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Dedication

I'd first like to thank God for giving me the grit to keep moving forward, even in the face of some great challenges I've faced in this journey to obtain this degree. God has always shown me how I can use my gifts and talents to help others, teach students, and reach educators.

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ABSTRACT

While the literature supports the claim that instructional coaching is beneficial to classroom teachers in the improvement of their use of evidence-based strategies, there is not a plethora of research studies that have specifically applied coaching to trauma-informed strategies at the individual teacher level. The purpose of this single-case, Multiple Baseline Design study is to determine what effect coaching might have on teachers' use of a trauma-informed response strategy. Statistical and visual analysis indicates that it was effective and a functional relation was found between teachers' use of a trauma-informed response strategy and instructional coaching. Maintenance and Social Validity data were collected and analyzed as well. When coaching was provided to teachers on how to use a specific trauma-informed strategy, results indicated a functional relation and effect sizes, ranging from small to large, for the three classroom teachers. The implications of this study highlight the need for education administrators to consider incorporating coaching into their professional development models to assist teachers in implementing trauma-informed strategies. Limitations of this study were noted and the implications for future research were addressed.

Keywords: *coaching, *teachers, *trauma-informed intervention

CHAPTER 1: INTRODUCTION

Coaching in the Use of a Trauma-Informed Intervention

In response to the growing number of students with traumatic backgrounds, the topic of trauma-informed training has become increasingly popular over the last few years among educators and school leadership administrators (Chafouleas, 2018; COMPARISON REPORT, Education Commission of the States, 2020; Pierrottet, 2022). The number of students with histories of trauma living in Oklahoma is significantly higher than the National average (U.S. Department of Health and Human Services, 2013). The U.S. Department of Health and Human Services conducted a survey on residents who have experienced trauma. Of the participants who completed the survey, 21.7% of Oklahomans reported having at least two traumatic childhood events in their lives, compared to 14% of those nationwide. One study reported as much as 11% of children living in the United States have experienced, not only one traumatic childhood event, but various types of trauma (Greeson et al., 2011). As of 2015, a total of 14,855 children across the United States, from the age of birth to 12 years, and 10,834 children from ages 13-17 were receiving mental health services (Substance Abuse and Mental Health Services Administration,[SAMHSA], 2015).

The Rise of Childhood Trauma

A seminal study defined the term "adverse childhood experiences" (ACEs) (Felitti et al., 1998). Felitti identified seven types of ACEs that adversely affect children's daily functioning and mental health as adults. The seven types of ACEs are (1) psychological, (2) physical, (3) sexual, (4) violence against mother, (5) living with a substance abuser, (6) living with a mentally ill parent or caregiver, (7) living with a caregiver or parent who has been incarcerated. This study linked ACE scores on a questionnaire with adult mental and physical health risk factors such as

cardiac disease, suicide, depression, drug, and alcohol abuse, and even cancer. People with more than four ACEs were four to 12 times more likely to develop one of these mental or physical risk factors and can demonstrate more maladaptive behaviors than others (Cook et al., 2005). This stress can lead to self-harm, violent outbursts of aggression, oppositional defiant behavior, and drug or alcohol abuse in any environment, including the classrooms (Cook, et al., 2005; Minchew et al., 2013). Teachers see this manifest in their students' behavior in the classroom (Brunzell, Stokes, and Waters, 2019; Greenwald et al., 2012; Roche et al., 2019). Approximately 80% of teachers have reported at least one incident of violence occurring in the classroom, and more than 50% of them reported also experiencing property damage, harassment, and physical attacks by students (McMahon et al., 2014; Minchew et al., 2013). Researchers have developed what is coined "experiential avoidance" behaviors, which is a general unwillingness to actively experience internal feelings and thoughts, which leads to increased psychological stress (Roche et al., 2019). Results from a study of children receiving care at an urban child trauma center revealed that 58% of those children with at least one traumatic stressor exhibited violent or unsafe behaviors (Buxton, 2018). This has stimulated intense interest by educators in how to best provide early intervention for youth who have been victimized by trauma to prevent further risky behavior and train teachers to utilize trauma-informed strategies in the classroom (Gilkerson et al., 2013; Pierrottel, 2022).

Teacher training in trauma-informed strategies has never been more important, especially since the pandemic in 2020. Between April 2020 and June 2021, more than 140,000 children in the US lost a caregiver to COVID-The loss of a parent or caregiver is a traumatic event in a child's life (Hillis et al., 2021). The negative effects that trauma has on student outcomes are also a growing concern for educators (Cook et al., 2005; Ernest, Reaves, and Smith, 2022; Mills,

2022; Rajaraman et. al, 2022; SAMHSA, 2014; Segal & Collin-Vezina, 2019). Experiencing

even one traumatic event may have a negative impact on a student's attendance in school, Grade

Point Average and overall academic achievement (Leiter, 2007). Teachers are challenged to

respond to the growing need of student with a history of trauma and has led to an increase in

focus on professional development using trauma-informed strategies. However, student

outcomes will likely not improve unless school systems invest in teacher training that is effective

at improving their pedagogical competence (Robinson et al., 2017).

Recently State and Local Education Agencies have offered more resources on these

behavior strategies and interventions. As of September 2020, at least 27 states and the District of

Columbia have state statutes or regulations in place requiring or encouraging teacher

professional development on student mental health and trauma-informed practices

(COMPARISON REPORT: Education Commission of States., 2020). An internet web search

for trauma training from the Oklahoma State Department of Education website resulted in two

recent symposium training for Oklahoma-certified teachers and administrators. In 2020, OSDE

hosted a Trauma Summit entitled "Bridges to Hope: Teaching in the Shadow of Trauma" led by

Dr. Bruce Perry from the Child Trauma Academy. The Office of Student Support provided two

trainings on trauma-informed practices that focused on (a) understanding the basics of trauma

and learning and (b) classroom implementation and strategies (Perry, 2020). These trainings

primarily focused on foundational information on trauma and its effect on children's learning

and development. While the literature on the use of trauma-informed practices suggests that this

type of training may enhance teachers' understanding of the negative effects trauma has on

children's development, it is unclear how teachers translate that training to daily instructional

practice in the classroom. Teacher training on evidence-based practices has recently married the

trauma-informed intervention model with the behavior skill training model of behavior analysis (Mills, 2022). School district administrators have recently utilized behavior analysts and other professionals to provide coaching to teachers in the classroom in using trauma-informed strategies with fidelity (Rajaraman et al., 2022). The use of behavior specialists to assist teachers with trauma-informed strategies has grown in popularity; however, educators continue to use disciplinary action that is punitive in nature (Mills, 2022).

