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An Examination of Evidence-Based Practice (EBP) in Teacher Preparation Programs for Rural School Educators

Jamie Lea Walker-Davidson
Lindenwood University

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Jamie Lea Walker-Davidson

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Julie K. Williams — 04/16/2018

Dr. Julie Williams, Dissertation Chair — Date

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Dr. Dennis Cooper, Committee Member — Date

Kathy J. Grover — 04/16/2018

Dr. Kathy Grover, Committee Member — Date

Declaration of Originality

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

Full Legal Name: Jamie Lea Walker-Davidson

Signature:  Date 4/16/2018

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Abstract

The purpose of this study was to examine the perceptions of first-year teachers regarding the use of Evidence-Based Practices (EBPs) within their teacher training programs. Participants in this study included 35 teachers from one of the 46 rural public-school districts in south-central Missouri. The 43 EBPs outlined in Robert Marzano's (2017) *New Art and Science of Teaching: More than Fifty New Instructional Strategies for Academic Success* were used to frame the research. A survey with Likert-type statements and open-ended questions regarding EBPs taught in teacher preparation programs was completed by participants. Participants were asked to identify EBP strengths and weaknesses of their preparatory programs. Data revealed participants believed four key areas needed to be covered more in-depth within instructional programs: 1) creating and utilizing assessments, 2) classroom management strategies, 3) engaging and motivating reluctant learners, and 4) time management techniques. Participants also indicated the desire to have spent more time in classrooms completing fieldwork, as they believed this to be a valuable part of the training programs. The data suggested reflective practice of theory and classroom experience should be increased in teacher preparation programs.

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Chapter One: Introduction

Each fall, educators enter the classroom to teach students who come from a range of home situations (National Council on Teacher Quality, 2016). Often students are worried about where the next meal will come from, distressed by violence in the home, deprived of sleep, or preoccupied with modern-day devices and have difficulty paying attention in class or learning new concepts (National Council on Teacher Quality, 2016). Moreover, teachers are expected to help students meet and exceed ever-changing state standards (National Council on Teacher Quality, 2016). Considering all of these factors, are education preparation programs preparing teachers to handle the issues of today's students (Maxwell et al., 2016)?

According to several national and state studies, school administrators do not believe first-year teachers are prepared to put theory into practice (Meyer, 2016). Likewise, first-year teachers often report feelings of inadequacy and lack of preparation (Sawchuk & Rebora, 2016). The nation is focusing on the preparation of future teacher candidates for the sake of students and the well-being of society (Feuer, 2015). One of the most concrete indicators of academic success for a student is the teacher (Garland, Garland, & Vasquez, 2013). Therefore, it is essential teacher preparation programs create successful new educators for the classrooms of today and tomorrow (Latham, Mertens, & Hamann, 2015).

In 1998, Congress initiated the Title II teacher-quality program and the federal report card with the intentions of improving the quality of teacher preparation programs to more adequately prepare teachers, which is critical in creating stronger academic programs for K-12 classrooms (Crowe, Allen, & Coble, 2013). Close to three billion

dollars a year are spent by the federal government with the intent of improving the quality of future teachers (Feuer, 2015). However, the progression of these changes has been modest despite substantial expenditures of private and public funds (Crowe et al., 2013).

Educational researcher, Robert Marzano (2017), has spent years researching evidence-based practices (EBPs) for classroom instruction. Providing pre-service teachers with the knowledge of these EBPs and the ability to put them into practice in the classroom should be a priority of teacher preparation programs (Bloom, 2014). This study highlights EBPs from Robert Marzano (2017) supported by John Hattie's (2010) frameworks, Carol Ann Tomlinson's (2017) concepts of differentiation, the techniques of Doug Lemov (2015), and the designs of Harry Wong (Wong, Wong, Jondahl, & Ferguson, 2014).

Researchers, policymakers, and educational leaders are concerned with diminishing teacher quality and high attrition rates of novice teachers (Latifoglu, 2016). Teague and Swan (2013) indicated significant attrition rates of novice teachers stem from the fact many teachers enter the classroom without sufficient preparation. The feelings of insufficiency, lack of preparation, and stress related to being a novice teacher cause many new teachers to leave the profession (Gourneau, 2014). Studies show approximately 40-50% of new teachers quit within the first five years of acquiring a teaching position (Ingersoll, Merrill, & Stuckey, 2014). Many novice teachers depart from the profession before they develop skills related to teaching, learn to work with colleagues to improve student learning, obtain practical knowledge about student growth, or create their professional persona (Fresko & Nasser-Abu Alhija, 2015; Gourneau, 2014).

High teacher attrition rates leave schools with large numbers of inexperienced teachers (Moore, 2016). Teacher attrition causes a significant loss for districts in both resources and student learning (Hannan, Russell, Takahashi, & Park, 2015; Sawchuk & Rebora, 2016). Vast turnover puts additional strain on rural schools with limited funding and a reduced selection of qualified teacher candidates, making it tough to obtain and retain competent educators (Shoulders & Krei, 2015). Teague and Swan (2013) estimated schools spend $50,000 a year on hiring and training new teachers. The morale of the remaining staff decreases and overall school effectiveness suffers when valuable resources are consistently devoted to recruiting and training new teachers (Latifoglu, 2016).

The nation's policy leaders have turned attention to teacher training programs and are seeking reform (Lincove, Osborne, Mills, & Bellows, 2015). According to Powell (2015), it is the responsibility of teacher preparation programs to provide teachers with the skills, EBPs, and knowledge base to be competent teachers in the 21st century. Teacher preparation programs must first improve their curricula and instruction to enhance the education of pre-service teachers (McMahon, Forde, & Dickson, 2015). The use of EBPs is the most meaningful improvement tool in teacher training today (Cook & Cook, 2016). Evidence-based practices are centered on research evidence and are based on the ideals of experts in the field (Cook & Cook, 2016). These practices provide educators with direction for how to improve the education of all students; therefore, EBPs should be taught within teacher preparation programs (Foster, 2014).

Background of the Study

In 2002, the No Child Left Behind (NCLB) Act was enacted to help direct a focus on struggling students (United States Department of Education, 2017). In 2015, President Obama implemented the Every Student Succeeds Act (ESSA), which focuses on ensuring all students are adequately prepared for a career or college after high school (United States Department of Education, 2017). Teacher education programs must make certain graduates are efficient and effective in the classroom in order to ensure students meet national mandates (Kaufman & Ireland, 2016).

In 2010, the National Council for Accreditation of Teacher Education (NCATE) actively encouraged teacher preparation programs to turn away from the traditional methods of teaching to a more clinically based educational experience (Gelfuso, Dennis, & Parker, 2015). The idea was to parallel other professional fields of study that require extended on-the-job training before practicing alone in the profession (Gelfuso et al., 2015). Clinical field experiences provide pre-service teachers with a chance to turn academic theory into practice by working with a variety of students and differentiating for each of their needs (Paquette & Laverick, 2017). The more time pre-service teachers spend in a classroom, the more prepared they will be for the teaching profession (Powell, 2015). Field experience helps pre-service teachers comprehend the tasks and issues that occur within a classroom and allows teacher candidates to work on classroom management skills while gaining an understanding of what is required of teachers on a day-to-day basis (Paquette & Laverick, 2017).

Because student success relies on the quality of the classroom teacher, it is of utmost importance pre-service teachers are adequately trained (Jimerson & Haddock,

2015). It is the task of teacher preparation programs to provide superior teachers for students across the nation (Miller-Levy, Taylor, & Hawke, 2014). According to Fisher, Frey, and Hattie (2016), "Every student deserves a great teacher, not by chance, but by design" (p. 2). The goal of teacher preparation is to give pre-service teachers the skills necessary to meet the unique needs of students; this can be accomplished through coursework grounded in EBPs and fieldwork through which pre-service teachers gain experience and practice using EBPs (Scheeler, Budin, & Markelz, 2016).

In Missouri, the Missouri Department of Elementary and Secondary Education (MODESE) has set clear standards to guarantee graduating education students are prepared for the classroom (Lacey, 2015). Specifically, the MODESE (2017a) requires the following: 1) Demonstrating content and pedagogical knowledge; 2) Passing school and state assessments in certification areas; 3) Participating in clinical field experiences, observations, and student teaching; 4) While student teaching, candidates must be able to apply content and pedagogical knowledge to classroom situations; 5) Candidates must also maintain a level of competency involved with education and GPA [grade point average].

Collegiate education preparation programs must also follow specific guidelines to be accredited to teach future educators (MODESE], 2017a). Faculty in education training programs must be qualified and certified within the areas of their teaching assignments (MODESE, 2017a). Programs must also follow specific procedures and maintain documentation to ensure the expectations of the MODESE (2017a) are met. Each preparation program must be reviewed and approved for accreditation on an annual basis (MODESE, 2017a).

Even with program standards in place, 72% of new teachers admit to feeling unprepared for the classroom, which contributes to the high attrition rates of novice teachers (Eisenman, Edwards, & Cushman, 2015). Approximately 30% of teachers leave within the first year, and up to 50% leave by year five (Gourneau, 2014). Teacher attrition places constant stress on districts to train, mentor, and socialize new teachers (Hannan et al., 2015). Districts are left with recruitment, replacement, and retention costs when teachers leave or move (Moore, 2016).

Conceptual Framework

In 2010, the NCATE reported new teachers were unprepared in terms of teaching abilities and content knowledge (Meyer, 2016). The NCATE (2010) report took place in the midst of the NCLB Act being replaced by the ESSA of 2015, which both support the need for teaching multiple, diverse educational theories in teacher preparation programs (Wood, Goodnight, Bethune, Preston, & Cleaver, 2016). Reform of traditional teacher preparation programs and emphasis on the teaching of different methods is needed (DeMonte, 2016). Many preparation programs are now shifting focus to the events, activities, and interactions that take place between teachers and students within a classroom (DeMonte, 2016). The practice of preparation in the field is similar to many other professions that require trainees to spend substantial amounts of time completing on-the-job training (DeMonte, 2016).

This study was based on Robert Marzano's (2017) *The New Art and Science of Teaching,* which included identification of three ideas of classroom instruction: instructional design, classroom management, and curriculum design strategies. Marzano's (2017) framework for classroom instruction detailed 43 fundamentals in 10

areas of teaching necessary for practical classroom instruction. Evidence-based practices are among the most substantial transformations in modern education reform (Cook & Cook, 2016). Marzano's (2017) pedagogies are research- and theory-based strategies that should be taught and experienced in teacher preparation programs to adequately prepare classroom teachers for future careers.

Statement of the Problem

Current attrition rates for novice teachers are around 50% within the first five years of teaching (Du Plessis**,** Carroll, & Gillies, 2015). Du Plessis et al. (2015) noted many novice teachers who leave within the first five years studied at highly rated colleges and received above-average performance evaluations in their acquired jobs. Of those who exit the teaching profession, many give reasons of dissatisfaction, inefficient time management, excessive workloads, ineffective behavior management skills, and disappointing school policies or placements (Du Plessis et al., 2015). Modest salaries, when compared to other professions that require the same amount of schooling, also lead to difficulty retaining effective teachers (Latifoglu, 2016). Too frequently, new teachers state they do not feel prepared for the realities of teaching (Sawchuk & Rebora, 2016).

The nation needs to focus on how to prepare future teachers adequately to reduce teacher attrition (Feuer, 2015). Scheeler et al. (2016) stated teachers who are well-trained in using EBPs remain in the field longer than those who lack the necessary training. This research was designed to elicit the perceptions of first-year teachers to discern what practices are taught most efficiently in teacher preparation programs. This study was also intended to ascertain what may be missing that could potentially help new teachers become more successful and better prepare them for a teaching career.

The MODESE (2013) set forth the Missouri Model Teacher and Leader Standards including the use of EBPs to prepare teaching candidates (MODESE, 2013). There are currently 57 colleges in Missouri with programs dedicated to the preparation of future teachers (National Center for Education Statistics [NCES], 2017a). Among teacher graduates from different programs, there are various attitudes toward levels of preparedness (Lewis et al., 1999). This study focused on teacher preparation programs that supply rural south-central Missouri schools with teaching candidates.

Purpose of the Study

This research study was intended to examine the insights of first-year teachers in rural south-central Missouri regarding their educational preparation from area universities. According to Blanks et al. (2013), scholarly research often overlooks rural schools. Since one out of every five students in the United States attends a rural school, the education of rural school teachers is vital (Blanks et al., 2013). This study was designed to determine what EBPs are most beneficial to novice teachers. Open-ended questions and Likert-type statements were administered to first-year teachers with the intention of learning how to prepare novice teachers for the classroom.

Due to scarce funding and a limited supply of available teachers, rural schools frequently face difficulty hiring and retaining highly qualified veteran teachers (Shoulders & Krei, 2015). Therefore, rural schools often hire teachers who do not have classroom experience and are frequently not prepared for the classroom (Shoulders & Krei, 2015). In the United States, approximately 20% of new teachers leave the profession within the first two years of acquiring a teaching position (Du Plessis et al., 2015). High rates of teacher attrition are a challenge for many schools in America

(Hannan et al., 2015). Rural schools are often stuck with annual turnover costs associated with recruitment and mentoring expenses (Sawchuk & Rebora, 2016). Expenditures are estimated to be around $50,000 to train new teachers each year (Teague & Swan, 2013).

Research questions. The following research questions guided the study:

1. Which evidence-based practices (EBPs) do rural first-year teachers believe they were most prepared?
2. What evidence-based practices (EBPs) do rural first-year teachers believe were missing from their teacher preparation programs?
3. What are the most difficult aspects of teaching identified by rural first-year teachers?

Significance of the Study

The National Council on Teacher Quality's research survey revealed the nation's teacher education programs do not sufficiently prepare educators for the classroom (Fuller, 2014). Detrich, Keyworth, and States (2016) defined EBPs as the integration of existing evidence, professional expertise, and values of stakeholders. This study was designed to identify what EBPs are taught in teacher preparation programs in hopes of determining which practices best support new teachers.

Definition of Key Terms

For the purposes of this study, the following terms are defined:

Evidence-based practices (EBPs). Evidence-based practices are grounded in available research with consideration of the goals of learners and the judgment of professionals in the field (Cook & Cook, 2016).

Rural schools. According to the National Center for Education Statistics (NCES) (2017b), a rural territory is more than 25 miles from an urbanized area. The NCES (2017b) defined an urbanized area as one having a population size of 100,000 or more.

South-central Missouri. For the constraints of this study, south-central Missouri consisted of the 33rd District boundaries for the Missouri Senate. There are 48 schools in the 33rd District in Missouri (Statistical Atlas, 2015). Two districts were excluded from this study as they did not meet the qualifications of a rural district (Statistical Atlas, 2015).

Limitations and Assumptions

The following limitations were identified in this study:

Sample demographics. The sample was limited to a nonprobability convenience sample from south-central Missouri rural schools. This study involved 35 first-year Missouri public school teachers who teach in one of the 46 rural school districts in south-central Missouri. The sample size of this research was a limitation because the nonprobability convenience sample did not allow all rural first-year teachers to participate and share perceptions regarding teacher preparation of EBPs (Creswell, 2014).

Instrumentation. The primary researcher developed a Likert-type statement and open-ended survey that was distributed through an online source, Qualitrics. The survey used for this research was a limitation, as it was created by the researcher (Creswell, 2014). As stated in Creswell (2014), survey results reveal trends within data but cannot offer cause-and-effect relationships, which is possible when researchers conduct experimental research.

The following assumptions were accepted:

1. It was assumed the responses of the participants were honest and without bias due to the confidentiality of the replies and the anonymity of the participants. Furthermore, subjects were given the opportunity to withdraw at any time without consequences.
2. It was assumed the survey instrument was valid.
3. It was assumed the participating rural first-year teachers were representative of typical rural first-year teachers.

Summary

With more than 3.4 million employed teachers and 190,000 teaching candidates graduating each year, teaching is the most abundant profession in the United States (DeMonte, 2015). The training of these teachers falls upon the teacher preparation programs available, but what happens when those programs are not adequately preparing teachers (Pomerance, Greenberg, & Walsh, 2016)? Teachers who are not well-trained must presume appropriate teaching strategies, which places more stress on vulnerable novice teachers which causes student learning to suffer (Pomerance et al., 2016).

Chapter Two contains a review of pertinent literature. The EBPs outlined by Robert Marzano (2017) are explained in detail. Other topics include teacher attrition problems, regulations and state standards required for teacher preparation programs, coursework, fieldwork, and challenges faced by new teachers.

Chapter Two: Review of Literature

The most significant educational factor for a student is the teacher; therefore, teacher preparation programs should be devoted to creating quality and effective teachers trained in research-based teaching strategies (Quinn, 2014). University-based teacher preparation programs should equip pre-service teachers to teach in the realities of a modern classroom (Heineke, Ryan, & Tocci, 2015). New teacher graduates should have familiarity and skills related to pedagogy, lesson design and preparation, standards, assessment, content knowledge, evidence-based practices, classroom management, and other responsibilities of teaching (Meyer, 2016).

