) was not different from the sample mean for non-certified teachers ($M = 4.20, SD = 0.63, n = 10$). H10 was not supported. There is not a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of identifying similarities and differences.

H11. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of summarizing and note taking.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = 0.967, p = .346$. The sample mean for certified teachers ($M = 4.27, SD = 0.90, n = 11$) was not different from the sample mean for non-certified teachers ($M = 3.80, SD = 1.32, n = 10$). H11 was not supported. There is not a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of summarizing and note taking.

H12. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of reinforcing effort and providing recognition.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = 0.544, p = .593$. The sample mean for certified teachers ($M = 4.55, SD = 0.52, n = 11$) was not different from the sample mean for non-certified teachers ($M = 4.40, SD = 0.70, n = 10$). H12 was not supported. There is not a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of reinforcing effort and providing recognition.

H13. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of utilizing homework practice.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = -0.900, p = .380$. The sample mean for certified teachers ($M = 3.73, SD = 1.01, n = 11$) was not different from the sample mean for non-certified teachers ($M = 4.10, SD = 0.88, n = 10$). H13 was not supported. There is not a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of utilizing homework practice.

H14. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of engaging nonlinguistic representation.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = -0.283, p = .780$. The sample mean for certified teachers ($M = 3.36, SD = 1.21, n = 11$) was not different from the sample for non-certified teachers ($M = 3.50, SD = 0.97, n = 10$). H14 was not supported. There is not a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of engaging nonlinguistic representation.

H15. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of organizing students into cooperative learning groups.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = 1.721, p = .101$. The sample mean for certified teachers ($M = 4.09, SD = 0.94, n = 11$) was not different from the sample mean for non-certified teachers ($M = 3.30, SD = 1.16, n = 10$). H15 was not supported. There is not a difference between certified and non-certified private middle school teachers in

their utilization of the instructional strategy of organizing students into cooperative learning groups.

H16. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of setting learning objectives and providing feedback for students.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = 0.253, p = .803$. The sample mean for certified teachers ($M = 3.91, SD = 1.04, n = 11$) was not different from the sample for non-certified teachers ($M = 3.80, SD = 1.16, n = 10$). H16 was not supported. There is not a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of setting learning objectives and providing feedback for students.

H17. There is a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of engaging students to generate and test hypotheses.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = 0.385, p = .705$. The sample mean for certified teachers ($M = 2.73, SD = 1.04, n = 11$) was not different from the sample mean for non-certified teachers ($M = 2.50, SD = 1.18, n = 10$). H17 was not supported. There is not a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of engaging students to generate and test hypotheses.

H18. There is a difference between certified and non-certified private middle school teachers in their use of utilization of the instructional strategy of cues, questions, and advance organizers.

The results of the independent samples *t* test indicated there was not a statistically significant difference between the two means, $t(19) = 0.476, p = .640$. The sample mean for certified teachers ($M = 4.00, SD = 1.10, n = 11$) was not different from the sample mean non-certified teachers ($M = 3.80, SD = 0.79, n = 10$). H18 was not supported. There is not a difference between certified and non-certified private middle school teachers in their utilization of the instructional strategy of cues, questions, and advance organizers.

RQ3. To what degree is there a difference in private middle school teachers' use of Marzano et al.'s nine instructional strategies based on their years of teaching experience?

Eight independent-samples *t* tests were conducted to address RQ3. The two-sample means were compared. An independent-samples *t* test was chosen for the hypothesis testing because the hypothesis test involves the examination of the mean difference between two mutually exclusive independent groups, and the means are calculated using data for numerical variables. The level of significance was set at .05. When appropriate, an effect size is reported.

H19. There is a difference in private middle school teachers' utilization of the instructional strategy of the identification of similarities and differences based on their years of teaching experience.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = 1.652, p = .115$. The sample mean for certified teachers ($M = 4.286, SD = 0.951, n = 7$) was not different from the sample mean for non-certified teachers ($M = 3.929, SD = 1.207, n = 14$). H19 was not supported. There is not a difference in private middle school teachers' utilization of the instructional strategy of the identification of similarities and differences based on their years of teaching experience.

H20. There is a difference in private middle school teachers' utilization of the instructional strategy of summarizing and note taking based on their years of teaching experience.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = 0.681, p = .504$. The sample mean for certified teachers ($M = 4.286, SD = 0.756, n = 7$) was not different from the sample mean for non-certified teachers ($M = 4.571, SD = 0.514, n = 14$). H20 was not supported. There is not a difference in private middle school teachers' utilization of the instructional strategy of summarizing and note taking based on their years of teaching experience.