Trauma-Informed Professional Development

Education policies and procedures have been developed to aggressively respond to more serious, dangerous behaviors like school shootings and other violent behavior and to ensure the safety of the student body (McGruder, 2019). These "Zero-tolerance" disciplinary policies frequently result in the removal of students from the learning environment. The Office for Civil Rights collected data on school discipline across the United States and published a report that highlighted the disparity of discipline given to students from certain populations. Of those surveyed, at least 48% of African American students in preschool were suspended at least once in a school year, compared to 43% of Caucasian preschool students. Up to 25% of all students who were referred to law enforcement by school officials were students with disabilities (Office for Civil Rights [O.C.R.], 2014). The American Psychological Association formed a Zero Tolerance Task Force in 2008 to review the use of these punitive disciplinary practices and the effect their over-use may have on student outcomes (American Psychological Association [A.P.A.], 2008). The Task Force found no evidentiary support for the use of zero-tolerance policies in response to student misbehavior, or for an increase in the safety of the student body overall. These punitive policies neglect the focus on student mental health and may be perpetuating more antisocial behaviors through re-traumatization (Sedillo-Hamann, 2022). The

challenge of addressing student behavior in a way that aligns with trauma-informed strategies is one problem in practice targeted in this study.

Trust-Based Relational Intervention (TBRI®)

It is critical that educators receive professional development in trauma-informed practices to better expand their instructional pedagogy in behavioral interventions rather than resort to using punitive discipline. One trauma-informed professional development model that is gaining in popularity in Oklahoma is the Trust-Based Relational Intervention (TBRI®) model (Purvis, Cross, Jones, and Buff, 2012; Purvis et al., 2009; Reid et al., 2018). This model addresses how classroom teachers can properly respond to trauma-induced behaviors. Strategies in this trauma-informed model will be the focus of this dissertation.

A Problem in Research and Practice

The first problem in practice for education administrators is how to effectively train teachers in using trauma-informed strategies. Recognizing the signs and symptoms of children with histories of neglect or abuse is the first step to appropriately responding to student behavior (Bartlett et al, 2015; Bell et al., 2013). For example, a student who is overly sensitive to movement and sounds may be experiencing hyper-vigilance but may be characterized by teachers as disrespectful and defiant. When a child exhibits these behaviors in the classroom, without proper training, the classroom teacher may respond with punitive discipline (Institute on Trauma and Trauma-Informed Care, 2015).

The second problem in practice is that many educators are still trained using traditional, didactic, "sit-and-get" workshops that are not effective at improving teachers' use of instructional strategies (Boudah & Mitchelle, 1998; Desimone et al., 2002; Reierson & Becker,

2021; Wei et al., 2010). For decades, the literature on the professional development of teachers has demonstrated that traditional, 1-day workshop models of trainings have been less effective than other professional development models, and often leaves teachers feeling ineffective (Walsh et al., 2020), especially compared to professional development models that include additional components, such as coaching (Boudah et al., 2003; Peltola, 2017). Teachers need to see trauma-informed interventions work in the classroom, before they fully invest energy and time in learning to implement them (Duffy & Comly, 2019; Rejerson & Becker, 2021).

The Need for a Coaching Component in Using Trauma-Informed Practices

The problem in research is a gap in evidentiary findings on how instructional coaching has been used to train teachers to use trauma-informed strategies. Single-case research design has a rich history of often being used as experimental methodology in the instruction of teachers on evidence-based practices (Fallon et al., 2018), but not necessarily those that are trauma-informed. Fallon, Kurtz, and Mueller studied the effectiveness of single-case research applications on the coaching of behavioral interventions and found that results ranged from moderate to strong functional relational effects. This could be attributed to the fact that coaches model the intervention, which allows the trainees to observe its implementation and engage in supervised practice. How individual teachers respond to instructional coaching may be as important as studying the benefits of coaching larger groups of teachers in a group experimental design.

Currently, there is not a lot of published research on teacher training in trauma-informed practices that utilize a single-case research design. For this study, only 26 studies focused on coaching and improved teacher instructional practices, but none of them targeted teacher training on the use of trauma-informed strategies. The purpose of this study is to analyze the effect

instructional coaching may have on teachers' use of trauma-informed strategies and interventions in the classroom.

Research Questions and Purpose

The purpose of this research is to investigate how coaching might affect a teachers' instructional practices even after already attending annual professional development on trauma-informed practices. Additionally, the purpose of this research is to analyze the factors and variables that might affect these three teachers' use of the strategy and whether they value the coaching as a model. Lastly, the investigator wishes to investigate if and how the teachers' use of the instructional strategy might have on his/her classroom characteristics. The intent is to answer the following questions:

Question 1: Will the addition of an instructional coaching component demonstrate a functional relation to improved teachers' use of trauma-informed strategies?

Question 2: Will participating teachers rate the inclusion of the coaching component as beneficial at increasing their feelings of self-efficacy in their implementation of the strategies?

Question 3: Will the increase in teachers' use of these trauma-informed strategies have a positive effect on the overall attendance rate of his/her students?

Question 4: Will an improvement in teachers' implementation of trauma-informed strategies result in a reduction in his/her office referral and/or suspensions of students with challenging behavior?