One of the most influential factors affecting a student's academic success is the teacher (Kaufman & Ireland, 2016). However, a review directed by the National Council on Teacher Quality revealed a majority of teacher preparation programs are not adequately preparing the nation's teachers (Fuller, 2014). The United States produces triple the number of graduating teachers than it needs, while countries with top-ranking programs only recruit top-ranking students into their teaching programs (Fuller, 2014; McMahon et al., 2015). Stated in the 46th annual Phi Delta Kappa (PDK)/Gallup poll, Americans believe the best way to improve public schools is better teacher preparation and training programs (Bushaw & Calderon, 2014). Consequently, 60% of Americans feel requirements for teacher education programs are too easy and need to be more challenging (Bushaw & Calderon, 2014).

Chapter Two includes a review of the EBPs of Robert Marzano (2017). Also included are Missouri state policies associated with teacher preparation. Chapter Two continues with information on methodologies and EBPs taught within most teacher

training programs. The chapter concludes with a review of research on the current problems first-year teachers face.

Conceptual Framework

This study was based on the EBPs delineated by educational researcher Robert Marzano (2017). According to Scheeler et al. (2016), special emphasis should be placed on teaching EBPs when considering all the content knowledge, skills, and pedagogical knowledge required within a preparation program. Marzano's (2017) *New Art and Science of Teaching: More Than Fifty New Instructional Strategies for Academic Success* included 43 fundamentals in 10 areas of teaching recommended for effective classroom instruction. The following methodologies may be integrated into teacher preparation programs:

- Providing and communicating clear learning goals
    1. Providing scales and rubrics
    2. Tracking student progress
    3. Celebrating success
- Assessment
    4. Informal assessments of the whole class
    5. Formal assessments of individual students
- Direct instruction lessons
    6. Chunking content
    7. Processing content
    8. Recording and representing content
- Practicing and deepening lessons

9. Structured practice sessions

10. Examining similarities and differences

11. Examining errors in reasoning

- Knowledge application lessons

12. Engaging students in cognitively complex tasks

13. Providing resources and guidance

14. Generating and defending claims

- Strategies that appear in all types of lessons

15. Previewing

16. Highlighting critical information

17. Reviewing content

18. Revising knowledge

19. Reflecting on learning

20. Purposeful homework

21. Elaborating on information

22. Organizing students to interact

- Engagement

23. Noticing when students are not engaged or responding

24. Increasing response rates

25. Using physical movement

26. Maintaining a lively pace

27. Demonstrating intensity and enthusiasm

28. Presenting unusual information

29. Using friendly controversy

30. Using academic games

31. Providing chances for students to talk about themselves

32. Motivating and inspiring students

- Rules and procedures

33. Establishing rules and procedures

34. Organizing the physical layout of the classroom

35. Demonstrating withitness

36. Acknowledging adherence to rules and procedures

37. Acknowledging lack of adherence to rules and procedures

- Relationships

38. Using verbal and nonverbal behaviors

39. Understanding students' backgrounds and interests

40. Displaying objectivity and control

- Communicating high expectations

41. Demonstrating value and respect for reluctant learners

42. Asking in-depth questions of reluctant learners

43. Probing incorrect answers with reluctant learners. (Marzano, 2017, p. 8)

Effective teaching is an intricate process with many elaborate pieces; therefore, no one instructional strategy can assure optimal student learning (Marzano, 2009, 2017). Instead, instructional strategies need to be used together to optimize learning (Marzano, 2009, 2017). Choosing to focus on a single set or only a couple of the categories is a mistake; likewise, each lesson should not contain all the groups (Marzano, 2009).

Instead, teachers should focus on the categories which pertain to a particular objective (Marzano, 2009). Having a toolbox of useful strategies to pull from allows the teacher to keep the lessons fresh and the students engaged (Burgess, 2012).

Marzano's Strategies

Providing and communicating clear learning goals. By providing and communicating clear learning goals, students will comprehend what is required of them for each lesson (Marzano, 2017). Faulconer (2017) agreed students benefit from being informed of expectations. Students are then able to gauge how they are doing and what needs to be done to improve their work (Marzano, 2017). When students know the desired outcomes, they are more apt to respond to feedback, as feedback helps them achieve higher goals (Fisher et al., 2016). Setting high expectations when setting goals also allows students to understand what the teacher expects of them and that the teacher knows they are capable of learning (Goral, 2017). Faulconer (2017) stated there is a connection between low achievement scores and a student's inability to determine what the expected outcome of an assignment may be; students perform better when they understand what the teacher requires of them to be successful.

Providing scales and rubrics. Providing scales and rubrics allows students to understand what they are responsible for learning (Marzano, 2017). The purpose of providing learning objectives is to communicate the expectations of performance and desired outcomes with students (Faulconer**,** 2017). Students should be given access to rubrics, criteria, and standards to improve performance (Jonsson, 2014). A rubric allows students to know what content is assessed, how to achieve a preset grade based on an educational standard, and how to gauge what level of work they are completing (Jonsson,

2014). Rubrics are formative feedback that allows students to adjust their knowledge over time (Bo & Misiak, 2015).

Student learning standards and objectives should be identified and communicated before instruction (Sees, 2012). Ashton and Davies (2015) found rubrics allow students to make more accurate valuations of their own and the work of others. Jonsson (2014) articulated the importance of rubrics written with student comprehension in mind; if a student cannot interpret the required criteria, the rubric can negatively affect the outcome of the project and the overall understanding of the concept.

Tracking student progress. Tracking student progress allows a student and teachers to see the student's growth; students become intrinsically motivated when they know they are improving (Marzano, 2017). Tracking student progress allows students, parents, and teachers to understand students are learning new information, developing skills and knowledge, and achieving objectives (Sees, 2012). Tracking student progress also allows teachers to customize learning strategies for each student, once deficits are recognized within an area of knowledge (Seo, Taherbhai, & McGrane, 2015). Through progress tracking, teachers are also able to determine the success of their lessons through progress monitoring (Fisher et al., 2016). When a lesson fails, a teacher can use progress tracking to develop metacognitive awareness of his or her teaching strategies and to understand when re-teaching of a concept is needed (Clark, 2014).

Celebrating success. Celebrating success when students reach goals on a progressive scale allows students to take pride in their learning and growth (Marzano, 2017). Hattie (2010) stated feedback is among the top-10 influences on achievement. Teachers who communicate with students about progress allow students to acknowledge

the teacher cares and wants them to be successful (Maliqi, 2015). Strategies for celebrating success include observing knowledge gain, acknowledging score increases, and praising effort either with verbal feedback to the student or the whole class; notes or phone calls home to the parents can also be used (Marzano, 2017). When parents are involved in positive communication about a student's progress, they are more apt to trust the teacher and become more involved in the student's academics, as opposed to solely being contacted about a student's shortcomings or behavior issues (Kraft, 2017).

Assessment. Assessments are the tools that provide students with the feedback they need to further their understanding of content (Marzano, 2017). Assessments also provide teachers the information they need to adjust lessons and teaching strategies to help students reach content mastery (Marzano, 2017). To teach each student, a teacher must first know what he or she needs; this can be achieved by utilizing assessments, both formal and informal, to better comprehend the level of each student and what each student needs to grow and be successful within the classroom (Tomlinson, 2017).

Mastery is when a student can comprehend or master a concept to the level of proficiency outlined in the objective and assessment (Wong et al., 2014). Assessments are the process of making discernments and reporting results about a student's progress toward the fulfillment of educational objectives (García Laborda, Sampson, Hambleton, & Guzman, 2015). Sees (2012) agreed teachers need to continually monitor and check student understanding of mastered content and objectives. Assessments can be given as informal whole class evaluations or formal individual evaluations (García et al., 2015).

It is expected for classroom teachers to be knowledgeable in the development of practical assessments that inform instruction (Alkharusi, Aldhafri, Alnabhani, &

Alkalbani, 2014; Hoaglund, Birkenfeld, & Bluiett, 2014). Teachers should be trained in administering, scoring, interpreting, and communicating evaluation results to students (Alkharusi et al., 2014). To improve instruction, a teacher should use a cycle of collecting data, analyzing data, and adjusting instruction based on the data (Cherasaro, Reale, Haystead, & Marzano, 2015; Meyer, 2016). When used correctly, data can provide information to determine which students need intervention and to improve instructional strategies (Hoaglund et al., 2014). Data from an array of classroom assessments should provide the teacher with information about the steps to take to support each student's needs (Hoaglund et al., 2014). Assessments should be used to personalize instruction to each student (Tomlinson, 2017).

Whole class informal assessments. Informal assessments of whole class learning allow the teacher to determine how well the class is understanding content (Marzano, 2017). Through whole class assessments, such as response boards and class voting, students readily engage in classroom activities (Marzano, 2017). Ruiz-Primo and Furtak (2006) stated whole class assessments consist of a cycle of questioning, student response, and collecting information on student learning. Informal whole class assessments allow the teacher to evaluate student understanding and adjust lessons to fill in any gaps (Ruiz-Primo & Furtak, 2006).

Informal assessments can also include students self-monitoring and self-checking their level of understanding and discussing their lack of knowledge with the teacher (Lemov, 2015). Informal individual evaluations allow the teacher to obtain information about a particular student's level of understanding (Ruiz-Primo & Furtak, 2006). Objective-targeted questioning enables a teacher to determine what each student knows

with a series of preplanned questions asked of individual students (Lemov, 2015). Educators can also use affirmative checking of student work so students can obtain confirmation they are on the correct path, and teachers can adjust and correct any errors on an individual level (Lemov, 2015). The feedback given to students allows for a positive relationship between the student and teacher and provides the student with relevant information needed for improvement (Fisher et al., 2016).

Individual student formal assessments. Formal assessments of individual students allow teachers to obtain accurate information about individual student understanding of a particular topic (Marzano, 2017). Pre- and post-assessments of individual students allow the teacher to determine the impact of instruction (Fisher et al., 2016). Teachers can utilize pre- and post-tests to evaluate knowledge gained by calculating gain scores for individual students (Marzano, 2009). Pre-assessments allow educators to design instruction that bridges the gap between what students already know and what they are expected to know (Fisher et al., 2016). Formative assessment establishes whether a student has learned content taught and provides a teacher with information to guide future classroom instruction (Sees, 2012).

Direct instruction lessons. Marzano (2017) found when compared to discovery learning; direct instruction is superior in most learning situations. Direct instruction is crucial when communicating new information to students (Marzano, 2017). Direct instruction is one of John Hattie's (2010) top-10 high-impact evidence-based teaching strategies. The most successful way to convey new information is to present it in the most direct and obvious method possible (Kuhn, 2007). Hattie (2010) asserted direct instruction has double the effect size of inquiry-based learning and is four times more

effective than problem-based learning. With direct instruction, the teacher provides models, demonstrations, and a justification for the lesson; the instructor sets the expectations for the learning experience (Clark, 2014). Direct instruction allows teachers to present new material, provide examples, and practice skills with new content (Helf, 2015).

Chunking content. Chunking content and breaking new information into small, manageable pieces for students to understand allows students not to become overwhelmed with too much new information at once (Marzano, 2017). The brain is capable of learning isolated bits of information; however, it is more efficient at retaining information that is chunked together (Tomlinson, 2017). The brain is continuously working to make connections between new information and prior knowledge (Tomlinson, 2017). When organized information includes concepts, categories, ideas, or themes, the brain creates relationships and more successfully retains new information (Tomlinson, 2017). Teachers should chunk lesson content by prioritizing information into reasonable amounts to endorse retention (Sees, 2012). Pre-assessment data enable teachers to decide how much information students can handle in each chunk; the more content students already know on a topic, the more significant the portions of information a teacher can give (Marzano, 2017).

Processing content. Providing time to process and analyze new content allows students to increase comprehension and retention (Marzano, 2017). There are many ways to structure content processing that enable students to augment their learning; some of these strategies include Think-Pair-Share, considering multiple perspectives on new knowledge, collaborative processing, questioning in small groups, and reciprocal

teaching (Marzano, 2017). Teachers should allow for whole group, small group, and individual processing time (Sees, 2012). Allowing students time to process, enables them to understand new material and make the necessary connections for learning more material (Marzano, 2017).

Reciprocal teaching is another of John Hattie's (2010) top-10 high-impact evidence-based teaching strategies. Reciprocal teaching enhances comprehension and allows students to monitor their understanding of a particular lesson (Zablocki, Horn, & Cuenca-Carlino, 2017). Reciprocal teaching follows a circular pattern of asking a question about the content, discussing the subject as a group, summarizing the material, and making a prediction about the next chunk of content (Fisher et al., 2016).

Recording and representing content. Recording and representing content using notes, outlines, summaries, graphic organizers, and pictorial models allows students to create an internal nonlinguistic representation of newly learned material (Marzano, 2017). According to Wong et al. (2014), students who take notes do better on assessments than students who do not take notes. However, students need to be taught how to identify and organize relevant information to take notes efficiently and to move from being passive listeners to active learners (Wong et al., 2014). Note-taking when acquiring new information and studying one's notes benefit students by deepening knowledge (Fisher et al., 2016). Stacy and Cain (2015) emphasized note-taking is an essential feature of learning, and students who take detailed notes do better academically. Recording and representing content allows students to use recorded information to study; notes help students make connections and remember newly learned information (Marzano, 2017). Brain research has revealed learning is a process of connecting new ideas to familiar

content; for students to make sense of new information, they must experience ample opportunities to make connections to internalize information (Tomlinson, 2017). Stacy and Cain (2015) stressed teaching students how to take notes systematically is helpful when studying considerable amounts information; however, training students in note-taking skills seems to be overlooked.

Practicing and deepening lessons. After content is introduced, teachers must expand student knowledge by allowing students to use and work with newly acquired information (Marzano, 2017). When students answer why or explain how something works, use more precise language, give evidence to support their claims, or integrate and apply newly learned skills, knowledge is deepened which helps a teacher to gauge student understanding and abilities (Lemov, 2015). Understanding information is far more intricate than merely recalling facts (Tomlinson, 2017). When learners genuinely understand content, they use the material, explain and give examples of the information, teach the concept to others, relate the knowledge to personal experiences, compare and contrast the ideas, create analogies utilizing the content, transfer the knowledge to connect to unfamiliar settings, and pose new problems using the concept (Tomlinson, 2017). Teachers must help students develop procedural knowledge, which includes strategies, skills, and processes (Marzano, 2017). Teachers must also advance declarative knowledge, which provides for terminology, details, facts, concepts, and principles (Marzano, 2017).

Structured practice sessions. Structured practice sessions allow students to work with and manipulate procedural knowledge (Marzano, 2017). Specific strategies that relate to structured practice are modeling the processes for students in several different

variations, guided practice, close monitoring, worked practice, and frequent structured practices (Marzano, 2017). Modeling is particularly useful when students are learning how to solve problems; seeing and hearing how a teacher interacts with a new concept allows students to understand the processes involved (Fisher et al., 2016). According to Marzano (2017), one of the best strategies to utilize during practice is showing students concrete examples of a well-implemented concept or skill.

Examining similarities and differences. Exploring similarities and differences helps develop declarative and procedural knowledge (Marzano, 2017). There are several strategies to use when having students look for similarities and differences, such as writing comparison summaries; creating Venn diagrams, T-charts, pictures, and graphs; and producing similes, metaphors, or analogies (Marzano, 2017). Learning takes place as students make connections between old and new content and compare newly acquired information to prior knowledge; looking for similarities and differences allows students to better grasp concepts (Tomlinson, 2017). Comparing and contrasting enables students to analyze content and gain more in-depth understanding and is considered a higher-order thinking skill (Nappi, 2017).

Examining errors in reasoning. Analyzing mistakes in reasoning allows students to explore the logic associated with the arguments of others or their thoughts (Marzano, 2017). Strategies that enable students to look for errors in reasoning include identifying mistakes in faulty logic, weak references, misinformation, or flawed thinking (Marzano, 2017). While examining for errors in reasoning, students should also back up their thinking with support and evidence (Marzano, 2017). Wang, Matsumura, and Correnti (2017) stated logical responses and claims supported by evidence and

explanations have a positive effect on comprehension of the material. Quality evidence is relevant, sufficient, specific, and validates the claim (Wang et al., 2017).

Knowledge application lessons. Once a new concept is learned, students should be given the opportunity to produce and defend claims through knowledge application lessons (Marzano, 2017). Knowledge application requires students to apply their newly acquired knowledge to solve unique situations (Marzano, 2017). Synthesizing, supporting, and applying knowledge are all higher-order thinking skills; students who use higher-order thinking skills have a deeper understanding of ideas, can apply learned concepts to solve problems, and retain new information longer (Marzano, 2017).

Engaging students in cognitively complex tasks. Engaging students in cognitively complex tasks requires multiple mental steps and allows students to incorporate what they have learned to solve new problems (Marzano, 2017). Students learn more when they engage in complex, more-profound thinking activities (Fisher et al., 2016). Experimental inquiry, problem-solving, decision-making, investigation, and invention are all strategies which engage students in cognitively complex tasks (Marzano, 2017).

Providing resources and guidance. Once students have started working on their cognitively complex tasks, the teacher's role changes from an instructor to support (Marzano, 2017). While supporting students, the teacher provides resources, guidance, feedback, and advice (Marzano, 2017). Because the teacher takes on a support role, it is up to the students to think deeply about the content and form their conclusions (Marzano, 2017).