H21. There is a difference in private middle school teachers' utilization of the instruction strategy of reinforcement of effort and offering of recognition based on their years of teaching experience.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = 1.027, p = .317$. The sample mean for certified teachers ($M = 4.143, SD = 0.690, n = 7$) was not different from the sample mean for non-certified teachers ($M = 4.379, SD = 1.051, n = 14$). H21 was not supported.

There is not a difference in private middle school teachers' utilization of the instructional strategy of reinforcement of effort and offering of recognition based on their years of teaching experience.

H22. There is a difference in private middle school teachers' utilization of the instructional strategy of homework practice based on their years of teaching experience.

The results of the independent samples *t* test indicated there was not a statistically significant difference between the two means, $t(19) = 0.811, p = .428$. The sample mean for certified teachers ($M = 3.429, SD = 1.284, n = 7$) was not different from the sample mean for non-certified teachers ($M = 3.4286, SD = 1.28388, n = 14$). H22 was not supported. There is not a difference in private middle school teachers' utilization of the instructional strategy of homework practice based on their years of teaching experience.

H23. There is a difference in private middle school teachers' utilization of the instructional strategy of engaging students in nonlinguistic representations based on their years of experience.

The results of the independent samples *t* test indicated there was not a statistically significant difference between the two means, $t(19) = 0.000, p = 1.000$. The sample mean for certified teachers ($M = 3.571, SD = 1.134, n = 7$) was not different from the sample mean for non-certified teachers ($M = 3.786, SD = 1.122, n = 14$). H23 was not supported. There is not a difference in private middle school teachers' utilization of the instructional strategy of engaging students in nonlinguistic representations based on their years of teaching experience.

H24. There is a difference in private middle school teachers' utilization of the instructional strategy of organizing students into cooperative learning groups based on their years of teaching experience.

The results of the independent samples *t* test indicated there was not a statistically significant difference between the two means, $t(19) = -0.411$, $p = .685$. The sample mean for certified teachers ($M = 3.571$, $SD = 0.535$, $n = 7$) was not different from the sample mean for non-certified teachers ($M = 3.7857$, $SD = 1.12171$, $n = 14$). H24 was not supported. There is not a difference in private middle school teachers' utilization of the instructional strategy of organizing students into cooperative learning groups based on their years of teaching experience.

H25. There is a difference in private middle school teachers' utilization of the instructional strategy of setting learning objectives and offering feedback based on their years of teaching experience.

The results of the independent samples *t* test indicated there was not a statistically significant difference between the two means, $t(19) = -0.939$, $p = .350$. The sample mean for certified teachers ($M = 3.571$, $SD = 0.535$, $n = 7$) was not different from the sample mean for non-certified teachers ($M = 4.000$, $SD = 1.109$, $n = 14$). H25 was not supported. There is not a difference in private middle school teachers' utilization of the instructional strategy of setting learning objectives and offering feedback based on their years of teaching experience.

H26. There is a difference in private middle school teachers' utilization of the instructional strategy of engaging students to generate and test hypotheses based on their years of teaching experience.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = -0.458, p = .652$. The sample mean for certified teachers ($M = 2.429, SD = 1.13, n = 7$) was not different from the sample mean for non-certified teachers ($M = 2.7143, SD = 1.43734, n = 14$). H26 was not supported. There is not a difference in private middle school teachers' utilization of the instructional strategy of engaging students to generate and test hypotheses based on their years of teaching experience.

H27. There is a difference in private middle school teachers' utilization of the instructional strategy of cues, questions, and advance organizers to enhance student learning based on their years of teaching experience.

The results of the independent samples t test indicated there was not a statistically significant difference between the two means, $t(19) = .320, p = .753$. The sample mean for certified teachers ($M = 4.000, SD = 0.57735, n = 7$) was not different from the sample mean for non-certified teachers ($M = 3.8571, SD = 1.09945, n = 14$). H27 was not supported. There is not a difference in private middle school teachers' utilization of the instructional strategy of cues, questions, and advance organizers to enhance student learning based on their years of teaching experience.

Summary

Chapter 4 included the descriptive statistics and results of the hypothesis testing for this study. Private middle school teachers responded overall in using Marzano et al.'s nine instructional strategies in their classrooms, regardless of certification status. RQ4 was unable to be addressed due to the small response size. Chapter 5 contains a study summary, findings related to the literature, and conclusions.