Definition of Terms

Adverse childhood experiences (ACES): Life events that adversely affect children's daily lives, functioning, and mental health as adults (Felitti et al., 1998). The seven types of ACEs are (1) psychological, (2) physical, (3) sexual, (4) violence against mother, (5) living with a substance abuser, (6) living with a mentally ill parent or caregiver, (7) living with a caregiver or parent who has been incarcerated.

Trauma-informed strategies: Strategies that create a sense of felt safety and security for students in their education environment that focus on removing, minimizing, or neutralizing any perceived traumatic or harmful experiences (SAMSHA, 2014). These strategies are based on acknowledging the personal traumatic experiences of students, and the effects variables such as race, gender, class, and other variables may have on students (Hurless & Kong, 2021).

Instructional Coach: A professional who provides primary support, information and modeling of evidence-based-practices in pedagogical and content through observation, goal setting, modeling, and providing performance feedback (Joyce & Showers, 1995; Knight, 2009).

IDEAL: An acronym coined in the TBRI® literature that stands for "*immediate, direct, efficient, action-based, and leveled*".

Self-Efficacy: The sense of one's own capabilities to perform necessary tasks and actions and use problem-solving strategies (Kurt et al., 2012).

Overview of the Dissertation

This dissertation begins with presenting information and research on adverse childhood experiences, and the gradual increase in children with ACEs experiencing difficulties in the

classroom, which has led to a heightened focus on the professional development of teachers in trauma-informed practices. Additionally, the introduction outlines the overall problem in practice, which is the often-ineffective professional development training that teachers typically receive. This is despite evidence that models with instructional coaching, which results in improved implementation of instructional practices *and* enhanced self-efficacy of teachers. All participants in this study have participated in trauma-informed traditional, didactic 1-day workshop training. This research aims to study if teachers increase and improve their use of this strategy after receiving instructional coaching.

The second chapter is a thorough review of the literature on trauma-informed practices, teacher professional development, and the use of coaching. A theory of action which supports the rationale behind this research study follows. The fourth chapter focuses on the methodology used in this study, which includes participant information, experimental design, materials, data collection procedures, and statistical analysis of data. Chapter five outlines the findings of the data analysis on all dependent variables to address all research questions. The last chapter is an overall discussion and summary of the dissertation research and the implications of findings and possible focus of future research.

CHAPTER 2: REVIEW OF THE LITERATURE

A review of the literature for the purposes of this study reviews the need for trauma-informed professional development in our school systems and focuses on a) the increase in children with adverse childhood experiences in schools, b). the use of coaching in the professional development of teachers to improve practice, and c.) trauma-informed professional development models. These areas will be explored in terms of concept, components related to this study, and research design.

The Rise in Childhood Trauma

The increase in youth who have been neglected or abused has consequently increased the need for appropriate mental health services (Sedlak et al., 2010). The Fourth National Incidence Study of Child Abuse and Neglect for 2009-2010 noted an incidence of 1.25 million children, or one in 58 children, who experienced maltreatment between January 2005 and January 2006. More recently, a total of 14,855 children from the age of birth to 12 years, and 10,834 children from ages 13-17 were receiving mental health services as of 2018 (SAMHSA, 2015.). A large portion of the research on childhood trauma comes from studying children within the foster care system. Many children in state foster care have experienced severe abuse, neglect, often perpetrated by primary caregivers (Sedlak et al., 2010). A single event or series of events of this nature typically results in removal from the home into the foster care system. "Complex trauma" refers to repeated victimization in at least two or more of the following traumatic experiences: sexual abuse, physical abuse, emotional abuse, neglect, or domestic violence (Cook et al., 2005; Greeson et al., 2021; Kisiel et al., 2009). Some studies have reported more than 11% of children in the United States have experienced all five types of complex trauma, which are physical abuse, sexual abuse, emotional abuse, neglect, and domestic violence (Greeson et al., 2011.)

With such a high number of school-age students who have histories of trauma, educators are seeing the adverse effects it has on their cognitive, language, behavior, and overall development (Segal & Collin-Vezina, 2019). The statistics on student achievement, attendance. and discipline for those who have experienced trauma is alarming (O'Neill, Guenette, and Kitchenham, 2010). Some studies show up to 13% of children, age 0 to four have repeated preschool, and moved to different schools at least three times. 48% of those students have been identified and served under special education, and 27-40% are characterized by caregivers and

teachers as performing poorly academically (Miller & Flynn, 2013). This same study found that 22% of students, ages 10-15 years repeated at least one grade, and 68% of those students moved schools at least three times. 63% of those students were receiving special education as well.

The school performance trajectory for these students is not promising. After the advent of a traumatic event for a student, teachers typically see an increase in absenteeism, a reduction in Grade Point Average (GPA), and a decrease in overall academic achievement (Leiter, 2007). Students with histories of trauma often enter the classroom dysregulated and remain disengaged, which can be a challenge for teachers (Brunzell et al., 2019; Khalid, 2019). Living through traumatic events, children develop maladaptive, disruptive behaviors in a "fight, flight, or freeze" manner which can escalate behavior (Emerson, 2022) and can frustrate teachers. Still schools serve as a prime resource of intervention and support for children with histories of trauma (Chafouleas et al., 2018), and research and policies are encouraging or mandating public schools to screen for, provide support to, and address mental health needs of these traumatized children (Department of Health and Human Services, [D.H.H.], 2013; Gilkerson et al., 2013; Stein et al., 2003).