Generating and defending claims. Once students have generated new conclusions, they should be allowed the opportunity to defend their claims (Marzano, 2017). Claims should be backed up with empirical research and evidence (Marzano, 2017). By asking students to provide evidence to support a claim or conclusion, the process of creating sound arguments is emphasized (Lemov, 2015). Students should be able to cite and defend their conclusions through well-structured arguments with grounds, backing, and qualifiers (Marzano, 2017). Being able to form a clear, well-defined case to back up a solid conclusion allows students to learn at a more in-depth, rigorous level (Marzano, 2017).

Strategies for all lessons. There are several strategies Marazono (2017) stated should appear at each level of instruction: direct instruction, practicing and deepening knowledge, and knowledge application. These strategies help students relate prior knowledge to new information (Marzano, 2017). Previous experiences are the basis on which all new learning is founded (Guskey & McTighe, 2016).

Previewing. Accessing a student's prior knowledge allows the student to express what he or she already knows about a topic (Guskey & McTighe, 2016). However, a student's knowledge can be jumbled, incomplete, or wrong; understanding a student's prior knowledge base allows the teacher to form instruction around what is needed (Fisher et al., 2016). Previewing strategies include exciting hooks, Know-Want to know -Learned (KWL), preview questions, skimming, prepared organizers and notes, anticipation guides, and pre-assessments (Marzano, 2017).

Highlighting critical information. Highlighting critical information allows the teacher to point out what is essential to each lesson (Marzano, 2017). Highlighting helps

students discern between important and nonessential information when taking notes or learning new material (Marzano, 2017). Proper note-taking is valuable in acquiring new skills, deepening knowledge, organizing information, and reviewing information (Fisher et al., 2016). To highlight critical information, the teacher may repeat essential content, ask questions that focus on critical issues, provide visual aids, modify tone of voice, use body gestures, and place more emphasis on critical content (Marzano, 2017).

Reviewing content. Reviewing content allows students to access what they have learned (Marzano, 2017). There are many EBPs involved in content review including cloze review activities, summarizing what was learned, projects that demonstrate learned skills, practice tests or exercises, and discussion and question sessions (Marzano, 2017). Teachers should allow an adequate amount of time to review a lesson to bring closure to the lesson and to complete the circle of knowledge started with the introduction of student goals and objectives (Sees, 2012). Discussion and question sessions allow those who are struggling with concepts to co-construct and gain new knowledge from classmates (Fisher et al., 2016). When asking questions, teachers should keep in mind the quality of each question will determine the quality of the answers; the type of question regulates the information the brain processes (Burgess, 2012). Cumulative reviews can be used at the end of each unit to attach new knowledge to previous units, ensuring older content is kept fresh in a student's mind (Marzano, 2017).

Revising knowledge. Revising knowledge allows students to add to and change information previously learned (Marzano, 2017). The EBPs which enable students to reorganize knowledge include academic notebook entries and reviews, notes, and assignments revisions and corrections (Marzano, 2017). Giving students constructive

feedback allows them to update their content and knowledge (Fisher et al., 2016). These strategies require students to review prior knowledge; identify any mistakes, gaps, or errors in previous information; and make amendments to their knowledge base (Marzano, 2017).

Reflecting on learning. Reflecting on learning allows students to focus on content and themselves as learners, which makes their thinking metacognitive (Marzano, 2017). Metacognition is defined as the ability to contemplate one's learning, to self-monitor, and to regulate (Fisher et al., 2016). The EBPs that support metacognition and reflection are knowledge comparisons of current knowledge to previous knowledge, reflective journals, think logs, and exit slips (Marzano, 2017). Effective exit slips allow students to show what they have learned in a particular lesson and permit the teacher to assess student knowledge of the current content (Lemov, 2015).

Purposeful homework. Purposeful homework is that which previews new concepts, deepens knowledge, or helps students practice and process skills (Marzano, 2017). Homework has a minor impact on student learning and can be counterproductive to education when a student does not fully grasp the concepts and potentially does not have anyone to help outside of school (Fisher et al., 2016). When students are assigned new ideas to learn on their own, there is a chance the information will be misconstrued and learned incorrectly (Fisher et al., 2016). Meaningful homework assignments are those that match the individual student's needs (Tomlinson, 2017). If homework is assigned, specific guidelines and resources should be available for parents to provide support to students (Marzano, 2017).

Elaborating on information. Elaborating on information requires students to go beyond using learned information (Marzano, 2017). Students must apply new knowledge and synthesize it to solve problems and form new ideas (Marzano, 2017). The EBPs for helping students elaborate on learned information involve asking inferential questions, having students elaborate and explain the reasoning behind answers, and asking students to provide evidence to promote a deepened understanding (Marzano, 2017). When students have a deep understanding of concepts, they can link information and ideas and connect knowledge across content areas (Fisher et al., 2016).

Organizing students to interact. Students need to be organized to communicate, interact, facilitate learning, and collaborate among peer groups; when students work together and discuss information, they gain a deeper understanding of the content (Marzano, 2017). Students need to engage in conversation about the material they are learning and discuss why it is essential and how it relates to the real world; this requires students to reflect on new information and utilize higher-order thinking skills (Kuhn, 2007). Collaborative group work allows students to obtain common goals and assume responsibility for teamwork; these skills are desirable for successful outcomes in school, work, and throughout life (Wong et al., 2014). Before forming collaborative groups, students need guidelines on how to act and what their responsibilities are within the group setting (Marzano, 2017). The teacher must decide which type of grouping is best for the desired outcome; this can be done by letting students choose their groups, teacher pairings of groups, or random selection of groups (Marzano, 2017). Once groups are formed, the students need a task to accomplish within the group; these can be preview tasks, practice skills, or reflection tasks (Marzano, 2017). Collaboration allows the

student to discuss new information, clarify misconceptions, and strengthen knowledge (Fisher et al., 2016; Marzano, 2017). Collaborating with pairs or small groups also allows students to formulate their thoughts and teaches proper communication and listening skills (Lemov, 2015).

Engagement. Marzano (2017) defined engagement as students who are paying attention, energized, intrigued, and inspired. Engagement is achieved when a lesson captures a student's imagination or taps into curiosity; engagement holds a learner's attention and allows for optimal learning to take place (Tomlinson, 2017). Students who participate in classroom activities learn and retain more information, engage in problem-solving and critical thinking skills, improve peer and adult communication skills, and have an overall better educational experience (Frisby, Berger, Burchett, Herovic, & Strawser, 2014). Students who are engaged show greater independence and can solve problems involving the application of new knowledge (Beasley, Gist, & Imbeau, 2014). Students are more likely to find school work pleasurable and to be more successful learning new information when they are engaged in activities they feel are worthwhile (Beasley et al., 2014). Increasing student engagement allows students to feel a more significant connection to the teacher and to the lesson, which increases student achievement (Kyoko, Troncale, Trucks, Calhoun, & Alvidrez, 2017).

Teachers need to design lessons with student engagement in mind; this allows teachers to meet students' desires without forgoing their educational development (Doubet & Hockett, 2016). Engaged students use strategic thinking, effective communication, decision-making skills, and higher-order thinking skills (Marzano, 2017). According to Sees (2012), producing an interactive, exciting classroom that

challenges students produces more attentive, engaged, and interested students. Tomlinson (2017) indicated through brain research and a better understanding of psychology; it is understood individuals have the greatest capacity for learning when they are moderately challenged. If a task is too difficult, learners will give up and retreat into protection mode; they will not continue with the task and learning will not take place (Tomlinson, 2017). Similarly, when content is not challenging enough, learners become disinterested and learning no longer takes place (Tomlinson, 2017). Tasks that are moderately challenging to one learner may be too difficult for another while being too easy for yet another student; therefore, it is the teacher's responsibility to adjust the difficulty of learning tasks to each student's ability for maximum learning outcomes (Tomlinson, 2017).

During classroom instruction, several EBPs can be used to boost engagement and participation such as response cards, group responses, drawing names, cold calling, using multiple types of questions, and paired responses (Helf, 2015; Marzano, 2017). These strategies allow students to understand participation is required (Marzano, 2017). Strategies such as response cards are designed to boost student engagement and enable the teacher to instantly assess the individual understanding of each student (Helf, 2015). Cold calling and drawing names ensure all students are prepared to answer, instead of depending on those who always raise their hands (Lemov, 2015).

Noticing when students are not engaged or responding. The first step to engagement is perceiving when students are not involved or responding to make sure students are on-task and on-track for learning (Marzano, 2017). Engagement is the effort, time, and energy students deliberately spend on educational activities (George, 2016).

These strategies involve teachers monitoring levels of participation of students, groups, and the whole class (Marzano, 2017). If students are off-task or not engaged in the content, the teacher must act to re-engage students (Marzano, 2017). Some students are disengaged because they feel apprehensive about being wrong or publicly humiliated in front of their peers; therefore, they do not participate in class activities (Frisby et al., 2014). Building positive student-teacher relationships and creating a positive, safe classroom environment alleviate student apprehension and engage students in classroom activities (Frisby et al., 2014).

Increasing response rates. Increasing response rates increases student attention (Marzano, 2017). Response rates are how often and how many students reply to a teacher's questions given appropriate wait time (Marzano, 2017). Wait time is the time allotted to allow students to think about an answer before the teacher probes students to be more engaged (Lemov, 2015). Wait time allows more students to come up with the solution, supports more accurate processing, decreases the number of incorrect answers, and increases the use of evidence to back up answers (Lemov, 2015).

Using physical movement. Using physical movement increases blood flow, energy, and student engagement (Marzano, 2017). Stevens-Smith (2016) stated, "While children are physically moving, they are developing neurological foundations that assist with problem-solving, language development, and creativity" (p. 723). The same part of the brain processes movement and learning; when a student is involved in both learning and movement, cognitive abilities improve significantly (Stevens-Smith, 2016). The EBPs that support using physical movement could be as simple as stretching or taking a dance break or could be more complicated like answering questions with various parts of

the body, stand up-sit down to explain an answer, move to four corners, dramatic acting, or body gestures (Marzano, 2017).

Maintaining a lively pace. Maintaining a lively pace throughout the lesson also keeps students engaged (Marzano, 2017). Students who are involved invest and achieve more than students who are disengaged with the content (Doubet & Hockett, 2016). To maintain an active pace, teachers may break instruction into segments, use pace modulation, use transition activities, and incorporate motivational hooks (Marzano, 2017). Teachers should establish a productive pace within their classrooms that utilizes a variation of direct instruction, guided practice, independent practice, assimilation of skills, and reflection, all while teaching bell-to-bell and utilizing every possible minute of class time (Lemov, 2015). Efficiently making every minute matter ensures teachers provide optimal productivity; teachers should start with an activity as students walk in the door to set the expectation for the class (Lemov, 2015).

Demonstrating intensity and enthusiasm. Demonstrating intensity and passion helps keep students intrigued and engaged (Marzano, 2017). Students perform better in environments where the teacher displays passion for the subject; teacher enthusiasm brings forth positive attitudes toward teachers, increases information recall, and improves classroom behavior (Natof & Romanczyk, 2009). Practices that demonstrate eagerness and intensity include using humor, relating to content with personal stories, using video and song clips or visual representations, and emphasizing the importance of the information and how it relates to real life (Marzano, 2017).

Presenting unusual information. Presenting unusual information intrigues the human mind and piques the interest of students (Marzano, 2017). When introducing

unique information, student engagement levels increase because the content becomes more interesting (Marzano, 2017). When students are engaged, they become more profound thinkers (Kyoko et al., 2017). Many techniques can be used to present noteworthy information such as giving fun facts, having students look up unique facts, introducing guest speakers, or assigning WebQuests. Mangelson and Castek (2008) stated WebQuests engage students while allowing them to use technology to think about issues, search for relevant information, review findings, and solve authentic problems.

Using friendly controversy. Using friendly controversy allows students to discuss and disagree civilly and enables students to be highly engaged (Marzano, 2017). However, it is crucial these discussions remain cordial, and students remain uncombative; this takes structuring from the teacher and practice (Marzano, 2017). Friendly controversy can be a comprehensive learning strategy for developing communication, promoting positive classroom discussions, enhancing subject-matter knowledge, creating argument and defense with researched sources, allowing students to analyze situations critically, and encouraging self-knowledge (Jagger, 2013; Marzano, 2017). Various forms of friendly controversy can be used to increase student engagement such as Socratic seminars, class debates, defending an opposing view, class votes, and class meetings (Marzano, 2017). Debating ethical issues also leads students into self-discovery and moral development when guided through the process of researching information to back up their arguments (Jagger, 2013). Unlike debate, Socratic seminars allow students to answer open-ended questions and discuss their thoughts on the material while either agreeing or disagreeing with another student's stance (Fisher et al., 2016). Marzano (2017) stated students readily engage in controversy activities because students find them

stimulating and fun; these strategies also help students understand the content better (Karadag, 2015).

Using academic games. Using academic games intrinsically engages students to find answers and become problem solvers (Marzano, 2017). Denham, Mayben, and Boman (2016) relayed there are academic benefits of game-based learning. However, there is a gap in the area of teacher training when it comes to practical implementation of game-based learning (Denham et al., 2016). Educational games allow teachers to compete with video games and other entertainment distractions (Kyoko et al., 2017). Games can be created to be played individually, in small groups, or as a whole class; games can also be played online, as board games, or as interactive whole class activities (Marzano, 2017). Games are a review tool more engaging than a traditional question-and-answer review (Denham et al., 2016; Marzano, 2017). Class review games can vary from Jeopardy-like games, question-and-answer quiz show games, Family Feud-like games, and other engaging games (Marzano, 2017). Karadag (2015) stated learning through games improves content mastery, uses higher-order thinking skills, and engages social skills; therefore, games are a highly effective way of learning content.

Providing chances for students to talk about themselves. Providing chances for students to talk about themselves builds better student-teacher relationships (Doubet & Hockett, 2016). There is a compelling correlation between student-teacher relationships and student success; therefore, getting to know students is an integral part of keeping students engaged (Doubet & Hockett, 2016). When students are actively engaged in talking about content and relating it to their lives and experiences, they strengthen connections between themselves and the learned material (Doubet & Hockett, 2016).

Allowing students time to talk about their own experiences engages students to contribute to classroom activities, allows students to feel comfortable, and helps students develop better self-image (Marzano, 2017). According to Frisby et al. (2014), developing positive interpersonal relationships with students helps alleviate anxieties associated with class participation.

Motivating and inspiring students. Motivating and inspiring students occurs when students have the opportunity to self-actualize and feel they are part of something more important than themselves (Marzano, 2017). Motivation happens when students are engaged and are choosing to interact with the material (Kuhn, 2007). There are several ways to encourage and motivate students to self-actualize including goal setting, using inspirational media, student-led projects, and growth mindset cultivation (Marzano, 2017). Having a growth mindset is the belief that with perseverance and effort, each person can learn and grow (Brock & Hundley, 2016). Tomlinson (2017) indicated the brain is malleable and intelligence is not a fixed trait received at birth; the brain can grow as a person learns and experiences new material. Learning changes the physiology of the brain; when new information is acquired, neurons in the brain develop and connect (Tomlinson, 2017). In contrast, when the brain is not being challenged and is not learning, the neurons atrophy and shrink (Tomlinson, 2017).

Growth mindset is based on Carol Dweck's 2006 theory that everyone can learn with the perseverance to keep trying and not give up when things get hard (Brock & Hundley, 2016). Having a growth mindset is knowing the brain is malleable and understanding everyone has the capability to learn (Marzano, 2017; Tomlinson, 2017). It

is important students understand it is ok to fail, but not trying should never be an option (Lemov, 2015).

Rules and procedures. After physiological needs, security and safety are next on Maslow's Hierarchy of Needs, and teachers can support those needs through well-constructed rules and procedures (Marzano, 2017; Skelsey Guest, 2014**).** Teachers should vocally announce, post, practice, and repeat all procedures for the classroom (Wong et al., 2014). When necessary, teachers should refer to procedures a student is not following, and with enough practice, procedures will become routines that make the flow of classroom activities more comfortable (Wong et al., 2014). Once rules and procedures are established, habits can be constructed through the use of regular routines (Rawlings, Bolton, & Notar, 2017). Powell (2015) stated effective teachers take time to create and instate useful routines. Well-established rules, procedures, and routines lead to proper classroom management and fewer discipline issues (Marzano, 2017; Rawlings et al., 2017; Wong et al., 2014).

Establishing rules and procedures. Rules and procedures give students structure and provide an environment conducive to learning (Rawlings et al., 2017). Effective teachers have procedures for everything that takes place within a classroom including the following: turning in homework, taking attendance, emergency preparedness, classroom jobs, lining up, leaving or entering the classroom, organizational skills, note-taking, and every other aspect of the classroom (Wong et al., 2014). Classroom procedures allow the classroom to run efficiently and effectively and cut down on behavioral issues (Wong et al., 2014). Rules, procedures, and routines should be established early in the year and adapted throughout the year as needed (Marzano, 2017). Routines and rules generate a

safe environment and maintain classroom order, which saves time and decreases classroom interruptions (Rawlings et al., 2017). Strategies to effectively implement rules and procedures start with establishing a small set of rules and procedures that include language students can understand (Marzano, 2017). Teachers should then explain the rules and expectations to students, post the rules in the room, model and role play correctly following the rules, and hold students accountable when they choose to break the rules (Marzano, 2017).