Chapter 5

Interpretation and Recommendations

The research for this study focused on the degree to which private middle school teachers used Marzano et al.'s nine instructional strategies in their classrooms, if there was a difference between the use of instructional strategies of certified and non-certified teachers, if there was a difference in the use of instructional strategies and years of teaching experience, and if there was a correlation between the use of instructional strategies and certification status and years of teaching experience. A survey was sent to approximately 200 private middle school teachers. This chapter contains an overview of the problem, purpose statement and research questions, a review of the methodology, major findings, findings related to the literature, implications for action and recommendations for future research.

Study Summary

In the following subsections, the researcher summarizes the current study. This section includes an overview of the problem as well as a purpose statement and research questions. This section concludes with a summary of the methodology and the study's major findings.

Overview of the problem. The research for this study focused on whether certified or non-certified private middle school teachers utilized Marzano et al.'s nine instructional strategies in their classroom instruction. Years of teaching experience and the use of Marzano et al.'s nine instructional strategies were also a focus of research. Additionally, a correlation between years of teaching experience, certification status, and the use of Marzano et al.'s nine instructional strategies were also questioned, but there

was not enough data to conclusively answer RQ4. Much research has been conducted to determine effective teaching methods and the implementation of instructional methods in both private and public schools, but little has been done examining the relationships between teacher certification and years of teaching experience. It was not known if private school teachers, who do not always need to hold a teaching certification, utilize research-based instructional strategies in their classrooms. This study served to close a gap in the research by surveying teachers in private middle schools to determine if teachers utilized research-based instructional strategies, and if their use was affected by their certification status or years of teaching experience.

Purpose statement and research questions. The primary purpose of this study was to determine to what degree teachers in private middle school grades utilize nine instructional strategies suggested by Marzano et al. The study's research questions were influenced by Marzano et al.'s (2001) book, *Classroom Instruction that Works*. The second purpose of this study was to determine if there was a difference in use of Marzano et al.'s nine instructional methods, certification status, and years of teaching experience. Four research questions were created to address the purposes of this study.

Review of the methodology. A quantitative descriptive research design was utilized for the current research study. This researcher developed a survey based on Marzano et al.'s nine instructional methods. Surveys were created on Google forms and sent via email on December 19, 2022, and January 4, 2023. This survey was sent to approximately 200 private middle school teachers in Kansas and Missouri who taught core academic subjects (English Language Arts, Social Studies, Math, Foreign Language, and Science). Nine one sample *t* tests were used to analyze each research question to

determine the extent to which certification and years of teaching experience affected the use of Marzano et al.'s nine instructional strategies in the classroom. The data focused on four research questions and 36 hypotheses.

Major findings. The results of the data analysis are summarized in this section addressing the research questions related to the use of Marzano et al.'s nine instructional strategies by certified and non-certified private middle school teachers. Also factored in the research questions was the difference in the use of Marzano et al.'s nine instructional strategies regarding years of teaching experience. The results of the data analysis revealed:

- Private middle school teachers use Marzano et al.'s nine instructional strategies in the classroom. Private school teachers do not utilize the instructional strategy of engaging nonlinguistic representations in the classroom as often as the other eight instructional strategies.
- There is no difference between certified teachers and non-certified private school teachers' use of Marzano et al.'s nine instructional strategies.
- There is no difference in private middle school teachers' use of Marzano et al.'s nine instructional strategies based on years of teaching experience.

The sampling frame size was approximately 200 private middle school teachers from Kansas and Missouri. Of the 200 teachers invited to complete the survey, 21 responded. The researcher was not able to test the difference in certified and non-certified private middle school teachers' use of Marzano et al.'s nine instructional strategies based on years of teaching experience. The decision was made not to resend

the survey based on the timing of the emails around winter break and the overall low number of responses.

Findings Related to the Literature

This section relates to prior research on teaching private middle school students, certification status, and teaching efficacy to the results obtained from this study's survey. This section also questions the "private school effect" by on student achievement and the qualities sought after in private school teachers to compete with certified public-school counterparts. Overall, the results will either confirm or refute what the current literature proposes.