Trauma-Informed Professional Development

Trauma-informed approaches represent strategies that are both preventative and responsive to students who have experienced trauma by (1) realizing the damaging effects trauma can have on a child's development and well-being, (2) accurately identifying signs that a student may be experiencing or has experienced trauma, and (3) responding to the child in a way that promotes felt-safety and security without re-traumatizing them (Anderson, Blitz, and Saastamoinen, 2015; Berardi & Morton, 2017; Chafoulease, et al 2016; Chafoulease, et al., 2019; Dorado et al., 2016; Honsinger & Brown, 2019; Purvis, Cross, and Pennings, 2007). While

literature has existed for some time that demonstrates how harmful trauma can be, only recently has it been a high priority to incorporate trauma-informed practices into classroom strategies (Bartlett et al., 2015; Thomas, Crosby, and Vanderhaar, 2019). Local and Federal Legislation has acknowledged this need and has encouraged the use of trauma-informed practices in the school setting. In 2016, President Obama enacted the "Every Student Succeeds Act", which in part, appropriated funds for programs that provided prevention of and intervention for neglected, abused, delinquent, and at-risk youth (Every Student Succeeds Act, 2016).   The focus on trauma-informed practices is not isolated to K-12. Federal requirements are currently in place for the identification of infants and toddlers in the Part C program who may need evaluation for early intervention services due to trauma (Gilkerson et al., 2013). This initiative requires routine screening of infants and toddlers in Part C programs, assessment and treatment in recovery and resilience, and caregiver services and resources.

The determining factors in whether the local school will reduce its use of punitive disciplinary practices following a trauma-informed training will be (a) if participating teachers buy into the change in perspective on discipline, (b) the school culture begins to change to emphasize felt safety for at-risk students, and (c) teachers implement the behavior interventions with fidelity (Bartlett et al., 2015; Berardi & Morton, 2017; Honsinger & Brown, 2019). Following the recommendations of authors in the trauma-informed practices literature, the key to ensuring fidelity with implementation is to include mentorship opportunities for collaboration and the use of instructional coaching to supplement the trauma-informed training (Chafouleas et al., 2016; Dorado et al., 2016; Hoover 2019). Providing only "content knowledge" in professional development over any topic typically results in little to no consistent positive outcomes in teacher effectiveness (Kennedy, 2016). To ensure training generalizes into the

classroom in the form of effective instructional practices, "reflection in action" approaches are needed in which all educators are able to learn and practice behavioral strategies in "real-world situations" by receiving coaching to refine their learned skills (Hoover, 2019). Again, this is the focal point of the current research. A common teacher response to student disruptive behavior is to send students to the office for discipline. This occurs even for mild violations (McGruder, 2019). Administrators are at a disadvantage in this situation because they are not typically present in the classroom to observe the student's behavior and respond to it immediately. Teachers may pressure the administrator to support them by removing the student; therefore, office referrals often result in exclusionary and punitive discipline, such as detention, suspensions, and even permanent expulsion. These imposed consequences may be contraindicated to the function of the student's behavior and may not address their skill deficits. Without considering traumatic events as triggers for students' behaviors, a destructive relational dynamic can develop between the teacher and student that harms the student's learning and growth.

Even though they are poised in a unique opportunistic position to help children who have histories of trauma, teachers face a great challenge in implementing trauma-informed practices with many of today's pupils (Rocha & Ruitenberg, 2019). It is very difficult to learn to identify trauma responses in students, and effectively prevent and response to those trauma-induced behaviors. Recent research explored training programs for educators in trauma-informed practices which resulted in improved student outcomes and a positive shift in teachers' instructional practices (Anderson, Blitz, and Saastamoinen, 2015; Bartlett et al., 2015; Chafouleas et al., 2016; Honsinger & Brown, 2019; Rischel et al., 2020; Brunzell et al., 2018). While many teachers report satisfaction with trauma-informed training and the receipt of a

greater understanding of trauma and its impact on student learning, some studies report that only 4.6% of teachers claim that they learn specific restorative practices or behavioral interventions that they feel confident in implementing in the classroom (Honsinger & Brown, 2019; Perry, & Daniels, 2016). In summary, it is important that trauma-informed training (1) define trauma, (2) explain the adverse effects of trauma on learning and functioning, and (3) provide strategies to respond to student behavior (Call, Purvis, Parris, and Cross, 2014; Hollingsworth, 2019; Purvis, Cross, and Pennings, 2007).

This research mirrors other studies in how technical assistance in the classroom is most effective at improving teachers' instructional skills (Bethune, 2012; Chafouleas et al., 2016; Gladney et al., 2021; Kretlow & Bartholomew, 2010). Professional development for teachers that only consists of "sit-and-get" lectures on content alone is ineffective at improving teachers' instructional practices, especially in the use of trauma-informed strategies (Honsinger & Brown, 2019). In fact, one study found that when exploring professional development in trauma-informed strategies via the traditional workshop model, only 3 out of 16 teachers reported learning an actual behavioral intervention but could not identify it (Anderson et al., 2015). School districts that have incorporated school-wide trauma-informed practices have seen decreases in overall suspensions, sometimes by as much as 30-40%, and an increase in overall attendance, as well as other improved outcomes (Augustine et al., 2018; Chafouleas et al., 2016; Dorado et al., 2016; Hoover, 2019).

Professional development models that target trauma-informed practices are much needed to bridge the gap between theory and content knowledge, and practical, and actionable strategies. Training that translates to improved teacher pedagogy in the classroom is necessary to optimize teachers' ability to respond to students with challenging behaviors associated with maltreatment

and curb the effect trauma may have on these students' education (Crosby, 2015; Rischel et al., 2019). To address this challenge, The National Center of Safe Supportive Learning and Environments has published a "trauma-sensitive schools training packet" which serves as a toolkit for educators on how to support the emotional and physical safety of the student in need by offering choice, control, and empowerment through instruction and strategies with real-world application (Guarino & Chagnon, 2018). After participating in a general informational training on behavior interventions, it is helpful to observe an instructional coach model behavioral interventions and receive immediate feedback on the implementation of the strategy (Coogle et al., 2018; Cornelius et al., 2019; Fallon et al., 2019; Freeman et al., 2017; Gladney et al., 2021; Neuman & Cunningham, 2009; Owens et al., 2020; Yeung et al., 2016).