Organizing the physical layout of the classroom. Organizing the design and layout of the classroom enhances the perception of order and safety (Marzano, 2017). Classroom space should be inviting and practical; organization of materials, student work areas, and teacher areas should relay the impression a classroom is a safe place for learning (O'Hanley, 2017). The classroom should be set up, so students know where to find materials, books, and technology and know what items are off-limits (Marzano, 2017). Many teachers opt for seating charts at the beginning of each school year; this allows each student to know they have a home within the classroom (O'Hanley, 2017). Seating charts also help teachers learn student names at the beginning of each year (O'Hanley, 2017).

Demonstrating withitness. According to Marzano (2017), withitness means the teacher is aware of what is going on in the classroom at all times. Jacob Kounin coined the term withitness in the 1970s to refer to an instructor's ability to use observation skills to know what is going on in the classroom in order to minimize misbehavior (McDaniel, Jackson, Gaudet, & Shim, 2009). When demonstrating withitness, students are conscious the teacher is aware of their behavior, which allows for potential problems to be stopped

quickly (Marzano, 2017). Strategies used to demonstrate withitness include being proactive, preemptively avoiding potential issues, walking around the room, and maintaining eye contact with students (Marzano, 2017). With technology in the classroom today, withitness must take on another role of monitoring student computer activities and keeping students on-task (McDaniel et al., 2009).

Acknowledging adherence to rules and procedures. Acknowledging adherence to rules and procedures provides students with positive reinforcement and allows the students to know the teacher appreciates good behavior (Marzano, 2017). Teacher praise can influence academic and behavioral performance (Al-Ghamdi, 2017). Recognition can also promote a warm, loving classroom and foster student-teacher relationships (Al-Ghamdi, 2017). When students are acknowledged for completing tasks and behaving correctly, they are motivated to continue positive behaviors (Al-Ghamdi, 2017). Acknowledgment can take place in many forms including verbal affirmation, non-verbal affirmation such as a smile, tangible prizes, certificates, phone calls, emails, or notes home (Marzano, 2017).

Acknowledging lack of adherence to rules and procedures. Acknowledging lack of adherence to rules and procedures is equally important when preserving classroom management; these acknowledgments can include verbal or nonverbal cues, loss of privileges, discipline plans, relocating the student, or parent contact (Marzano, 2017). When possible, teachers should redirect disruptive behavior and follow with praise for conforming (Swinson, 2016). Appropriate discipline for disruptive behaviors allows the students to view the teacher as fair and influences students to accept consequences (Marzano, 2017).

Relationships. Students should feel valued, welcome, safe, and accepted by their peers and their teachers to be successful in the classroom (Marzano, 2017). Lemov (2015) suggested greeting students at the threshold of the classroom or school each day to set the expectations of the class and to build rapport with the students. Students should feel their teachers support them and care about them, as the student-teacher relationship is a prominent factor in student achievement (Mason, Hajovsky, McCune, & Turek, 2017). Interaction should take place outside of the classroom in the hall, before and after school, at lunch, and at school events; students need to know teachers care about them beyond the walls of the classroom (Burgess, 2012).

Students who feel valued and safe work harder and have fewer discipline issues (Mason et al., 2017). According to Hattie (2010), teacher relationships are greater than peer and parent relationships when it comes to academic motivation and achievement. Teacher rapport is associated with student motivation, participation, classroom management, and learning; effective teachers create a positive interpersonal relationship with their students, and in turn, the students are more willing and eager to perform classroom tasks and have less anxiety (Frisby et al., 2014).

Using verbal and nonverbal behaviors. Verbal and nonverbal behaviors let students know they are welcome and valued (Marzano, 2017). These practices include welcoming students at the door each day, holding informal conferences with students, attending after school functions, addressing students by their names, giving students special responsibilities, and using humor within the classroom (Marzano, 2017). Using physical behaviors such as high fives, fist bumps, smiling, and proximity also help students to feel accepted (Marzano, 2017). Even the simple act of smiling allows a

student to know the teacher is caring and compassionate, which creates a positive educational space and gives the student a sense of acceptance (Thompson, 2017). Fisher et al. (2016) specified students learn more from teachers with whom they have a positive relationship. Students who find their teachers to be uncaring, cold, or distant tend to be less motivated than students who feel they have caring, warm teachers (Mason et al., 2017).

Understanding students' backgrounds and interests. Understanding students' backgrounds and interests allows students to feel their accomplishments, interests, and hobbies are important to the teacher and classmates (Marzano, 2017). Understanding of students can be accomplished through student interest surveys, opinion questionnaires, individual or small group discussions with students, autobiographies, or grouping students according to their likes and dislikes (Marzano, 2017). Once a student's passions are revealed, lessons can be catered to include these interests and hobbies; teachers can also emphasize student accomplishments in personal areas of interest (Marzano, 2017). Getting to know students shows teachers care enough to understand them and care about their interests (Deiro, 2003).

Displaying objectivity and control. Displaying objectivity and control while being fair and without losing one's temper when students misbehave allows students to feel a sense of safety in the classroom (Marzano, 2017). A teacher who can respectfully and fairly discipline students is viewed as more caring than a teacher who loses his or her cool and yells at the class (Deiro, 2003). To maintain objectivity and control, a teacher needs complete self-reflection and assessment of personal triggers to control behaviors; an aggressive, angry teacher loses the respect of his or her pupils (Deiro, 2003; Marzano,

2017). Discipline should also be fair and take into consideration the needs of individual students (Marzano, 2017). Teachers should treat students equally when it comes to discipline and not show favoritism; favoritism leads to mistrust and loss of respect (Fisher et al., 2016).

Communicating high expectations. Expectations are what a teacher believes will or will not happen; expectations influence the achievement and success of students (Wong et al., 2014). As stated by Fisher et al. (2016), students often reach the teacher's expectations; if a teacher has low expectations, the students readily meet them and often do not go further. However, when teachers have high but realistic expectations, students often rise to the challenge and meet those expectations (Fisher et al., 2016). Teachers should set long-term goals and high expectations for their students (Powell, 2015). When a teacher has high expectations for students, the teacher interacts and challenges the students more than if a teacher has low expectations (Marzano, 2017). Communicating high expectations starts with convincing students they can learn and training students to have a growth mindset (Brock & Hundley, 2016; Goral, 2017). When teachers build strong relationships with students, it allows teachers to communicate high expectations for achievement and motivates students to strive to obtain those expectations (Powell, 2015).

Demonstrating value and respect for reluctant learners. Demonstrating value and respect for reluctant learners is accomplished by communicating expectations for all learners, using proximity, using differential verbal and nonverbal treatment, and making sure all learners understand the teacher respects and values them (Marzano, 2017). Circulating around the room and using proximity to get near students allows teachers to

ensure accountability, allows students to feel safe and respected, and helps to eliminate any behavior problems (Lemov, 2015). Lemov (2015) suggested teachers use their proximity when circulating to engage with students by quietly asking questions, checking over work, and encouraging them, all while systematically moving around the room to prevent problems and check in with students who may be struggling.

A teacher should also help students understand the brain can grow and learn; the brain is malleable and can acquire new knowledge (Brock & Hundley, 2016). Having a growth mindset is the belief the brain can learn new things, and through hard work, intelligence and talent can be developed (Brock & Hundley, 2016). Communicating growth mindset along with high expectations gives students the knowledge they can learn along with the expectation they should try their hardest (Goral, 2017).

Asking in-depth questions of reluctant learners. Asking in-depth questions of reluctant learners, requiring all students to know the same material, and respond with the same level of rigor; allows students to acknowledge the teacher expects the same from all learners (Marzano, 2017). To reach reluctant learners, a teacher must treat them no differently than highly motivated students who want to answer every question (Marzano, 2017). Teachers should encourage students to expand on answers and to back up their answers with evidence; teachers should also increase wait time and create a positive classroom environment where students are not afraid to give incorrect answers (Marzano, 2017). For optimal learning to take place, students need to feel safe both physically and emotionally and that they will not be ridiculed for incorrect answers (Swafford, Bailey, & Beasley, 2014). Positive interpersonal relationships with the teacher help students perceive the classroom as being a safe environment (Frisby et al., 2014).

Probing incorrect answers with reluctant learners. Reluctant learners need to understand it is acceptable to be incorrect; teachers need to guide students to the correct answers by giving an appropriate response to an incorrect answer, acknowledging portions of the answer that are correct, and allowing students to revise their answers (Marzano, 2017). Teachers should capitalize on student strengths and abilities as to not let students become disengaged; expectations should be in place to ensure students are aware that opting out of learning is not an option (Lemov, 2015; Marzano, 2017). Teachers should remind reluctant learners they can learn and while they may not understand a concept right away, they do have the ability to understand concepts eventually (Brock & Hundley, 2016).

Evidence-Based Practices

In the last 10 years, the term EBP has become a standard phrase in the education community (Foster, 2014). Evidence-based practices are grounded in available research, follow the values of learners, and incorporate the ideas of teaching professionals (Cook & Cook, 2016). Pre-service teachers need to learn the research behind EBPs, see examples and illustrations, and have a chance to utilize EBPs within a classroom setting during their time as students (Foster, 2014).

Too often teachers start their careers not knowing what to do because they have not been adequately trained in the use of EBPs (Lacey, 2015). It was the perception of Scheeler et al. (2016) that pre-service teachers do not receive enough instruction in evidence-based theories and practices; many novice teachers are only taught about EBPs but are not trained how to use them within a classroom. For first-year teachers to properly execute EBPs within schools, they need to use and learn these practices during

their teacher preparation programs (Foster, 2014). Research has indicated teachers will continually use the EBPs that helped get them through their first few years of teaching; therefore, it is imperative preparation programs accurately instruct pre-service teachers how to properly utilize a variety of EBPs (Scheeler et al., 2016).

Policy

Policymakers should use the best available evidence to make informed decisions about education policy (Detrich et al., 2016). There has been increased attention given to evidence-informed policy to create the systems that regulate teacher preparation programs (Detrich et al., 2016). Graduates of teaching academies should be capable of selecting and utilizing EBPs in the classroom to meet the individual needs of students (Scheeler et al., 2016).

To ensure teachers are prepared to teach in contemporary classrooms, the MODESE (2013) issued nine model standards based on EBPs for teacher preparation programs: 1) Content knowledge and methodologies aligned with instruction; 2) Understand and inspire student learning, growth, and development; 3) Implementing the curriculum utilizing current standards; 4) Teaching critical thinking, problem-solving skills, and performance; 5) Use student assessment data to analyze and adjust instruction; 6) Create a positive classroom learning environment and self-motivation; 7) Use verbal and nonverbal communication techniques; 8) Utilize professional collaboration with students, parents, school colleagues, and community members; and 9) Seek opportunities to grow and improve professionally. The MODESE has four highly critical standards for teacher preparation programs: content knowledge, differentiating instruction, using data

to inform instruction and classroom management required to be observed during coursework, and fieldwork of teaching candidates (Lacey, 2015).

Certification

Missouri offers several avenues for professionals to obtain their initial teaching certificates (MODESE, 2017b). An initial teaching certificate is a four-year license that requires participation in a two-year mentoring program, participation in a beginning teacher program, creation and completion of professional development plans, and completion of 30 hours of professional development within the four years (MODESE, 2017b). Once these requirements are met during four years of teaching, the teacher may request a career continuous certification (MODESE, 2017b).

The traditional route. The traditional certification route consists of attending four years of college, completing coursework and student teaching, passing college and state assessments (MODESE, 2017b). After graduating with a bachelor's degree in education, an initial teaching certificate will be issued (MODESE, 2017b). Fifty-seven colleges in Missouri have dedicated four-year education programs (NCES, 2017a).

The alternative route. The alternative certification route allows an individual with a bachelor's degree in a content area to teach in that content area under a two-year provisional teaching certificate (MODESE, 2017b). The individual must simultaneously take education courses to become certified (MODESE, 2017b). Those obtaining their certification through this route must complete at least 30 credit hours and pass the state assessment before obtaining their initial teaching certificate (MODESE, 2017b).

Other routes. Other routes to certification require applicants with a bachelor's degree in a content area to complete a program of study from the American Board of

Certification for Teacher Excellence and test into their subject area (MODESE, 2017b). Individuals who already have a doctoral degree in a content area may get an initial certificate after passing a professional knowledge state assessment (MODESE, 2017b). Teachers may also transfer teaching certificates obtained in other comparable states (MODESE, 2017b).

According to Sawchuk (2016), teachers who enter the teaching profession with alternative certification are twice as likely to quit in the first five years as are teachers who obtained their certificates through traditional four-year programs. Professionals who change careers and use their bachelor's degrees to become teachers may struggle within a classroom setting (Anderson, Fry, & Hourcade, 2014). Uriegas, Kupczynski, and Mundy (2014) stated alternatively certified teachers struggle with classroom management, time management, and student achievement. Students with first-year teachers from a four-year university regularly outperform students with a first-year teacher who is alternatively certified (Uriegas et al., 2014).

Coursework

First-year teachers who lack sufficient preparation are more likely to leave the profession than are teachers with proper training (Gourneau, 2014). Teacher education programs intend to prepare pre-service teachers, through coursework and fieldwork, to enter the classroom (Scheeler et al., 2016). Coursework may include EBPs, pedagogical theories, content knowledge, technology skills, and classroom management strategies (Sadiq, Ramzan, & Akhtar, 2017).

Differentiating Instruction

Differentiating instruction is one of four critical standards set by the MODESE (Lacey, 2015). Differentiated instruction means giving students multiple opportunities for learning new information, interpreting ideas, and articulating what they learn (Tomlinson, 2017). Differentiation requires a teacher to utilize limited resources while dividing one's time and self to effectually maximize the potential of all students (Tomlinson, 2017). Differentiation is needed because students enter school with a range of learning style preferences, attitudes about education, prior knowledge, vocabulary, reading proficiency, special needs, and distracting things on their minds (Marshall, 2016). Each child enters the classroom with different interests, learning readiness, and cultural backgrounds; the teacher must devise a way to teach the required curriculum to all students in such a way each student can be successful (Tomlinson, 2017).

One-size-fits-all instruction is not suited for a classroom with a diverse group of learners and needs (Mărghitan, Tulbure, & Gavrilă, 2016). When a teacher chooses to keep the class on the same page, it leads to below-level students becoming frustrated and shutting down while higher-achieving students become bored (Marshall, 2016). When the content is not appropriately challenging, students tend to check out psychologically; students who are struggling because the material is too challenging lose interest or give up (Hattie, 2010). At the same time, students who are not challenged enough become bored, so they find other things to occupy themselves and are no longer engaged in the content (Hattie, 2010). Differentiated instruction increases the chances of success for every student; students start where they are comfortable and build knowledge at their own pace (Mărghitan et al., 2016). Teachers need to take into consideration what each

diverse learner needs to be successful, then help each student reach his or her potential (Sees, 2012).

Students need differentiation to reach their full potential and maximize their learning experiences (Mărghitan et al., 2016). When students can learn at a deeper level or a faster pace, they may be ready for advanced learning opportunities that offer an intellectual challenge (Tomlinson, 2017). At the same time, teachers can modify assignments for students who are not understanding the content clearly or give them less-rigorous activities to complete while building up to more complex activities (Tomlinson, 2017).

Technology

The United States Department of Education expects educators to use technology to improve student learning and academic outcomes (Ashton & Davies, 2015). The use of technology alone cannot enhance the learning of students; however, teachers should understand the benefits of using technology to improve instruction (Karatas, Tunc, Yilmaz, & Karaci, 2017). Phu and Fade (2014) reported students who use technology when writing are more engaged, and their papers tend to be longer with fewer mistakes.

Technology opens new doors of learning for students and teachers; however, with classroom technology comes responsibilities, and students should be taught procedures for safe and accountable internet usage (Wong et al., 2014). Teachers should be able to efficiently facilitate and guide student learning in a technology-rich environment (Powell, 2015). Universities have the task of teaching new teachers to effectively integrate technology into classroom activities (Bakir, 2016). Modeling the use of different technologies within subject areas during content classes is an efficient way to teach the

use of technologies (Phu & Fade, 2014). Many universities offer courses in the use of technology and multimedia in instruction to prepare future teachers to enhance their classrooms (Bakir, 2016). However, a 2013 report by Project Tomorrow indicated many pre-service teachers felt their technology training focused too much on management tools and not enough on how to implement technology into the classroom (Phu & Fade, 2014).

Mangelson and Castek (2008) expressed teachers should not be competing with technology for a student's attention; instead, teachers should utilize available technology to enhance learning. Technology can be used to engage students, monitor learning progress, and provide skill building while incorporating 21st-century skills (Mangelson & Castek, 2008). However, the use of technology will not effectively enhance student learning if the teacher does not know how to implement the technology correctly and use it efficiently (Karatas et al., 2017). Therefore, it is imperative proper training is provided to pre-service teachers (Karatas et al., 2017).