The reasons parents choose to send their children to private schools are varied but includes the belief that according to a study by Donnelly (2021), "private schools are safer and provide better social and intellectual training" (p. 1). Smaller class sizes allow students and teachers to develop a closer relationship that can help students transition from elementary to middle school and may decrease the loss of achievement that may occur as concluded by Alsbaugh and Harting (1995) whenever there is a change in grade level. There is a belief by some that private school students outperform their public-school counterparts called "the private school effect" (Lubienski & Lubienski, 2008, p.3). While this is false according to the data collected by Lubienski and Lubienski in 2006, there is a belief strong enough among some parents that they will pay tuition and provide the extra time and transportation to give their child a perceived academic advantage. A study conducted by Duncan and Sandy (2007) suggested the perceived academic advantage may be due to the high level of educational investment in the home environment. Duncan and Sandy (2007) also noted a high level of educational

investment can sometimes lead private school teachers to feel the strain from parents to maintain a high level of instruction for students.

Instruction in private schools sometimes comes from teachers who do not hold a state teaching certificate. In Kansas and Missouri, there are no state certification standards for private school teachers. Private school leaders have the freedom to hire teachers that fit into the school culture. Teachers with high verbal skills and traits such as passion, care, devotion, and flexibility are hard to measure through the certification process but are sought after in private schools to maintain a competitive edge with the public schools. Some studies (Alexander & Fuller, 2004, Belson & Husted, 2015) point to higher student achievement when taught by certified teachers. Other studies (Walls et al., 2002) asked what constituted an effective and ineffective teacher never mentioned certification as a requirement for effective teaching.

Effective teaching, in a pedagogical sense, may stem from the use of proven instructional strategies. Marzano et al.'s nine instructional strategies have been researched as effective in increasing student learning in multiple studies (Haystead & Marzano, 2006, Musmar, 2019, Rowais, 2019). This study found that there is no measurable difference in the use of Marzano et al.'s nine instructional strategies regarding certification status. Private middle school teachers also use Marzano et al.'s nine instructional strategies to a great degree in their classrooms. There is also no difference between the use of Marzano's nine instructional strategies by teachers and their years of teaching experience. Teachers who have been teaching for 1-10 years use the nine instructional strategies as much as teachers who have been teaching for 11 or more years.

Conclusions

This section details implications for action and recommendations for further research. The information is derived from the researcher's findings from the survey data collected. These implications for action regarding the use of Marzano et al.'s nine instructional strategies, certification, and years of teaching experience.

Implications for action. Implications for action are based on the results provided for leaders in private schools. In private middle schools, teachers overall use effective instructional methods regardless of certification status or years of teaching experience. Certification may not necessarily mean a teacher will be more effective in the classroom. The heads of private schools should maintain the practice of choosing a future teacher who fits the school culture whether the teacher is certified or not. The practice of hiring teachers who have a major field of study in the subject they are teaching should be maintained to keep a high level of academic rigor. Based on the results of the hypothesis testing, teachers who have taught for fewer than 10 years appear to use effective teaching strategies at similar levels to those who have been teaching for 11 or more years.

In other words, experience may matter less when effective teacher professional development is being employed by the private school. To help teachers who are not certified hone their teaching practices, professional development may be important. Professional development that focuses on research-based instructional practices such as Marzano or Hattie may be helpful for teachers who are not certified and are not familiar with educational pedagogical research. Professional development should be targeted toward research-based methodology, which is what the teacher may need, in part, to succeed in the classroom.

Recommendations for future research. The first purpose of this study was to determine if private middle school teachers were using a set of research-based effective teaching strategies as identified in Marzano et al.'s nine instructional practices. Further research could be conducted to discover if private elementary school (grades K-5) and high school teachers (grades 9-12) also use Marzano et al.'s nine instructional practices in their classrooms. This would provide a reflection to what extent secondary private school teachers are utilizing Marzano et al.'s instructional strategies in the classroom.

The survey could be expanded to collect a more detailed set of classroom instructional practices. The survey could be further enhanced by more classroom examples of how each of the nine instructional practices can be used. This adjustment could help teachers who may not be familiar with Marzano et al.'s nine instructional strategies respond to the questions more accurately. Another survey method could be utilized to add a layer of legitimacy to the study. Instead of using Google Forms, a survey generator like Survey Monkey may be more favorable to use.