Teacher training on trauma-informed practices should help school personnel to create a positive school culture that fosters a sense of felt safety and security for students and improves students' ability to learn more appropriate and less harmful coping mechanisms than what they have been conditioned to use because of trauma (Berardi & Morton, 2017; Call, Purvis, Parris, and Cross, 2014; Dorado et al., 2016; Reid et al., 2018). The integration of trauma-informed practices within coaching in educational settings has seen a surge over the last five years (Hollingsworth 2019); however, most studies either focus only on student outcomes or do not meet stringent experimental design criteria (Thomas et al., 2019). Maynard et al. (2019) conducted a systematic review of the literature on trauma-informed practices in schools. Out of 67 studies that focused on trauma-informed practices, none met their inclusion criteria. 49 were not randomized controlled treatment or quasi-experimental designs. Some focused-on trauma-informed practices but in settings other than public schools, such as residential facilities or foster homes.

There are many different trauma-focused training programs available to educators and mental health care professionals alike, and many of them translate well into the educational environment but the research on these programs within education is very new (Thomas, Crosby, and Vanderhaar, 2019). One notable program is the "*Bounce Back"* program. This program is based on the Cognitive-Behavior Therapy framework and a modified version of the CBITS program (Cognitive Behavior Interventions for Trauma in Schools) (Santiago et al. 2018; Stein et al., 2003). This training consists of structured activities that are typically used with younger students and led by mental health professionals. Findings indicated significant improvements in students' symptoms of Post-Traumatic Stress Disorder (PTSD), and in their use of coping skills, compared to control groups. Other studies have targeted trauma-informed programs for schools, using the Cognitive-Behavior-Therapy model with success (Goodkind et al., 2010), or specifically implemented by school counselors (Hollingsworth, 2019; Purvis, Cross, and Pennings, 2007).

Some trauma-informed models target attachment, self-advocacy, and competency (ARC), such as the Head Start Trauma Smart (HSTS) program. This program provides teachers in head start classrooms with an instructional coach or liaison to work between the home and the child's head start program (Holmes et al., 2015). These coaches train the teachers and provide immediate performance feedback, modeling, coaching, and support in how to best implement strategies for young children with histories of trauma. Findings indicated that classrooms that were led by teachers who received technical assistance from coaches, demonstrated significant improvements in student outcomes compared to the control classrooms, which declined in student achievement over a two-year period.

The Trauma-Informed Elementary Schools (TIES) model is a program designed to provide services to early childhood elementary classrooms. The strategies and interventions implemented within this model target the development of attachment, self-regulation, and competency (Rischel et al., 2020). This model is a school-based program that uses a "liaison" or coach to provide support to teachers in recognizing and responding appropriately to trauma-related behaviors. Students in TIES classrooms showed improved outcomes in comparison to control classrooms in positive interactions. The TIES model incorporates teacher, school, and parent training on adverse childhood experiences, the impact of trauma on child development, identification of symptoms of trauma, and intervention strategies to address trauma-triggering behaviors. There is also classroom consultation by a resource liaison that provides performance feedback, coaching, and support.

Trust-Based Relational Interventions (TBRI®)

Research at Texas Christian University's Karen Purvis Institute of Child Development represents a significant amount of the latest empirical research into the effectiveness of specific trauma-informed strategies used by teachers, caregivers of foster children, healthcare professionals, and mental health workers. Trust-Based Relational Intervention (TBRI®) is a holistic, comprehensive, research-based approach to helping vulnerable children (Purvis et al., 2013). Originally, this program was designed for implementation by foster parents with adopted or foster children with past experiences with abuse and neglect. Recently within the last five years, the focus of TBRI® has been on providing professional development training for educators to learn how to address students in their care who have histories of trauma (Purvis, Cross, and Pennings, 2007; Reid, Proctor, and Brooks, 2018).

The implementation of this model includes a change of perspective about inappropriate behavior and how trauma-induced behaviors often serve as survival mechanisms for victims (Purvis, Parris, Cross, 2011). It also includes training for staff in how to prevent and appropriately respond to the misbehavior of children, in a more preventative and non-punitive ways. The intervention strategies within this trauma-focused model also emphasizes relationship-building. Reducing the use of punitive disciplinary practices requires a change in caregivers' and educators' views, thoughts, and beliefs about discipline, and the use of disciplinary consequences. As a result, exclusionary and punitive disciplinary practices with students are used less frequently when schools have fully implemented this model. This change in perspective also leads to more creative, restorative strategies to use with students and consistent teaching and reinforcement of less harmful coping strategies (Berardi & Morton, 2017).

Professional development in facility-wide TBRI® seems to do a decent job of improving the perspectives of staff. Initial findings indicate great promise for educators implementing this trauma-informed model (Reid et al., 2018). After the first year of implementation in a charter school, data indicated that physically aggressive acts that resulted in office disciplinary referrals dropped by 68%. Verbal aggression by students dropped by 88% and disruptive behaviors dropped by 95% (Parris et al., 2015), and a 23% decrease in the number of office referrals for the top ten students who frequented the office for disciplinary purposes (Anderson, Blitz, and Saastamoinen, 2015; Purvis et al., 2015).

The TBRI® program does not specifically incorporate coaching in strategies and interventions for teachers into the training. This is the basis of this dissertation research. Pairing instructional coaching with workshop training is more likely to have a positive and lasting effect on training teachers how to use the strategies and interventions with students in their classrooms

in real-world situations and improve teachers' feelings of self-efficacy at implementing strategies.