Classroom Management

Student learning is significantly affected by classroom management and teacher behaviors; successful classroom management utilizes classroom space, implements classroom procedures, holds students accountable, and fosters positive classroom relationships (Akalin & Sucuoglu, 2015). Wong et al. (2014) stated classroom management consists of the procedures a teacher uses to sustain an effective and orderly learning environment. Rawlings et al. (2017) defined classroom management as the rules and procedures needed to produce an environment where learning can occur, as well as routines that ensure the safety of all students.

Classroom management does not just happen; effective teachers plan classroom management through procedures, set up, and expectations (Wong et al., 2014). Effective classroom management is created through consistency and reliability; students should know what to expect and what the teacher expects of them on a daily basis (Wong et al., 2014). Burgess (2012) asserted teachers should not merely develop techniques to control behavior problems; they should establish a system which avoids the misbehaviors altogether. To avoid behavior problems, students must be actively engaged, and the teacher needs to have a good rapport with all students (Burgess, 2012). Teachers who are skilled in classroom management preventatively address behavior issues and use intervention methods that allow students to manage the issues causing behavior problems (Ficarra & Quinn, 2014).

Pre-service teachers should be trained in classroom management skills to increase the success of students (Akalin & Sucuoglu, 2015). According to Ficarra and Quinn (2014), many teacher preparation programs inadequately teach classroom management strategies. Very few universities offer an entire course dedicated to classroom management techniques (Ficarra & Quinn, 2014). Due to insufficient training, many new teachers report feeling unprepared when instituting classroom management strategies (Christofferson & Sullivan, 2015). Rawlings et al. (2017) stated master teachers spend a significant amount of time and energy creating procedures and rules before each school year starts and a substantial amount of time at the beginning of the year establishing the routines; they also report having fewer discipline issues. According to Wong et al. (2014), the number one problem within a classroom is not discipline, but rather ineffective classroom management. Discipline is based on how a student behaves,

whereas classroom management relies on procedures, routines, expectations, and how students accomplish set tasks; therefore, a teacher must establish a set of procedures to follow from day one (Wong et al., 2014).

Parent and Community Communications

Teachers are a liaison of public relations among the community, parents, and the school (Powell, 2015). Welcome letters, classroom notes, phone calls home, emails, texts, and classroom web pages are all communication tools which encourage parent participation and foster positive parent relationships (Powell, 2015). Establishing positive parent relationships is vital in effective teaching (Wong et al., 2014). According to Kraft (2017), parent communication increases student productivity; more homework is completed, classroom behavior improves, and participation in classroom activities and discussions increases. Powell (2015) stated teachers should recruit community and family members to be involved in the teaching and learning process. Community members and businesses are an invaluable resource of support for educational needs, students, and families (Powell, 2015). Enhancing parent and community involvement within the classroom and schools promotes student success (Powell, 2015).

Fieldwork

Essential to teacher preparation is a variety of classroom experience (Bigham, Hively, & Toole, 2014; Powell, 2015). Opportunities to do fieldwork early in a teaching program may help students decide if teaching will be a proper fit for their lives (Paquette & Laverick, 2017). Pre-service teachers who have more extensive clinical training feel better-prepared and are more likely to stay in the profession (DeMonte, 2016; Ingersoll et al., 2014). Fieldwork, specifically student teaching, allows pre-service teachers to turn

theory into practice, develop classroom management strategies, and build an understanding of student needs (Bigham et al., 2014). Teachers frequently state the most beneficial part of their preparation program is field experience (Bieda, Sela, & Chazan, 2015).

New Teachers

Reality shock is used to describe new teachers when they enter the classroom and encounter the realities, stress, and responsibilities of being a teacher (Edwards & Nuttall, 2015; Fresko & Nasser-Abu Alhija, 2015). The pressure placed upon a new teacher can influence teaching capabilities, bring on feelings of inadequacy, and contribute to teacher attrition (Edwards & Nuttall, 2015). The demands placed on new teachers require teacher training programs to discover new ways to prepare graduates for the classroom (Kaufman & Ireland, 2016).

Teague and Swan (2013) suggested first-year teachers need training to transition from the role of student to the role of teacher and a massive amount of support from both their educational institutions and new employers. Mentor, induction, and other support programs can be effective in improving novice teachers' abilities and increasing retention rates when incorporated correctly (Sawchuk & Rebora, 2016). Pomerance et al. (2016) reported 70% of novice teachers who were part of a mentor program and met with their mentor teacher at least once a week felt it improved their teaching abilities.

For the last 40 years, 40-50% of novice teachers have left their jobs within the first five years (Gourneau, 2014). Teachers who obtain their certification through an alternative certification process have a higher rate of attrition than those who receive their certificate through a traditional method (Anderson et al., 2014). The reasons for leaving

vary and include insufficient classroom management and discipline skills, inability to organize class work, not understanding the use of assessments, inadequate planning, poor time management skills, not comprehending state standards, and failure to incorporate teaching strategies (Gourneau, 2014). High turnover of teachers leaves schools with high numbers of inexperienced teachers who struggle to provide quality instruction, which comes at the cost of student learning (Moore, 2016; Sawchuk & Rebora, 2016).

Summary

Beginning teachers are expected to graduate with a wide range of skills, including content knowledge, pedagogical knowledge, skills in planning, and abilities in managing students, all while remaining caring and supportive (Kaufman & Ireland, 2016). The responsibilities required of new teachers quickly become overwhelming (Gourneau, 2014). Teachers must learn to manage curriculum and student behaviors, maintain grades, learn the administrative processes, develop relationships with students and colleagues, and manage other school duties (Gourneau, 2014; Sawchuk & Rebora, 2016). It is essential pre-service teachers are well-prepared to become future educators (Feuer, 2015).

Teacher preparation programs are tasked with developing graduates who are effective in challenging settings (Kaufman & Ireland, 2016). One of the most influential aspects of student achievement is the teacher (Kaufman & Ireland, 2016). Therefore, teacher preparation programs need to train future teachers to effectively address the demands of teaching 21st-century skills such as critical thinking, problem-solving, cooperation, and communication within the classroom using EBPs that have been proven effective (Aslan, 2015; Foster, 2014).

Chapter Three includes a description of the methodology used in this study. A synopsis of the research, the population, and sample group are discussed. Finally, an explanation of data collection, the analysis, and ethical considerations are offered.

Chapter Three: Methodology

Chapter Three includes discussion of the processes and procedures used to formulate conclusions about the evidence-based practices taught in teacher preparation programs. This section covers the problem and purpose of this quantitative study. Included is a brief review of the research questions that are the focal point of the study. The methodology and design of the study are explained in detail. The population and sample are discussed. The instrument, a survey with Likert-type statements and open-ended questions, is introduced. An explanation is provided for data collection and analysis. Finally, ethical considerations and confidentiality measures are presented.

Problem and Purpose Overview

High numbers of novice teachers leave the profession early in their careers (Latham et al., 2015). The attrition rate of new teachers may be a reason to examine teacher preparation programs (Latham et al., 2015). First-year teachers are rarely fully prepared for all the tasks of a veteran teacher (Wong et al., 2014). This quantitative study was designed to gather the perceptions of first-year teachers regarding the EBPs taught in their preparation programs. The intention was to learn which EBPs best prepared first-year teachers for the classroom, as well as which EBPs may have been overlooked during the preparation program.

Research questions. The following questions guided the study.

1. Which evidence-based practices (EBPs) do rural first-year teachers believe they were most prepared?
2. What evidence-based practices (EBPs) do rural first-year teachers believe were missing from their teacher preparation programs?

3. What are the most difficult aspects of teaching identified by rural first-year teachers?

Research Design

This research is based on quantitative data obtained through an electronic, survey. The design of this study included open-ended questions (Creswell, 2014). Open-ended questions were added to the study to allow participants to give their unconstrained replies to questions (Creswell, 2014). The open-ended questions were coded for emergent themes and commonalities then translated into descriptive statistics.

Quantitative methods are used to obtain quantifiable data about the subject of research (Fraenkel et al., 2014). Quantitative surveys using Likert-type statements were used to determine which EBPs were taught within each participant's teaching program. Likert-type statements use a rating scale that allows participants to gauge perceptions, feelings, or knowledge (Sinaian, 2016). The survey included 10 Likert-type statements questions that required two responses each. Information obtained from the Likert-type statements provided insight into what was taught within teacher preparation programs and how prepared the participants felt utilizing each set of strategies.

Population and Sample

According to Creswell (2014), purposeful sampling is useful in deliberately selecting sites and participants to aid the researcher in comprehending the central phenomenon. Maximal variation sampling was used to add complexity to the research (Creswell, 2014). Participants were purposefully selected for maximal variation from a variety of rural schools and who graduated from a variety of Missouri universities.

The population of this study included all first-year teachers in Missouri schools. A population is a group of people with similar characteristics from whom data are collected (Creswell, 2014; Fraenkel et al., 2014). An ideal study would comprise the entire population of rural first-year teachers in Missouri; however, the vast unknown number and massive geographical area of the population makes completing this immense of a study unrealistic (Fraenkel et al., 2014). A sample is a subgroup of the population one plans to study (Creswell, 2014). The sample group in this study consisted of first-year teachers from rural Missouri schools.

Purposive sampling allows the researcher to choose participants from a population that holds unique characteristics; in this case, first-year teachers (Fraenkel et al., 2014). Participants consisted of first-year teachers from rural schools in south-central Missouri. Nonprobability sampling is used when the researcher selects convenient and available participants who represent characteristics for the study (Creswell, 2014). Convenience sampling is when participants are convenient, willing, and able to participate (Creswell, 2014). A minimum of 30 participants is also suggested to ensure validity in a causal-comparative research study (Fraenkel et al., 2015). The current study consisted of a convenience sample of 35 first-year teachers who completed the survey.

Instrumentation

The quantitative instrument utilized for this study was a Likert-type statements survey, and three open-ended survey questions (see Appendix C). Surveys are designed to collect a significant amount of data in a small amount of time (Oliver-Hoyo & Allen, 2006). Surveys were electronically distributed to the school email addresses of first-year teachers identified by building principals in rural south-central Missouri schools.

Emailing surveys is a quick way to collect data from a group that is widely dispersed (Creswell, 2014). The link to the survey was anonymous and did not collect email addresses.

A cross-sectional survey design was utilized in this research. A cross-sectional survey design collects data about opinions at one point in time (Creswell, 2014). Cross-sectional design can be useful when asking participants to evaluate a specific program (Creswell, 2014).

The surveys, based on the EBPs of Robert Marzano (2017), were used to obtain the insights of first-year teachers about their teaching preparation programs. According to Creswell (2014), surveys are used specifically to gather the opinions of participants. The researcher created the survey and open-ended questions with the aim of obtaining answers to the research questions. The survey elicited the perceptions of effective EBPs taught in teacher preparation programs, which may assist universities in the training of future educators.

Data Collection

After obtaining approval from the Lindenwood University Institutional Review Board (see Appendix A), the researcher contacted area rural school principals to obtain a list of first-year teachers and their corresponding school email addresses. Surveys were emailed to all identified first-year teachers. A large sample of the population was selected to minimize sampling error and to ensure the sample accurately represented the perceptions of the population (Creswell, 2014). Each identified first-year teacher received a consent form and an anonymous link to a survey.

Completing the survey was voluntary, and participants had the option to opt out at any time. A reminder email was sent three weeks after the surveys were initially delivered in hopes of obtaining optimal participation. Completed survey results were collected by a third party who redacted and coded all identifying information. All data will be destroyed three years after completion of the study.

Data Analysis

Once the surveys were collected and coded by a third party, the data were purified, and any incomplete surveys were disregarded from the analysis. Sinaian (2016) stated incomplete surveys may cause incorrect results or bias in the results. Incomplete data do not give an accurate representation of the population (Sinaian, 2016).

Descriptive statistics were drawn from the results of Likert-type statement surveys to show frequencies and percentages of answers. Descriptive statistics help a researcher explain trends and distribution of data (Creswell, 2014). Descriptive statistics summarize the information and determine the pertinent features of the data such as mean, median, and percentages (Sinaian, 2016). The Likert-type statements provided quantifiable answers about the number of EBPs taught within each participating teacher's pre-service program.

Survey questions were organized, and themes were pulled from coded data. Coding data allows the researcher to organize substantial amounts of data into smaller, more manageable portions (Sinaian, 2016). The coding process divides the text into segments and marks those segments to find commonalities (Creswell, 2014). According to Creswell (2014), a researcher analyzes data to determine themes, then uses those themes to formulate conclusions about a set of data.

To enhance the validity of the study, the researcher triangulated data when coding for themes, compared to the descriptive statistics, and quantitative data gathered from the Likert-type statements. Triangulation is a method of collaborating evidence through various sources (Creswell, 2014). The convergence of data from multiple sources makes triangulation a source of validity for research (Oliver-Hoyo & Allen, 2006).

Ethical Considerations

According to Fraenkel et al. (2014), when data are collected, they should be stored securely so no one else can access the information, with the exception of research assistants. As recommended by Creswell (2014), participants were provided with an overview of the study and what role the researcher would take. Furthermore, Fraenkel et al. (2014) suggested all participants should be confident all data and information collected would be kept secure. The method of confidentiality was explained, which focused on the anonymity of the individuals and university confidentiality at all times (Creswell, 2014).

Emails with the purpose of the survey were sent to the principals of all rural area schools to obtain the email addresses of first-year teachers. Then an Informed Consent Form (see Appendix C) was attached to each email reminding the participants the study was entirely voluntary, and they had the right to leave the study at any time without repercussions. The Informed Consent Forms explained the purpose of the study and any risks involved.

Links to an anonymous online survey were emailed to all first-year teachers identified by administrators. A third party collected all data, redacted all identifiable information, and then provided the researcher with coded documents. Each participant

was represented by a letter, and each university was assigned an alphanumeric code for identification purposes to further protect the identities of participants (Creswell, 2014).

To assure confidentiality, all printed documents were locked in a filing cabinet located in a secure room only accessible by the researcher. All electronic files were saved on a secure site on a password-protected personal laptop. A third party gathered surveys from a password-protected site and redacted identifiable information. Three years after the completion of the research study, all documents will be destroyed, per protocol.

To assure anonymity, names and email addresses were not attached to the surveys. Surveys were collected and coded by a third party. All identifying information was redacted to ensure the anonymity of the participants and the identities of the universities.

Summary

This study was designed to analyze which EBPs were taught within teacher preparation programs. The survey was also used to learn which practices first-year teachers were struggling to implement. The survey questions utilized quantitative Likert-type statements and data analysis methods to determine answers to proposed research questions.

The data analysis is presented in Chapter Four. The descriptive statistics and themes found in the research are discussed. The quantitative data from the Likert-type statements are discussed. Charts and tables are used to provide a detailed analysis of the findings.

The results and conclusions related to the research questions are found in Chapter Five. As a result of the findings, implications for future practice are suggested. Recommendations for additional studies are also discussed in Chapter Five, followed by a summary of the research study.

Chapter Four: Analysis of Data

This purpose of this study was to investigate the evidence-based practices implemented in teacher preparation programs based on the insights of first-year teachers. The goal was to determine what EBPs, pedagogies, and classes are most advantageous for new teachers. Three open-ended questions and 10 Likert-type statements were utilized to create a survey for novice teachers with the intent of discovering what EBPs best prepare first-year teachers for the classroom. Education graduates should be capable of understanding, selecting, and incorporating EBPs to improve student achievement (Scheeler et al., 2016).

According to Tucker and Stronge (2005), the most considerable influence on student achievement is the teacher; hence, quality educators are needed within the classroom. However, 50% of beginning teachers leave the profession before they fully develop their skills and become proficient educators (Ingersoll et al., 2014). Teachers who are not prepared are more likely to leave within their first few years than teachers who attended first-rate teacher preparation programs (Gourneau, 2014).

The purpose of this research was to determine what EBPs are taught within education preparation programs and what EBPs are most beneficial to novice teachers. Three research questions guided this research study. This chapter includes data gathered through surveys to answer the research questions.

Demographic Analysis

Data were collected from first-year teachers in rural south-central Missouri. The study involved 35 first-year teachers identified by building principals. Cover letters, surveys, and informed consent forms were emailed to 60 first-year teachers in south-

central Missouri. Data were obtained from 35 returned surveys. All participants were first-year teachers from grades K-12. The participants included 22 elementary-level teachers, 10 secondary-level teachers, and three teachers who teach subjects to K-12 students. Of the 35 participants, 28 teachers received their teaching certificates through traditional certification, while the other seven received their teaching certificates through alternative certification.

Quantitative Data

Time spent in PreK-12 classrooms as part of teacher preparation programs included all clinical field experiences such as observations and student teaching (see Table 1). Data indicated only one traditionally certified teacher and two alternatively certified teachers spent no time in classrooms completing clinical field experience. The majority of participants spent 100 or more hours in classrooms as part of their teacher preparation programs. Twenty-one traditionally certified teachers and three alternatively certified teachers spent 200 or more hours in classrooms completing clinical field experience.

Table 1

Total Time Spent in a PreK-12 Classroom

Number of hours in classrooms	Traditional teaching certification	Alternative teaching certification
0 hours	1	2
31-60 hours	0	1
100-125 hours	2	0
126- 150 hours	1	0
151-200 hours	3	1
200+ hours	21	3

Note. 35 total participants; 28 with traditional certification and seven with alternative certification.