Overall, if additional survey responses could have been collected from a greater number of private school teachers, the results could have been more reflective of private middle school teachers. It may be better to send a survey of this nature in the middle of fall (September or October) instead of around the winter break. Teachers may be more inclined to answer a survey that asks to reflect upon teaching earlier in the year. In future research, the geographic area could be widened to include more than two states and, in doing so, perhaps garner more responses. All types of private schools could be surveyed, both independent and parochial. Also, a qualitative study that utilizes teacher interviews about their teaching methods could be conducted. This would give the researcher more

in-depth information about the thought processes of teachers in the classroom in relation to their teaching strategies.

Concluding remarks. Effective teachers are not just created in schools of education in universities. The study has shown most private school teachers do use research-based effective teaching strategies in their classrooms. Successful teachers come with a wide range of teaching experience and with a host of content knowledge, but sometimes without state teaching certification. Teachers, especially at the middle school level, as Quirke (2009) stated, with “passion, caring for students, devotion to teaching, and flexibility” (p. 626) are needed to help middle school students transition into years of academic growth instead of academic loss. Teachers, both with and without certification, in public and private schools alike, have the vital task of effectively teaching and developing relationships to help children navigate the transitional world of middle school. Research-based instructional strategies have been shown to promote more effective classroom instruction supporting increased student achievement.

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Appendices

Appendix A: Teacher Survey

Based on reflections about your classroom instruction, please rate the statements on a Likert-type scale: 1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal.

1. I identify similarities and differences with students in my classroom. An example may be the use of diagrams and charts to compare items or the creation of metaphors and analogies.
1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal.
2. I ask students to summarize material presented in class by encouraging students to take notes in class (either teacher formatted, or student formatted).
1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal.
3. I reinforce effort and provide recognition for students. An example may be effective praise to individual students by recognizing success at difficult tasks or linking success to effort.
1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal
4. I assign homework that keeps parental involvement to a minimum and that is purposeful while providing meaningful feedback on the homework assigned.
1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal
5. I utilize nonlinguistic representation of knowledge such as graphic organizers, concept patterns, cause-effect patterns, or a model.
1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal
6. I incorporate meaningful cooperative group work with varied group sizes and student group make up.
1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal
7. I set objectives and provide feedback for students. For example, I use rubrics to assess student work and provide timely, corrective feedback on assignments.
1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal
8. I ask students to generate and test hypotheses. For example, I ask students to build something using limited resources or I ask students to predict what would happen if a familiar system like public transportation were changed.
1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal

9. I use cues, questions, and advanced organizers with students. For example, I pause briefly after asking students a question. I vary the style of advanced organizer use by telling a story or creating a graphic image to expose students to information before they “learn” it.

1 = never, 2 = rarely, 3 = occasionally, 4 = a moderate amount, 5 = a great deal

10. I hold a current teaching certificate.

Yes or No

11. I have been teaching for:

1-10 or 11 or more years

Appendix B: Teacher Contact Email

Survey Email

Teachers,

You are receiving this email because you teach a middle grade in a private school. The purpose of this email is to request your participation in the following survey. Your participation in the survey will help me understand if teachers in private middle school grade levels use research based instructional practices in classrooms.

The data collected will be used by me, a doctoral candidate from Baker University, for analysis as part of the dissertation requirements. The more people that take this short survey, the more data I can collect which leads to a more complete study. The study is designed to investigate the use of Robert Marzano's nine instructional methods in the classroom.

Your participation in this survey will directly affect the quality of data collected. A summary analysis of the data will be conducted, and no individual participant will be identifiable. Your participation is voluntary, and you may choose to skip questions or stop participation at any time.

The survey consists of 11 survey items and should take about 20 minutes to complete. Please consider completing the survey before January 4, 2023. By clicking the following link and submitting the survey, you indicate your consent to participate and your consent for me to use your answers for educational purposes. The survey can be completed using the following link:

Your participation in the survey is genuinely appreciated! Thank you for your support!

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Appendix C: Reminder Email

Teachers, this email is to follow up on the email sent on December 12, 2022, regarding the survey about the use of Marzano's nine effective instructional methods. Please consider this a reminder as a request to participate in the survey.

All responses to the survey will be anonymous and no teacher will be identified from their response. The collected data will help me understand if teachers in private middle school grade levels use effective instructional practices in classrooms and possibly assist in crafting better professional development programs for teachers in private schools.

The survey consists of 11 survey items and should take 10 minutes to complete. By clicking the following link and submitting the survey, you are indicating your consent to participate. The survey can be completed using the following link:

Your participation in the survey is genuinely appreciated! Please take a few minutes to complete the included survey as soon as possible.

Thank you for your support!

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