Coaching Components in the Professional Development of Teachers

Frequently the way professional development training is provided to classroom teachers is inadequate and lacks evidence-based components and effective practices (Darling-Hammond et al., 2009; Wei et al., 2010). Teachers attend workshops and training given in a one-stop-shop manner that is ineffective (Boudah et al., 2003). To critically evaluate the availability of high-quality professional development, the National Center for Educational Evaluation and Regional Assistance surveyed thousands of teachers in Oklahoma school districts. Survey findings indicate that most teachers reported receiving annual professional development; however, only a few districts offered coaching and consultation to their teachers, in addition to the traditional "sit-and-get" didactic training models (Peltola et al., 2017). Additionally, some reported receiving very little administrative support following professional development in how to implement evidence-based practices (Simonson et al, 2017).

Positive Behavior Interventions and Supports (PBIS) have substantial evidentiary support for improving teacher effectiveness by using proactive, positive strategies to keep students actively engaged. Using the PBIS approach leads to improved academic achievement and prosocial behaviors (Simonson et al., 2019). The PBIS model focuses on using student and teacher data to make decisions on how to focus training and professional development opportunities most effectively for teachers. Many of the instructional strategies and interventions within the PBIS model are structured within a Tiered intervention system. Tier 1 instructional strategies are basic procedural and proactive practices that aim to provide support to all students in the general education classroom. Tier 2 is a more targeted intervention system for students

who are at risk for either academic or behavioral/social skills deficits. The last tier is highly

intensive and provide individualized interventions for those students who exhibit the most

academic and behavioral challenges. Comprehensive, school-wide Positive Behavior

Intervention and Supports (SW-PBIS) uses instructional coaches to provide modeling, immediate

feedback, and consultation to classroom teachers in how to implement behavior intervention

strategies with fidelity to ensure maximum effectiveness. This combined model has even been

effective at reducing challenging behavior and meeting the mental health needs of those in the

criminal justice system housed in penitentiaries and juvenile centers (Kumm et al. ,2020; Weist

et al., 2018).

The use of PBIS school-wide has been shown to improve teachers' self-efficacy in the

implementation of the positive classroom management and behavioral strategies that exist within

this model (Kelm & McIntosh, 2012). One incorporated component in the PBIS model is the use

of instructional coaches. Findings indicate a functional relationship between coaching and

improved school wide PBIS (Bethune, 2017). The fidelity of implementation of these strategies

stays higher with the guidance, mentoring, and ongoing technical support of an instructional

coach (Benner et al., 2010). Classroom teachers in a Philadelphia Independent School District

participated in a four-year implementation study of trauma-informed practices within a Positive

Behavior Intervention & Supports (PBIS) model, which is a tiered intervention system, typically

placing students on three tiers of support, depending on their need for behavioral interventions.

The study incorporated teacher coaching on a weekly basis that consisted of observations, and

the provision of performance feedback (von der Embse et al., 2019). Data was collected and

reported after the first two years of implementation. Even though schools implemented the

interventions with fidelity in the 2015/2016 school year, the school-wide initiative alone did not

result in a significant reduction in office behavior referrals which was the study's main outcome measure. A trauma-informed model was added to the existing PBIS framework for the schools in this study, after the second year. The teachers received training on using basic classroom management procedures for all students. By the end of the 2016/2017 school year, the percentage of students identified as "at-risk" in Tier 2 reduced by 13.6%. Consequently, the addition of the trauma-informed model corresponded to a reduction in office referrals. One limitation of this study is that only descriptive statistics were used; therefore, a functional relationship between coaching and teacher behavior was not found. However, this study did incorporate trauma-informed intervention strategies within the professional development model, which is directly related to the current study and gaining more attention in literature and practice in education.

"*Coaching*" has been defined in several ways. "Instructional coaching" is one that supports teachers, by observing, modeling, and providing a cycle of pre- and post-consultation (Gallucci et al., 2010). In the Positive Behavior Intervention and Supports (PBIS) literature, it is defined as "when one works with teachers to provide support in the implementation of their duties as a teacher, which could include providing instruction, engaging in effective classroom management, or addressing the needs of a specific student" (Hershfeldt et al, 2012). This study will use "coaching" to describe the observation, feedback, and modeling of strategies and supports to the classroom teacher. On-going collaboration between coach and participant allows for active learning that is directly applicable to teachers' instructional practices, and positively affects their professional development (Desimone et al., 2002).

The American Institutes for Research, [A.I.R.] (2004), modified by Denton and Hasbrouck (2009), published a categorization system of coaching. The categories defined within

this study were (a) technical coaching by an "expert", (b) collaborative problem solving, (c) reflective coaching, (d) team-building coaching, and (e) reform coaching. Factors such as frequency, duration, and type of coaching vary between these categories. Technical coaching focuses on the professional development of a novice teacher by an "expert". In collaborative problem-solving, the teacher and the coach work together to identify the problem, develop goals, an action plan, and monitor the teacher's progress toward their goals (Romano & Woods, 2018). In reflective coaching, teachers think introspectively about their own teaching practices, efficacy in the delivery of strategies, and how best to improve performance. Team building is a modified version of collaborative problem-solving within small learning communities. Reform coaching typically is used at the school – level to make broad improvements. Within these categories of coaching models are critical components.

In all categories of coaching, there are at least three specific components that are most likely to facilitate improved teacher practices. These components are 1) repeated observations, 2) demonstration or modeling by the coach and practice by the teacher,(Coogle, Ottley, and Storie, 2016), and 3) immediate, specific performance feedback (Baron et al., 2018; Coogle, Ottley, and Storie, 2018; Galluci et al., 2010; Kretlow & Bartholomew, 2010; Lown, 2017; Neuman & Cunningham, 2009; Scheeler, Ruhl, and McAfee,, 2004;). Observations allow the coach to collect data on the use of teacher behavior. Coaches give immediate feedback in real-time in the classroom, either verbally or using other forms of technology, or delayed feedback in post-observation conferences (Barton et al., 2019; 2018; Cheek et al., 2019; Coogle, Ottley, and Storie, 2017; 2016; Fellig et al., 2018; Carmouche et al., 2018; Kleinert et al., 2017; Lown, 2017; Owens et al., 2020; Scheeler et al., 2018; White, 2018).