The next survey question addressed time spent in PreK-12 classrooms student teaching (see Table 2). Data indicated the majority of traditionally certified participants spent more than 200 hours student teaching. Twenty of the 27 traditionally certified teachers spent 200 or more hours in a classroom student teaching. The majority of alternatively certified teachers spent less than 30 hours student teaching; one alternatively certified teacher spent 11-30 hours student teaching, while three alternatively certified teachers spent no time in a classroom student teaching.

Table 2

Total Time Spent Student Teaching

Number of hours in a classroom	Traditional teaching certification	Alternative teaching certification
0 hours	0	3
11-30 hours	0	1
31-60 hours	1	0
100-125 hours	2	1
126-150 hours	3	0
151-200 hours	2	1
200+ hours	20	1

Note. 35 total participants; 28 with traditional certification and seven with alternative certification.

The number of courses dedicated to classroom management are displayed in Table 3. Data indicated only three traditionally certified participants and one alternatively certified participant did not take a course devoted to classroom management. The majority of participants took only one course dedicated to classroom management. Six traditionally certified and two alternatively certified students took three or more courses dedicated to classroom management techniques.

Table 3

Number of Courses Dedicated to Classroom Management

Number of courses	Traditional teaching certification	Alternative teaching certification
0 courses	3	1
One course	13	4
Two courses	6	0
Three or more courses	6	2

Note. 35 total participants; 28 with traditional certification and seven with alternative certification.

The number of courses dedicated to teaching core content are shown in Table 4. Data indicated only one of the traditionally certified participants did not take a course dedicated to teaching core content. The majority of participants took three or more courses dedicated to teaching core content.

Table 4

Number of Courses Dedicated to Teaching Core Content

Number of courses	Traditional teaching certification	Alternative teaching certification
0 courses	1	0
One course	2	0
Two courses	2	2
Three or more courses	23	5

Note. 35 total participants; 28 with traditional certification and seven with alternative certification.

The number of courses dedicated to teaching and utilizing technology in the classroom are displayed in Table 5. Data indicated only one traditionally certified participant and two alternatively certified teachers did not take a course dedicated to teaching and utilizing technology in the classroom. The majority of all participants took only one course dedicated to teaching and utilizing technology in the classroom.

Table 5

Number of Courses Dedicated to Teaching and Utilizing Technology in the Classroom

Number of courses	Traditional teaching certification	Alternative teaching certification
0 courses	1	2
One course	14	4
Two courses	11	1
Three or more courses	2	0

Note. 35 total participants; 28 with traditional certification and seven with alternative certification.

Table 6 displays data for courses dedicated to theories and methodologies (EBPs) associated with teaching. Data indicated only two traditionally certified participants and one alternatively certified teacher did not take a course dedicated to theories and methodologies (EBPs) associated with teaching. The majority of participants who were traditionally certified took three or more courses dedicated to theories and methodologies. On the other hand, alternatively certified teachers greatly varied on how many courses were taken dedicated to theories and methodologies; three took only one course, one took two courses, and two took three or more courses focused on methodologies and EBPs.

Table 6

Number of Courses Dedicated to Theories and Methodologies (EBPs)

Number of courses	Traditional teaching Certification	Alternative teaching certification
0 courses	2	1
One course	7	3
Two courses	8	1
Three or more courses	11	2

Note. 35 total participants; 28 with traditional certification and seven with alternative certification.

Likert-type statements based on the 43 EBPs in 10 categories outlined by Marzano (2017) provided data about first-year teacher perceptions of pre-service education. Participants were asked to reply to each EBP with two answers to indicate how well the strategies were taught in their teacher preparation programs and how prepared they felt utilizing the same strategies within their classrooms. Participants completed a 22-question survey. Survey questions addressed EBPs taught within teacher preparation programs such as the following: providing and communicating clear learning goals, assessments, direct instruction, practicing and deepening lessons, knowledge application, student engagement, rules and procedures, relationships, communicating high expectations, and strategies that appear in all types of lessons. Each Likert-type statement question required two answers relating to whether the EBP was taught and how prepared the teacher felt implementing the EBP.

Participants were asked to answer questions about each identified EBP based on how well they were taught in their teacher preparation programs using the following scale:

1 = This was not taught within my program.

2 = This was only briefly touched on; very few of these practices were taught.

3 = This was adequately taught; several of these practices were taught.

4 = This was taught well; most of these practices were taught.

5 = This was taught in-depth, and the practices were covered in-depth.

For the second half of the survey, teachers were asked to answer based on how prepared they felt to utilize the same EBP within their classrooms.

1 = I do not feel prepared to utilize any of these practices in my classroom.

2 = I do not feel I can adequately utilize these practices in my classroom.

3 = I feel somewhat prepared to utilize some of these practices in my classroom.

4 = I feel well-prepared to utilize most of these practices in my classroom.

5 = I feel very well-prepared to utilize all of these practices in my classroom.

Survey question one: Providing and communicating clear learning goals. Providing and communicating clear learning goals includes creating and supplying students with grading scales and rubrics, tracking student progress and communicating progress with students, and celebrating student success when growth in progress is shown (see Table 7). Data indicated 26% of participants responded providing and communicating clear learning goals was only briefly touched upon in their teacher preparation programs**.** Another 26% of participants responded they were adequately taught in their teacher preparation programs.

Additionally, 17% of participants responded they were well-taught in their teacher preparation programs. Only 14% felt the EBPs were taught in-depth, while 17% of teachers did not respond. The survey also indicated 14% of participants felt they were inadequately prepared to utilize the same strategies within their classrooms. Another 34% of participants felt they were adequately prepared to utilize some of these practices within their classrooms, and 20% of participants indicated they were well-prepared to teach most of the EBPs. Only 3% indicated they felt very well-prepared to utilize all of the EBPs, while 23% did not answer.

Table 7

Providing and Communicating Clear Learning Goals

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	0	26%	26%	17%	14%	17%
How prepared you feel to utilize the same EBPs within your own classroom.	0	14%	34%	20%	9%	23%

Survey question two: Assessment. The EBPs include using informal assessments of the whole class to gauge how the class is performing, as well as creating and using formal assessments of individual students to direct further instruction (see Table 8). Data indicated 20% of participants responded assessments were only briefly touched in their teacher preparation programs. Another 23% of participants responded

they were adequately taught these EBPs in their teacher preparation programs, and 14% of participants responded they were well-taught most of the EBPs in their teacher preparation programs. Only 17% felt the EBPs were taught in-depth, while 26% of teachers did not respond.

The survey results also indicated 14% of participants felt they were inadequately prepared to utilize the same strategies within their classrooms. The most common response came from 37% of participants, who felt they were adequately prepared to utilize some of these practices within their classrooms. Only 14% of participants indicated they were well-prepared to teach most of the EBPs, 20% indicated they felt very well-prepared to utilize all of the outlined EBPs, while 14% did not answer.

Table 8

Assessment

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	0	20%	23%	14%	17%	26%
How prepared you feel to utilize the same EBPs within your own classroom.	0	14%	37%	14%	20%	14%

Survey question: Direct instruction lessons. The EBPs include chunking content into small, manageable increments; helping students to process content (with partners summarizing, comparing information, or relating new content to the real world);

and teaching students to record and represent content (notes, written summaries, graphic organizers, or mnemonic devices) (see Table 9). Data indicated 14% of participants responded direct instruction was only briefly touched upon in their teacher preparation programs. Whereas, 40% of participants responded they were adequately taught these EBPs in their teacher preparation programs. Another 14% of participants responded they were well-taught most of the EBPs in their teacher preparation programs. Only 9% felt the EBPs were taught in-depth, while 23% of teachers did not respond. The survey also indicated 11% of participants felt they were inadequately prepared to utilize the same strategies within their classrooms, and 40% of participants felt they were adequately prepared to utilize some of these practices within their classrooms. Only 17% of participants indicated they were well-prepared to teach most of the EBPs. Another 14% indicated they felt very well-prepared to utilize all of the outlined EBPs, while 17% did not answer.

Table 9

Direct Instruction Lessons

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	0	14%	40%	14%	09%	23%
How prepared you feel to utilize the same EBPs within your own classroom.	0	11%	40%	17%	14%	17%

Survey question: Practicing and deepening lessons. The EBPs include structuring practice sessions (modeling, working examples with students, demonstrating, or varied practice sessions), teaching students to examine similarities and differences, teaching students to examine errors in reasoning, and analyzing their reasoning or the logic of others (see Table 10). Data indicated 3% of participants feel deepening lesson EBPs were not taught in their preparation programs, and 14% of participants responded deepening lessons were only briefly touched upon in their teacher preparation programs. Another 26% of participants responded they were adequately taught deepening in their teacher preparation programs; 20% of participants responded they were well-taught most of the EBPs in their teacher preparation programs. Only 14% felt the EBPs were taught in-depth, whereas 23% of teachers did not respond. The survey also indicated 11% of participants felt they were inadequately prepared to utilize the same strategies within their classrooms, and 29% of participants felt they were adequately prepared to utilize some of these practices within their classrooms. Another 26% of participants indicated they were well-prepared to teach most of the EBPs. Only 17% indicated they felt very well-prepared to utilize all of the outlined EBPs, while 17% did not answer.

Table 10

Practicing and Deepening Lessons

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	3%	14%	26%	20%	14%	23%
How prepared you feel to utilize the same EBPs within your own classroom.	0	11%	29%	26%	17%	17%

Survey question five: Knowledge application lesson. The EBPs include engaging students in cognitively complex tasks (inquiry, problem-solving, invention, investigation, and critical thinking skills), providing students with resources and guidance (teaching students how to find their own answers and how to research), and teaching students to generate and defend claims (how to research an idea, form a claim, then back up the claim with evidence) (see Table 11). Data indicated 3% of participants feel knowledge application EBPs were not taught in their preparation programs, and 23% of participants responded knowledge application lessons were only briefly touched upon in their teacher preparation programs. Another 34% of participants responded they were adequately taught deepening in their teacher preparation programs, while 11% of participants responded they were well-taught most of the EBPs in their teacher preparation programs. Only 11% felt the EBPs were taught in-depth, and 17% of teachers did not respond. The survey also indicated 20% of participants felt they were

inadequately prepared to utilize the same strategies within their classrooms, and 31% of participants felt they were adequately prepared to utilize some of these practices within their classrooms. Another 17% of participants indicated they were well-prepared to teach most of the EBPs. Only 11% indicated they felt very well-prepared to utilize all of the outlined EBPs, and 20% did not answer.

Table 11

Knowledge Application Lessons

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	3%	23%	34%	11%	11%	17%
How prepared you feel to utilize the same EBPs within your own classroom.	0	20%	31%	17%	11%	20%

Survey question six: Strategies that appear in all types of lessons. The EBPs include previewing content (KWL, advanced organizers), teaching students to highlight critical information, reviewing content, teaching students to revise, teaching students to reflect on learning (exit slips, reflective journals), assigning purposeful homework, teaching students to elaborate on information, and organizing students for interaction (see Table 12). Data indicated 17% of participants responded strategies that appear in all types of lessons were only briefly touched upon in their teacher preparation programs,

and 26% of participants responded they were adequately taught strategies that appear in all types of lessons in their teacher preparation programs. Another 11% of participants responded they were well-taught most of the EBPs in their teacher preparation programs. Only 14% felt the EBPs were taught in-depth, while 31% of teachers did not respond. The survey also indicated 11% of participants felt they were inadequately prepared to utilize the same strategies within their classrooms, and 37% of participants felt they were adequately prepared to utilize some of these practices within their classrooms. Another 25% of participants indicated they were well-prepared to teach most of the EBPs. Only 17% indicated they felt very well-prepared to utilize all of the outlined EBPs, and 9% did not answer.

Table 12

Strategies that Appear in All Types of Lessons

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	0	17%	26%	11%	14%	31%
How prepared you feel to utilize the same EBPs within your own classroom.	0	11%	37%	25%	17%	9%

Survey question seven: Engagement. The EBPs include noticing when students are not engaged and reacting, increasing response rates, using physical movement, maintaining a lively pace, demonstrating intensity and enthusiasm, presenting unusual

information, using friendly controversy (debates, using facts to back up ideas), using academic games, providing opportunities for students to talk about themselves (interest inventories, connecting life events to content), and motivating students (see Table 13). Data indicated 3% of participants feel engagement was not taught in their preparation program. Nine percent of participants responded engagement was only briefly touched upon in their teacher preparation programs, and 11% of participants responded they were adequately taught deepening in their teacher preparation programs. Another 26% of participants responded they were well-taught most of the EBPs in their teacher preparation programs. Only 20% felt the EBPs were taught in-depth, and 31% of teachers did not respond. The survey also indicated 11% of participants felt they were inadequately prepared to utilize the same strategies within their classrooms, and 22% of participants felt they were adequately prepared to utilize some of these practices within their classrooms. Another 31% of participants indicated they were well-prepared to teach most of the EBPs. Only 26% indicated they felt very well-prepared to utilize all of the outlined EBPs, while 9% did not answer.

Table 13

Engagement

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	3%	9%	11%	26%	20%	31%
How prepared you feel to utilize the same EBPs within your own classroom.	0	11%	22%	31%	26%	9%

Survey question eight: Rules and procedures. The EBPs include establishing and enforcing rules and procedures, organizing the physical layout of the classroom, demonstrating withitness (ability to know what situation/behaviors are going on in the classroom and to deal with them appropriately), acknowledging adherence to rules and procedures, and acknowledging lack of adherence to rules and procedures (see Table 14). Data indicated 3% of participants responded rules and procedures were only briefly touched upon in their teacher preparation programs, and 20% of participants responded they were adequately taught rules and procedures in their teacher preparation programs. Another 23% of participants responded they were well-taught most of the EBPs in their teacher preparation programs. Only 23% felt the EBPs were taught in depth, whereas 31% of teachers did not respond. The survey also indicated 6% of participants felt they were inadequately prepared to utilize the same strategies within their classrooms, and 23% of participants felt they were adequately prepared to utilize some of these practices

within their classrooms. Another 43% of participants indicated they were well-prepared to teach most of the EBPs. Only 20% indicated they felt very well-prepared to utilize all of the outlined EBPs, while 8% did not answer.

Table 14

Rules and Procedures

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	0	3%	20%	23%	23%	31%
How prepared you feel to utilize the same EBPs within your own classroom.	0	6%	23%	43%	20%	8%

Survey question nine: Relationships. The EBPs include using verbal and nonverbal behaviors that indicate affection for students, identifying and understanding students' backgrounds and interests, and displaying objectivity to remain in control (staying calm, being fair, and self-monitoring behavior) (see Table 15). Data indicated 3% of participants feel relationships were not taught as part of their preparation programs, and 9% of participants responded relationships were only briefly touched upon in their teacher preparation programs. Another 20% of participants responded they were adequately taught relationships in their teacher preparation programs, while 11% of participants responded they were well-taught most of the EBPs in their teacher preparation programs. Only 20% felt the EBPs were taught in-depth, although 37% of

teachers did not respond. The survey also indicated 3% of participants did not feel prepared to utilize relationship EBPs, and 6% of participants felt they were inadequately prepared to utilize the same strategies within their classrooms. Another 26% of participants felt they were adequately prepared to utilize some of these practices within their classrooms, and 37% of participants indicated they were well-prepared to teach most of the EBPs. Only 26% indicated they felt very well-prepared to utilize all of the outlined EBPs, and 3% did not answer.

Table 15

Relationships

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	3%	9%	20%	11%	20%	37%
How prepared you feel to utilize the same EBPs within your own classroom.	3%	6%	26%	37%	26%	3%

Survey question 10: Communicating high expectations. The EBPs include demonstrating value and respect for reluctant learners, asking in-depth questions of reluctant learners, and probing incorrect answers with reluctant learners (see Table 16). Data indicated 6% of participants feel communicating high expectations was not taught in their preparation programs. Only 6% of participants responded communicating high

expectations was only briefly touched upon in their teacher preparation programs, and 29% of participants responded they were adequately taught this EBP in their teacher preparation programs. Another 17% of participants responded they were well-taught most of the EBPs in their teacher preparation programs. Only 11% felt the EBPs were taught in-depth, and 37% of teachers did not respond. The survey also indicated 3% of participants did not feel prepared to utilize communicating high expectations, and 22% of participants felt they were inadequately prepared. Another 20% of participants thought they were adequately prepared to utilize communicating high expectations within their classrooms, and 34% of participants indicated they were well-prepared to implement this EBP. Only 11% reported they felt very well-prepared to utilize all of the outlined EBPs, while 9% did not answer.

Table 16

Communicating High Expectations

	1	2	3	4	5	No Response
How well the EBPs were taught in your teacher preparation program.	6%	6%	29%	17%	11%	37%
How prepared you feel to utilize the same EBPs within your own classroom.	3%	22%	20%	34%	11%	9%

Research question data.

As recommended in Creswell (2014), transcripts were analyzed, and responses were coded based on the central singularity. Then, codes were narrowed into themes that appeared in the data (Creswell, 2014). Participants were asked to indicate the strengths and weaknesses of their training programs, as well as the most difficult aspects of teaching.