Another important component of coaching is modeling. Modeling a specific intervention is especially important when coaching a teacher to use behavioral strategies with students who demonstrate challenging behaviors (Barton et al., 2013; Coogle, Ottley, and Storie, 2016). Research on coaching and modeling suggests that it increases the initial acquisition and implementation of a new strategy and improves the generalization of new skills (Bethune & Wood, 2013; Kretlow et al., 2012). Incorporating high-quality coaching into a PBIS model has been , but successful, but comes with challenges in implementation that cannot be ignored (Bethune, 2017; Hershfeldt et al., 2012).

Prior to any professional development training, it is critical to identify and address the barriers that might exist in the implementation of newly learned strategies. While most of the empirical research supports the use of instructional coaches to provide modeling, immediate performance feedback, and technical assistance to best train teachers, (Kretlow & Bartholomew, 2010; Romano & Woods, 2018), most school districts may struggle to allocate the funds to hire additional staff. Likely the best approach to include coaches into trauma-informed trainings is to identify the key personnel within each school building who can dedicate time to visit colleagues' classrooms and provide peer support.

Research on Teacher Training on Trauma

For this investigation, an electronic search in the ERIC database was conducted. The following terms were used to filter the search, *coaching*, trauma-informed*, trauma*, professional development*, single-case research*.* Inclusion criteria for this search was (1) peer-reviewed studies or dissertations, (2) conducted within the last five years, (e) included participants that were classroom teachers, (4) included an independent variable of a coaching component for professional development, (5) included dependent variables on teacher

instructional behavior, and (6) that used a single-case experimental design. There were only 26 studies that met the criteria. Many of these studies found a functional relationship between coaching and improved teacher behavior (Bethune, 2017; 2012; Cornelius, 2020; Fallon et al., 2019; Gion, McIntosh, and Falcon, 2022; Gladney et al., 2021; Hammond & Moore, 2018; Kleinert et al., 2017; Lown, 2017; Newman & Cunningham, 2009; Pierce, 2015; Rakap, 2017; Romano & Woods, 2018; Simonsen et al., 2017; Tekin-Iftar et al., 2017; Tupou et al, 2020; and Von der Embse et al., 2018). Findings from these studies support a strong positive effect of coaching that consists of observation, modeling, and feedback on teachers' instructional practices. however, none of them focused on coaching teachers to use trauma-informed practices and strategies (Table 1).

Some research integrated technology into the coaching component to provide immediate performance feedback, such as bug-in-ear audio, text, emails, and video analysis (Barton et al., 2018 and 2019; Carmouche et al., 2018; Cheek et al., 2019; Coogle et al., 2018; Heard & Peltier, 2021; Hollett, 2017; Kennedy et al., 2017; Kleinert et al., 2017; Ottley et al., 2017; Owens et al., 2020; Randolph et al., 2021; Scheeler et al., 2018; Tekin et al., 2017). These studies found a functional relationship between coaching and improved teacher behavior, or support for a mild-to-moderate effect on teacher behavior once coaching was introduced. These studies investigate how coaching improves the instructional practices and professional development of pre-service teachers (Barton et al., 2019; Coogle et al., 2018; Rakap, 2017), early childhood teachers (Barton et al., 2018; Fallon et al., 2015; Fellig et al., 2018; Tupoe et al., 2020) general and special education classroom teachers (Bethune, 2012; Cheek, Rock, and Jimenez, 2019; Coogle, Ottley, and Storie, 2017; 2016; Cornelius, Rosenberg, and Sandmel, 2019; Stormont & Reinke, 2014).

Table 1.

Single-subject studies for the last five years on the effects of coaching teachers

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Study	N	Design	Dependent	Coaching	Measurement	Findings
Barton et al. (2018)	3	MBD across behaviors	Use of target practices	Performance feedback (emails)	Visual Analysis	Functional relationship between teacher behavior and feedback emails from coach
Study	N	Design	Dependent	Coaching	Measurement	Findings
Barton et al. (2019)	4	MBD across behaviors	Use of self-selected interventions	Performance feedback via text	Visual Analysis	Positive effect of text message feedback on teachers' use of self-selected interventions
Bethune (2017)	4	MBD across participants	Implementation of Tier 1 PBIS interventions	Side-by-side, in-vivo	Visual Analysis	Functional relationship between coaching and teacher behavior
Carmouche et al. (2018)	3	MBD across participants	Use of OTR	Feedback, rehearsal, supervisory, video-analysis	Visual Analysis	Functional relationship between coaching and rates of OTR
Cheek et al. (2019)	3	MBD across participants	Use of OTR	Immediate electronic feedback	Visual Analysis Descriptive statistics	Electronic feedback coaching led to increase in teachers' use of OTR
Coogle et al. (2018)	2	MPD across participants	Use of embedded learning opportunities	BIE, immediate feedback	Visual Analysis	Positive effect on use of choice-making and the use of reinforcement.
Cornelius, (2020)	6	MBD across behaviors	Correct use of instructional components	Reflective and delayed feedback	Descriptive statistics	Relationship between coaching and correct use of the components
Fallon et al. (2019)	?	MBD across participants	Classroom management strategies	Observation, modeling, explicit training	Visual Analysis Tau-U	Support of functional relationship between comprehensive classroom management plans and improvement in teacher behavior

Gion (2018)	4	Concurrent MBD across participants	Use of BSP and Reprimands	Visual performance feedback, observation	Visual Analysis and Hedge's g (mean difference statistic)	Functional relationship between coaching and increased use of BSP and reduction in reprimands
Gladney et al. (2021)	3	MPD across teacher dyads	Implementation fidelity of social skills lessons	Supervisory, observation, performance feedback	Visual Analysis	Improvement in the teachers' fidelity of implementation of social skills lessons after coaching
Hammond & Moore (2018)	10	Repeated measures ANOVA	Fidelity of implementation of explicit instruction	In-vivo, supervisory, modeling	Descriptive Statistics	Improved implementation of explicit instruction