Response to research question one. The first question was designed to gain data as to the EBPs for which rural first-year teachers were most prepared (see Table 17). Answers were coded for similarities, and the following themes emerged: 1) Provide and communicate clear learning goals; 2) Create and utilize assessments; 3) Utilize direct instruction; 4) Practice and deepen lessons; 5) Understand and use strategies in lessons; 6) Engage students in the content; 7) Create rules and procedures; 8) Build student relationships; 9) Communicate high expectations; and 10) Address students of poverty. Of these, three themes emerged as the most predominant. Create rules and procedures was most quoted, with 11 teachers finding this as the strongest EBP of their preparation programs. The second-most prevalent theme was the importance of building relationships with students. Nine teachers believed building relationships was the most in-depth EBP taught in their education programs. Engaging and motivating students was the third dominant theme, with seven teachers citing this as a strength of their programs.

Table 17

Strengths of Education Programs

EBP	Number of teachers who accredited this EBP as a strength
Provide and communicate clear learning goals	3
Create and utilize assessments	1
Utilize direct instruction	1
Practice and deepen lessons	2
Understand and use strategies in lessons	4
Engage students in the content	7
Create rules and procedures	11
Build student relationships	9
Communicate high expectations	1
Address students of poverty	1

Note. Of 35 participants, some had more than one answer for a total of 40 responses.

Response to research question two. The second question was designed to gain data as to the EBPs rural first-year teachers believed were missing from their teacher preparation programs (see Table 18). Answers were coded for similarities, and the following themes emerged: 1) Provide and communicate clear learning goals; 2) Create and utilize assessments; 3) Utilize direct instruction; 4) Practice and deepen lessons; 5) Understand and use strategies in lessons; 6) Create rules and procedures (classroom management); 7) Communicate high expectations; 8) Knowledge of applications; 9)

Differentiation; and 10) No weaknesses. Of these, three themes emerged as areas of concern for which teachers reported they were least-prepared. The EBP least present was how to create or use assessments effectively. Eight teachers cited assessments as a weakness of their preparation programs. Six teachers felt classroom management was one of the weaknesses of their preparation programs. Motivating and engaging reluctant learners was the third-most dominant theme lacking in pre-service teacher preparation. Four participants did not indicate anything missing from their college preparatory programs.

Table 18

Weaknesses of Education Programs

EBP	Number of teachers who reported this EBP as a weakness
Provide and communicate clear learning goals	3
Create and utilize assessments	8
Utilize direct instruction	3
Practice and deepen lessons	4
Understand and use strategies in lessons	3
Engage students in the content	5
Create rules and procedures (classroom management)	6
Communicate high expectations	2
Knowledge of applications	1
Differentiation	1
No weaknesses	4

Note. Of 35 participants, some had more than one answer for a total of 40 responses.

Response to research question three. The third question was designed to gain information about the most difficult aspects of teaching identified by rural first-year teachers. Answers were coded for similarities, and themes emerged (see Table 19). Of these, the top-four areas with which teachers struggle the most included time management (n = 10). The second emerging theme was classroom management; seven teachers said they were struggling with implementing and sticking to the rules and

procedures they created. The third theme which emerged was engaging reluctant learners to participate; seven teachers cited engagement as a problematic aspect of the first year of teaching. Creating and using assessments to guide instruction was mentioned by five teachers as an EBP with which they struggled.

Table 19

Perceptions of the Most Difficult Part of Teaching

EBP	Number of teachers who accredited this EBP as a struggle for a first-year teacher
Create and utilize assessments	5
Practice and deepen lessons	2
Knowledge of applications	3
Understand and use strategies in lessons	4
Engage students in the content	7
Create rules and procedures (classroom management)	7
Build student relationships	3
Communicate high expectations	1
Other (time management)	10
Other (differentiation)	3

Note. Of 35 participants, some had more than one answer for a total of 45 responses.

Summary

Between 40-50% of new teachers leave the profession within the first five years of teaching (Gourneau, 2014). Once beginning teachers leave the role of students and become first-year teachers, they may become overwhelmed with responsibilities, classroom management, individual student needs, assessments, and other school duties (Gourneau, 2014). This study involved eliciting the perceptions of 35 first-year teachers. The data collection tools used were 10 Likert-type statements and three open-ended questions. The participants identified strengths and weaknesses within their teacher preparation programs as they pertained to EBPs. This study resulted in data about what novice teachers struggle with during their first year of teaching.

Data provided information to make implications and provide recommendations for future teacher preparation programs, as discussed in Chapter Five. Chapter Five includes the summary and conclusions of this study. Future research recommendations are also offered within Chapter Five.

Chapter Five: Summary and Conclusions

The purpose of this quantitative study was to determine the EBPs taught within teacher education programs of southern Missouri. An effort was made to identify which EBPs may be missing from teacher education programs and to determine what first-year teachers struggle with the most. Data for this study were obtained through surveys that contained both Likert-type statements and open-ended survey questions. The participants in this study were current first-year teachers in rural south-central Missouri. Three research questions guided the study.

Findings

Survey question one. Which evidence-based practice (EBP) do you believe you were most-prepared to implement?

One of the EBPs participants felt college preparation programs taught in-depth was creating rules and procedures for students to follow. Wong et al. (2014) stated effective teachers have rules and procedures for every activity which takes place throughout the school day. Establishing rules and procedures early on allows students to understand what is expected of them and provides an atmosphere advantageous to student learning (Rawlings et al., 2017). Teacher A felt creating rules and procedures was a part of every education course she took. Eleven of the 35 teachers surveyed noted the creation of rules and procedures was taught in-depth in their pre-service teacher preparation programs.

Another emerging theme participants felt prepared for was the importance of building relationships with students. Nine participants cited building relationships as a strength of their education programs. Students who feel valued, welcome, safe, and

accepted by teachers are more successful in the classroom (Marzano, 2017; Mason et al., 2017). According to Hattie (2010), when it comes to academic motivation and achievement, teacher relationships are far superior to peer and parent relationships.

The third theme which emerged was engaging and motivating students to learn; seven participants reported engagement was taught in-depth in their education programs. According to Tomlinson (2017), engagement captures a student's imagination, holds a learner's attention and allows for optimal learning to take place. Teachers should design lessons with student engagement in mind; teachers must connect with students' interests without forgoing educational needs (Doubet & Hockett, 2016).

Survey question two. Which evidence-based practices (EBPs) do you believe were missing from your teacher preparation program?

One of the emerging themes participants believed to be missing from their teacher preparation programs was how to create or use assessments effectively. Classroom teachers are expected to be knowledgeable in the development and utilization of assessments to inform instruction (Alkharusi et al., 2014; Hoaglund et al., 2014). Assessments should consist of a cycle of questioning, student response, collecting information on student learning, and then using that information to adjust teaching strategies (Ruiz-Primo and Furtak, 2006). In the survey, Teacher B stated, "Grading/grading scales were only briefly touched on during my time in a teacher education program." Teacher C specified, "I was missing knowledge on assessments and using data to drive my instruction." Eight participants cited assessments as an area of weakness within their teaching programs. To ensure teachers are prepared to teach, the

MODESE (2013) stated teachers should utilize student assessment data to analyze and adjust instruction.

The second emergent theme teachers felt was lacking in their preparatory programs was classroom management or implementing rules and procedures. Six participants stated classroom management as the EBP in which they were least-prepared and found the skill set of how to enforce rules and procedures missing from their programs. Teacher D wished she would have learned "Classroom management strategies that apply to real-life situations." Meyer (2016) stated new teacher graduates should have skills related to pedagogy, assessment, content knowledge, classroom management, and other aspects of teaching. Many new teachers report feeling unprepared when implementing classroom management strategies (Christofferson & Sullivan, 2015).

The third prevalent theme was motivating and engaging reluctant learners. According to Kuhn (2007), motivation occurs when a student is involved and willingly interacting with the material. Five participants indicated engaging reluctant learners was not adequately covered in their preparation programs. Teachers should capitalize on student strengths and abilities as to not let students become disengaged; expectations should be in place to ensure students are aware that opting out of learning is not an option (Lemov, 2015; Marzano, 2017).

Survey question three. What do you find to be the most difficult aspects of teaching?

Ten participants cited time management as one of the most challenging aspects of teaching. Teacher B stated, "The hardest part of being a first-year teacher is learning how to balance everything." Teacher E indicated, "There is not enough time for all that

needs to be covered." Du Plessis et al. (2015) reported inefficient time management as one of the reasons novice teachers leave the profession.

Classroom management, specifically implementing rules and procedures, was another problem area identified by the participants. Seven out of 35 participants mentioned classroom management as an area of difficulty in teaching; three of the seven were alternatively certified. Alternatively certified teachers often struggle with classroom management, time management, and student achievement, leading to higher attrition of alternatively certified teachers (Uriegas et al., 2014). One of the MODESE's four critical standards for teacher preparation is knowledge and use of proper classroom management (Lacey, 2015). Teacher F wrote:

> Although we did do a lot of classroom management things in college, I feel that they did not prepare us for the more difficult cases. For instance, I can make rules and enforce them, but what do you do when students simply don't care about school, their education, or the consequences of their actions? How do you do anything with these kids when no matter what approach you take, some students simply will not respond to you.

Ficarra and Quinn (2014) suggested teacher preparation programs do not teach classroom management strategies effectively.

The third area of difficulty for the participants was engaging and motivating reluctant learners. Teacher G stated, "I think the most difficult aspect of teaching for me is how to motivate students." Marzano (2017) conveyed students who are engaged in their learning use strategic thinking, enhanced communication skills, more efficient decision-making skills, and higher-order thinking skills. Marazano's suggestions require

teachers to formulate lesson plans with student engagement in mind (Doubet & Hockett, 2016).

The fourth area participants reported having difficulty with was creating and successfully utilizing assessments to guide instruction. Teacher H stated:

> I was missing knowledge on assessments and using data to drive my instruction. The most difficult aspect of teaching has been data collecting and using it properly. I also find it challenging to personalize learning. All students are on different levels which makes it challenging to guide common instruction.

Teacher I specified, "Assessments were barely touched, and we were also not exposed to different types of grading." Teacher K implied creating or finding proper assessments and tracking data from the evaluations was a struggle. Alkharusi et al. (2014) stated teachers should be adequately trained in administering, scoring, interpreting, and communicating assessment results to students. Assessment data should be used to customize instruction to each student's needs (Tomlinson, 2017).

In addition to these three main areas of difficulty, a few participants felt they needed more field experience as part of their teacher training. Often, new teachers state the most beneficial part of their teacher training program is student teaching (Bieda et al., 2015). However, a few teachers felt they needed more time in the classroom. Teacher B stated:

> There is so much more that goes into teaching that I didn't realize. I wish that instead of having regular college classes, the whole teacher ed program was set up like student teaching. I have learned way more from actually being in the classroom than I did in college.

Teacher D would also have liked more classroom experience before student teaching and entering the classroom. Powell (2015) expressed the more time a pre-service teacher spends in a classroom, the more prepared they will be for teaching.

Conclusions

The perceptions of first-year teachers about the EBPs taught in their educational training programs were gathered through electronic surveys distributed through Qualtrics. Open-ended questions were added to obtain further insight into the opinions and attitudes of first-year teachers. A Likert-type statement survey was employed to obtain quantitative data regarding the EBPs taught in teacher training programs, and the level of comfort first-year teachers felt using the EBPs. The survey was based on the 10 EBP categories outlined in Robert Marzano's (2017) *New Art and Science of Teaching: More than Fifty New Instructional Strategies for Academic Success*. The data gathered allowed the primary investigator to draw conclusions about the perceptions of first-year teachers.

Research question one. Which evidence-based practices (EBPs) do rural first-year teachers believe they were most prepared?

The participants felt their preparation programs taught the importance of engagement. Several participants also stated they were taught how to create rules and procedures. The importance of developing relationships was also taught in-depth.

Research question two. What evidence-based practices (EBPs) do rural first-year teachers believe were missing from their teacher preparation programs?

The participants reported they needed more instruction on how to create and properly utilize assessments to individualize student learning. Participants also felt they needed more guidance on how to enforce the rules and procedures they have established.

Several participants expressed they needed more training on how to engage students. Teacher K implied many EBPs were discussed as theories and the definitions were learned; however, pre-service teachers were rarely allowed time to put them into practice.

Research question three. What are the most difficult aspects of teaching identified by rural first-year teachers?

The participants were struggling in several areas as first-year teachers. The primary area was time management, as teachers were finding it hard to fit in all required content and assessments while also finding time for grading and lesson planning. Classroom management was also a struggle for the participants, who reported being able to implement and enforce rules and procedure was a problem area. Engaging and motivating reluctant learners was another area of concern for participants, as they indicated they covered the importance of engagement, but still lack confidence and the ability to utilize the EBPs surrounding engagement. Finally, assessments were a concern of the participants; teachers were apprehensive about their abilities to create and adequately utilize assessments to guide instruction.

Implications for Practice

The perceptions of first-year teachers regarding EBPs taught in teacher preparation programs were examined. The primary goal of a teacher preparation program is to provide pre-service teachers the essential skills needed to meet the needs of students; this is accomplished through coursework grounded in EBPs and fieldwork where pre-service teachers can gain experience and practice using EBPs (Scheeler et al., 2016). However, Sawchuk and Rebora (2016) stated first-year teachers often report feeling insufficient and unprepared when it comes to their first teaching assignments.

The data indicated teachers were taught the theories and definitions of the EBPs; however, they were not able to implement or practice the EBPs in real-life situations. This leads to participants feeling inadequate at implementing the EBPs within their classrooms. According to Scheeler et al. (2016), pre-service teachers do not receive enough practical training in EBPs; many novice teachers are taught about EBPs, but not trained how to use them within a classroom. The data indicated weaknesses within preparation programs that could be used to modify preparation program instruction. Areas of concern included the following:

- Creating and utilizing assessments to guide instruction
- Classroom management (enforcing rules and procedures)
- How to effectively engage and motivate reluctant learners
- Time management (how to successfully cover all required material)
- More time in the classroom completing fieldwork

The areas of concern revealed potential weaknesses in preparation programs. Teacher preparation programs must improve the instruction within their programs to enhance the quality of pre-service teachers (McMahon et al., 2015). Teacher education programs must ensure graduates are efficient and effective in the classroom to promote the academic success of the nation's students (Kaufman & Ireland, 2016).

Implications for this study include identifying areas of concern and perceived weaknesses identified by first-year teachers. The perceived weakness of using assessment data to modify classroom instruction and enhance student learning should be addressed in professional preparation programs. Pre-service teachers need to have the opportunity to analyze classroom assessment data through coursework and fieldwork.

Pre-service teachers need opportunities to work with student assessment data to modify instruction. Allowing pre-service teachers the opportunity to assess real student data to guide instruction will allow them to implement the theories learned in college and practice this much-needed skill. Giving pre-service teachers more time in the field to assess and utilize data is one suggestion for program improvement.

Another area of concern was classroom management, specifically, how to enforce rules and procedures. First-year teachers indicated their preparatory programs included classroom management methodology of how to create rules and procedures; however, many first-year teachers indicated they struggled with implementing and enforcing the rules and procedures. Pre-service teachers need to be given the opportunity to work with a variety of classroom behaviors. More time spent in an authentic classroom setting to address actual behaviors is suggested for program improvement.

Efficiently engaging and motivating reluctant learners was another theory emphasized in the respondent's preparation programs. Nevertheless, many teachers stated this was also an area they struggled with implementing. Vignettes and case studies may be examined within the college classroom, and viable options could be discussed. Pre-service teachers should work with struggling students, disenchanted students, and unmotivated students to apply theories learned in the classroom to real situations and students. More clinical experience is also suggested for teacher preparation improvement in the area of classroom management.

Several teachers indicated that more field experience would have been beneficial. According to Powell (2015), the more time they spend in a classroom, the more prepared pre-service teacher will be for their first teaching placement. Field experience will allow

pre-service teachers to comprehend issues that occur within a classroom, along with the tasks required of a teacher on a daily basis (Paquette & Laverick, 2017). It is recommended teacher preparation programs allow teachers to spend more time in the classroom with veteran teachers learning to implement the theories they learned in the college setting; including classroom management, engaging reluctant learners, and utilizing assessments to guide instruction.

The implications of these data coincide with the 1983 work, *The Reflective Practitioner*, by Donald Schön. Bertolini (2010) stated, "according to Schön, when confronted with situations of complexity, uncertainty, instability, uniqueness and value conflict professionals cannot just rely on technical rationality or advocacy. In such situations, then assumptions of objectivity and neutrality of technical rationality do not hold" (p. 597). Bertolini (2010) believed students lack sufficient opportunities to learn through cycles of "acting and reflecting" (p. 597). Marilyn Higgins of Edinburgh, Scotland, determined Schön's legacy is his emphasis on active reflection to foster creative solutions to link education or theory and practice (Bertolini, 2010). Many years after Schön's writings, a divide between what is theorized and what is engrained for everyday practice can still be found (Bertolini, 2010). Schön conveyed the complete contrast between the high ground of academia and the dilemma and uncertainties of the actual classroom (Bertolini, 2010).

The data suggest one must examine the difference between "knowing" and "experiencing" (Hébert, 2015, p. 361). While it is not the intent of academia to omit practice from post-secondary curriculum, the data from the study lead this researcher to conclude reflective practice of theory should be increased in teacher preparation

programs. Schön stressed teachers are confronted with situations of uncertainty and must respond by putting knowledge in action (Hébert, 2015). Additional classroom practice for degree-seeking, pre-service teachers may increase the ability to respond appropriately in complex or delicate classroom circumstances (Hébert, 2015).

For those teachers who have already obtained a teaching position, hiring schools should be mindful first-year teachers may struggle in the areas of classroom management, engaging reluctant learners, and utilizing assessments to guide instruction. Mentor programs should provide first-year teachers with tools to manage some of these issues. These topics should be integrated into professional development by hiring districts to ensure professionals go beyond expert knowledge to reach expert action (Kellenberg & Rieger, 2017).

Recommendations for Future Research

The results of this study may provide insight into first-year teacher perceptions of EBPs taught within teacher preparation programs; however, this would not be considered an exhaustive research study. This study included 35 participants from rural south-central Missouri schools; future studies could include first-year teachers from the entire state to dismiss any geographic bias. A comparative study could also be conducted to compare the perceptions of rural teachers to those in urban areas.

An examination of the perceptions of first-year teachers from each of Missouri's teacher preparation programs could also be conducted. A study comparing first-year teachers who obtained their teaching degrees through traditional certification versus those who received their degrees through alternative certification would add to the current research. Qualitative personal interviews are also recommended to gain unabridged

insight of first-year teachers. Future studies could influence preparation programs to assess and change teaching practices to address weaknesses perceived by first-year teachers.

Summary

This study was conducted to determine what EBPs were taught or missing from educational preparation programs. This quantitative study utilized open-ended questions and Likert-type statements to obtain the perceptions of first-year teachers about the EBPs taught within their respective preparation programs. Participants from this study included 35 first-year teachers from 46 rural public-school districts in south-central Missouri.

The conceptual framework of this research was founded on Robert Marzano's (2017) *New Art and Science of Teaching: More Than Fifty New Instructional Strategies for Academic Success*. Marzano's (2017) 43 EBPs were supported by John Hattie's (2010) meta-analyses, Carol Ann Tomlinson's (2017) ideas of differentiation, the methods of Doug Lemov (2015), and the designs of Harry Wong (Wong et al., 2014). Participants were asked to fill in Likert-type statements that best described their perceptions on how in-depth their programs taught each EBP. They were also asked to select their perceived level of preparedness to teach each EBP within their classrooms. The Likert-type statements were used to determine if specific EBPs were overlooked within education programs.

Participants were then asked to answer three open-ended questions pertaining to the EBPs they felt were covered in their programs, the EBPs they felt were missing from their programs, and what struggles they had as new teachers. These questions were used to get a better understanding of the perceived strengths and weakness of teacher

preparation programs, as well as significant struggles first-year teachers face. The literature review was used to validate the importance of the use of EBPs in the classroom and the importance of proper training in each EBP.

Data revealed the areas participants reported should be covered more in-depth within their instructional programs. Creating and utilizing assessments to guide instruction, classroom management strategies to enforce rules and procedures, and effectively engaging and motivating reluctant learners were the top EBP concerns of the participants. Time management, finding the time to cover all required material successfully, was cited as a difficulty by many participants. Several participants also voiced their desire to have spent more time in classrooms completing fieldwork, as they felt this was a valuable part of the training.

Appendix A

IRB Approval

LINDENWOOD

LINDENWOOD UNIVERSITY ST. CHARLES, MISSOURI

DATE:	March 27, 2018
TO:	Jamie Walker Davidson
FROM:	Lindenwood University Institutional Review Board
STUDY TITLE:	[1087437-1] An Examination of Evidence-Based Practice (EBP) in Teacher Preparation Programs for Rural School Educators
IRB REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	September 5, 2017
EXPIRATION DATE:	
REVIEW TYPE:	Exempt Review

Thank you for your submission of New Project materials for this research project. Lindenwood University Institutional Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Exempt Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to the IRB.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the completion/amendment form for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of .

Please note that all research records must be retained for a minimum of three years.

If you have any questions, please contact Michael Leary at 636-949-4730 or mleary@lindenwood.edu. Please include your study title and reference number in all correspondence with this office.

If you have any questions, please send them to IRB@lindenwood.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Lindenwood University Institutional Review Board's records.

Appendix B

Recruitment Letter to Principal

Dear Administrator:

My name is Jamie Walker-Davidson, and I am conducting a quantitative research study for my doctoral degree at Lindenwood University. The title of my study is, *An Examination of Evidence-Based Practice (EBP) in Teacher Preparation Programs for Rural School Educators*. I seek to determine the perceptions of first-year teachers about the level of preparedness they received from their universities.

I am asking for the participation of first-year teachers in rural south-central Missouri public schools. I would appreciate if you could assist me by providing me with the email addresses of all first-year teachers within your district. For the purpose of this study, first-year teachers are those new to the education field and beginning their first teaching placement.

If you have any questions about this research, please feel free to contact me via email or phone.

I appreciate you taking the time to complete this research survey.

Jamie Walker-Davidson
Doctoral Student, Lindenwood University
[redacted]

Appendix C

Survey

An Examination of Evidence-Based Practice (EBP) in Teacher Preparation Programs for Rural School Educators

About the Survey

This survey is being conducted across south-central Missouri by a doctoral candidate at Lindenwood University. The survey is designed to find the perceptions experiences and views of first-year teachers concerning teacher preparation programs and current experiences within the profession. This survey is part of a study designed to understand what features of teacher preparation programs are most effective in refining student outcomes. Your participation is important and will help the researcher better understand how to improve the education programs of future teachers.

1. **In fulfilling your requirements to become a teacher in Missouri, which university did you attend? Mark all that apply if you transferred while in a teacher preparation program.**

☐ **Missouri State University** ☐ **University of Missouri**

☐ **Drury University** ☐ **Evangel University**

☐ **College of the Ozarks** ☐ **Other _____**

2. **Through which route did you obtain your teaching certification?**

☐ **Traditional certification** ☐ **Alternate certification**

3. **In which field do you currently teach?**

Grade(s) _____ Subject(s) _____

4. **How much time did you spend in a PreK-12 classroom as part of your teacher preparation program?** Include all clinical field experiences such as observations and student teaching.

☐ **None**	☐ **1-10 hours**	☐ **11-30 hours**
☐ **31-60 hours**	☐ **61-99 hours**	☐ **100-125 hours**
☐ **126-150 hours**	☐ **151-200 hours**	☐ **Over 200 hours**

5. **How much time did you spend student teaching as part of your teacher preparation (one day is equal to 6 hours)?** Student teaching is defined here as experience taking full or partial accountability for a classroom with the supervision of a full-time classroom teacher.

☐ **None**	☐ **1-10 hours**	☐ **11-30 hours**
☐ **31-60 hours**	☐ **61-99 hours**	☐ **100-125 hours**
☐ **126-150 hours**	☐ **151-200 hours**	☐ **Over 200 hours**

6. **How many courses did you take that were dedicated to classroom management?**

☐ None ☐ 1 course ☐ 2 courses ☐ 3 or more courses

7. **How many courses did you take that were dedicated to teaching core content?**

☐ None ☐ 1 course ☐ 2 courses ☐ 3 or more courses

8. **How many courses did you take that were dedicated to using technology in the classroom?**

☐ None ☐ 1 course ☐ 2 courses ☐ 3 or more courses

9. **How many courses did you take that were dedicated to theories and methodologies associated with teaching?**

☐ None ☐ 1 course ☐ 2 courses ☐ 3 or more courses

The following section uses a Likert-type statements

For the first half of the survey, you will answer based on how well the following strategies were taught in your teacher preparation program:

1 = This was not taught within my program.

2 = This was only briefly touched on; very few of these strategies were taught.

3 = This was adequately taught; several of these strategies were taught.

4 = This was taught well; most of these strategies were taught.

5 = This was taught in-depth; add the strategies were covered in-depth.

For the second half of the survey, you will answer based on how prepared you feel to utilize the same strategies within your own classroom.

1 = I do not feel prepared to utilize any of these strategies in my classroom.

2 = I do not feel I can adequately utilize these strategies in my classroom.

3 = I feel somewhat prepared to utilize some of these strategies in my classroom.

4 = I feel well-prepared to utilize most of these strategies in my classroom.

5 = I feel very well-prepared to utilize all of these strategies in my classroom.

Taught in your preparation program / Your feelings of preparedness to teach

10.	**Not taught**	**Briefly touched**	**Adequately taught**	**Well taught**	**Taught in depth**	**Not at all prepared**	**Inadequately prepared**	**Adequately prepared**	**Well prepared**	**Very well prepared**
Providing and Communicating Clear Learning Goals –Create and supply students with grading scales and rubrics. –Track student progress and communicate progress with students. **–**Celebrate student success when growth in progress is shown.	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

Taught in your preparation program / Your feelings of preparedness to teach

11.	**Not taught**	**Briefly touched**	**Adequately taught**	**Well taught**	**Taught in depth**	**Not at all prepared**	**Inadequately prepared**	**Adequately prepared**	**Well prepared**	**Very well prepared**
Assessment –Use informal assessments of the whole class to gauge how the whole class is performing. **–**Create and use formal assessments of individual students to direct further instruction.	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

	Taught in your preparation program					**Your feelings of preparedness to teach**				
12.	**Not taught**	**Briefly touched**	**Adequately taught**	**Well taught**	**Taught in depth**	**Not at all prepared**	**Inadequately prepared**	**Adequately prepared**	**Well prepared**	**Very well prepared**
Direct Instruction Lessons –Chunk content into small, manageable increments. –Help students to process content (with partners summarizing, comparing information, or relating additional content to the real word). **–**Teach students to record and represent content (notes, written summaries, graphic organizers, and mnemonic devices).	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

	Taught in your preparation program					**Your feelings of preparedness to teach**				
13.	**Not taught**	**Briefly touched**	**Adequately taught**	**Well taught**	**Taught in depth**	**Not at all prepared**	**Inadequately prepared**	**Adequately prepared**	**Well prepared**	**Very well prepared**
Practicing and Deepening Lessons –Structure practice sessions (modeling, working examples with students, demonstrating, and varied practice sessions). –Teach students to examine similarities and differences. –Teach students to examine errors in reasoning and analyze their own reasoning or the logic of others.	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

	Taught in your preparation program					**Your feelings of preparedness to teach**				
14.	**Not taught**	**Briefly touched**	**Adequately taught**	**Well taught**	**Taught in depth**	**Not at all prepared**	**Inadequately prepared**	**Adequately prepared**	**Well prepared**	**Very well prepared**
Knowledge Application Lessons –Engage students in cognitively complex tasks (inquiry, problem-solving, invention, investigation, finding multiple ways to solve a problem, and critical thinking skills). –Provide students with resources and guidance (teaching students how to find their own answers and how to research). –Teach students to generate and defend claims (how to research an idea, form a claim, then back up the claim with evidence).	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

	Taught in your preparation program					/ Your feelings of preparedness to teach				
15.	Not taught	Briefly touched	Adequately taught	Well taught	Taught in depth	Not at all prepared	Inadequately prepared	Adequately prepared	Well prepared	Very well prepared
Strategies that Appear in All Types of Lessons –Preview content (KWL, advanced organizers, and skimming). –Teach students to highlight critical information. –Review content. –Teach students to revise knowledge (update and add to the information already learned). –Teach students to reflect on learning (exit slips, reflective journals, and comparing knowledge with other students. –Assign purposeful homework. –Teach students to elaborate on information. –Organize students for interaction.	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

	Taught in your preparation program					**Your feelings of preparedness to teach**				
16.	**Not taught**	**Briefly touched**	**Adequately taught**	**Well taught**	**Taught in depth**	**Not at all prepared**	**Inadequately prepared**	**Adequately prepared**	**Well prepared**	**Very well prepared**
Engagement –Notice when students are not engaged and reacting. –Increase response rates. –Use physical movement. –Maintain a lively pace. –Demonstrate intensity and enthusiasm. –Present and use unusual information to stimulate interest. –Use friendly controversy (understanding other's opinions, debates, and using facts to back up ideas). –Use academic games. –Provide opportunities for students to talk about themselves (interest inventories, student profiles, and connecting life events to content). –Motivate and inspire students.	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

	Taught in your preparation program					**Your feelings of preparedness to teach**				
17.	**Not taught**	**Briefly touched**	**Adequately taught**	**Well taught**	**Taught in depth**	**Not at all prepared**	**Inadequately prepared**	**Adequately prepared**	**Well prepared**	**Very well prepared**
Rules and Procedures –Establish and enforce rules and procedures. –Organize the physical layout of the classroom. –Demonstrate withitness (ability to know what situation/ behaviors are going on in the classroom and to deal with them appropriately). –Teacher should acknowledge adherence to rules and procedures. –Teacher should acknowledge lack of adherence to rules and procedures.	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

Taught in your preparation program / Your feelings of preparedness to teach

18.	Not taught	Briefly touched	Adequately taught	Well taught	Taught in depth	Not at all prepared	Inadequately prepared	Adequately prepared	Well prepared	Very well prepared
Relationships –Use verbal and nonverbal behaviors that indicate affection for students. –Identify and understand students' backgrounds and interests. –Display objectivity and remain in control (staying calm, being fair, and self-monitoring behavior).	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

Taught in your preparation program / Your feelings of preparedness to teach

19.	Not taught	Briefly touched	Adequately taught	Well taught	Taught in depth	Not at all prepared	Inadequately prepared	Adequately prepared	Well prepared	Very well prepared
Communicating Lofty Expectations –Demonstrate value and respect for reluctant learners. –Ask in-depth questions of reluctant learners. –Probe incorrect answers with reluctant learners.	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

Please answer the following three questions openly and honestly; your anonymity will be preserved.

20. Which evidence-based practice (EBP) above do you believe you were most-prepared to implement?

21. Which evidence-based practices (EBPs) above do you believe were missing from your teacher preparation programs?

22. What do you find to be the most difficult aspects of teaching?

Appendix D

Adult Consent Form

LINDENWOOD

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

An Examination of Evidence-Based Practice (EBP) in Teacher Preparation Programs for Rural School Educators

Principal Investigator: Jamie Walker-Davidson

Telephone: [redacted] E-mail: [redacted]

Participant: _____

Contact Information: _____

---

1. You are invited to participate in a research study conducted by Jamie Walker-Davidson under the guidance of Dr. Julie Williams. The reason for this study is to examine the insights of first-year teachers in rural south-central Missouri regarding their educational preparation from area universities. In an attempt to determine what practices and classes are most beneficial to new teachers, a survey will be administered to first-year teachers in hopes of learning how to better prepare new teachers for the classroom.

2. a.) Your participation will involve:

    - Filling out the electronic survey.
    - Submitting the survey.

    b.) The amount of time involved in your participation will be approximately 15-20 minutes.

3. Approximately 30-75 participants will be included in this research. Volunteers consist of first-year teachers from rural south-central Missouri schools.

4. There are no anticipated risks associated with this research because precautions are taken to protect the anonymity of the participants. Identifiable information will be removed by a third-party examiner to ensure anonymity of the participants and their universities. The third party will be a teacher at a Missouri school. Due to identifiable information being removed, there will be no harm to the participants. You will have access to this study once it is published.

5. The direct benefits for you participating in this study are minimal. However, your participation will contribute to the knowledge about effective practices of teacher preparation programs and may help future teachers. Potential benefits to society include information that may advance the education of future teachers.

6. Your participation is voluntary, and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

7. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study, and the information collected will remain in possession of the investigator in a safe location.

8. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Jamie Walker-Davidson, at [redacted] or the Supervising Faculty, Julie Williams, at [redacted]. You may also ask questions of /or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Marilyn Abbott, Provost, at mabbott@lindenwood.edu or 636-949-4912.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above by participating in the survey.

Appendix E

Cover Letter

Dear Educator:

My name is Jamie Walker-Davidson, and I am conducting a quantitative research study for my doctoral degree at Lindenwood University. The title of my study is, *An Examination of Evidence-Based Practice (EBP) in Teacher Preparation Programs for Rural School Educators*. I seek to determine the perceptions of first-year teachers about the level of preparedness they received from their universities.

I am asking for the participation of first-year teachers in rural south-central Missouri public schools. You are invited to participate in this study because of your status as a first-year teacher. I hope you are able to complete a short, 15-20 minute survey. Your responses will be confidential and completely anonymous. Following this letter is a consent form and a short survey. By completing this survey, you are signifying your voluntary consent to participate in this study. However, if at any time you feel uncomfortable, you may withdraw from participation.

If you have any questions about this research, please feel free to contact me via email or phone.

I appreciate you taking the time to complete this research survey.

Jamie Walker-Davidson
Doctoral Student, Lindenwood University
[redacted]

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Vita

Jamie Walker-Davidson is currently serving as a middle school teacher of language arts, reading, and journalism at Mansfield R-IV School District in Mansfield, Missouri. This is her 10th year in education, with the last eight at Mansfield Middle school. Jamie holds a Master's degree in Elementary Education from Missouri State University. She obtained her Bachelor of Science degree in Elementary Education with an emphasis in middle school language arts and social sciences from Missouri State University.