Continued

Heard & Peltier (2021)	1	MBD across behaviors	Use of BSP and OTR	Observation, delayed feedback, modeling, visual analysis, in-vivo	PND, PEM, IRD, NAP, SMD, Tau-U Visual Analysis	Functional relationship between independent variable and use of BSP and OTR
Hollett et al. (2017)	16	Quasi-experimental across 3 conditions	Use of feedback on performance and movement in PE	BIE, immediate feedback	MANOVA	Significant difference (improvement) in teacher performance in conditions compared to control condition
Kennedy et al. (2017)	3	MBD across teachers	Use of EB science vocabulary practices	Feedback, modeling, video-modeling	Visual Analysis, Tau-U	Salutary change in teachers' use of vocabulary after coaching
Kleinert et al. (217)	3	Delayed MBD across participants	Use of check-up consultation model	In-vivo Performance Feedback	Visual Analysis Descriptive statistics	All three teachers improved their use of evidence-based practices indicating a functional relationship
Lown (2017)	4	ABCBC Design	Use of BSP	Immediate & delayed feedback	Visual Analysis, Tau-U	Large-moderate effect found for all participants in their use of BSP after introducing independent variable
Ottley et al. (2017)	4	MBD across participants	Use of communication strategies	BIE, immediate feedback	Visual Analysis	Variability in outcomes across participants

Study	N	Design	Dependent	Coaching	Measurement	Findings
Owens .et al. (2020)	24	MPD across participants	Fidelity of implementation of self-monitoring strategies	BIE, immediate feedback	Visual Analysis and descriptive statistics	Functional relationship found between independent variable and fidelity of implementation of self-monitoring strategies
Randolph et al. (2021)	3	Delayed MBD across participants	Use of BSP	BIE, immediate feedback	Visual Analysis	Functional relationship found between icoaching and use of BSP
Study	N	Design	Dependent	Coaching	Measurement	Findings
Rakap (2017)	3	MBD across participants	Use of embedded instructional learning trials	Observation, feedback	Visual Analysis	Functional relationship between coaching and use of instructional learning trials
Romano & Woods (2018)	1	MBD across behaviors	Use of responsiveness in play	Collaboration, guided practice, feedback	Visual Analysis Descriptive Statistics	Functional relationship between coaching and use of strategies
Scheeler et al. (2018)	6	MBD across participants	Use of BSP	BIE immediate and delayed feedback	Visual Analysis and Tau-U	Immediate feedback more effective at increasing use of BSP than delayed feedback
Simonsen et al. (2017)	6	MBD across participants	Use of BSP	Collaboration & delayed feedback	Visual Analysis PND	Functional relationship between coaching and use of BSP
Tekin et al. (2017).	3	MBD across participants	Use of prompting procedures	Modeling, video and in-vivo rehearsal, feedback	Visual Analysis	Improved use of prompting procedures after introduction of coaching
Tupou et al. (2020)	3	MBD across participants	Use of intervention techniques	Reflection, rehearsal, observation	Visual Analysis, Tau-U	Improvement in interventions from baseline
Von der Embse et al. (2018)	6	Quantitative Descriptive Design	Mastery of teachers' instruction skills	Observation & delayed feedback	Descriptive statistics	Significant increase in at least three participant's instruction skills

Note. N = Participant sample size; MBD = Multiple baseline design; MPD = Multiple probe design; BSP = Behavior-specific praise; OTR = Opportunity to respond; PND = Percent of nonoverlapping data; PEM = Percent of data exceeding the median; IRD = Robust improvement ratio difference; NAP = Nonoverlap of all pairs; SMD = Standardized mean difference; ANOVA = Analysis of variance; MANOVA = Multivariate analysis of variance; Tau-U = combined nonoverlapping data between phases with corrected baseline; ABCBC = Multiple Component Single Subject Design; BIE = Bug-in-Ear technology

In conclusion, there is plenty of empirical evidence that increased professional development leads to improved teacher practice. In turn, findings continue to support a causal relationship between teacher effectiveness and student outcomes. However, there are not a lot of studies that use single-subject, multiple-baseline design to study the effects of coaching on teachers' use of trauma-informed strategies. The premise behind the current study is that the traditional professional development model for teachers is inadequate. The use of instructional coaching in the provision of teacher training and support in behavior interventions is minimal. With the increase in trauma-informed training, at the teacher and school level, the purpose of this study is to analyze the effect coaching of trust-based relational interventions may have on teacher effectiveness and use of these strategies.

CHAPTER 3: THEORY OF ACTION

Instructional Coaching

The theory of action informing this study is based on an instructional coaching model that is designed to increase teacher use of the IDEAL response to appropriately react to student behavior. The acronym "*IDEAL*" in the TBRI® literature, stands for *immediate, direct, effective, action-based, and leveled.* The conceptual framework is based on the theory that actionable coaching with immediate performance feedback, rather than traditional workshops, is more effective when training teachers to implement behavior strategies. The literature supports that the additional component of instructional coaching is highly beneficial and effective at improving teachers' abilities to implement behavior interventions (Peltola et al., 2017; Simonson et al, 2017).   Two primary models of coaching exist in professional development research; supervisory coaching (Joyce & Showers, 1995) and side-by-side coaching (Blakely, 2001). In the supervisory coaching method, the instructional coach observes the teacher implementing a newly learned instructional skill and records feedback on his/her performance. The side-by-side

model of instructional coaching involves the direct intervention of the coach in the classroom, side-by-side with the teacher, modeling the correct implementation of the strategy, positive praise, and corrective feedback. In more recent research, Knight's model of instructional coaching illuminated teachers' perceived benefits and self-efficacy following this professional development model (Cercone, 2008; Knight, 2011; 2015; 2017).

Learning theory and andragogy intersect to frame this study's theory of action. Andragogy is a learning theory that is designed to meet the needs of adult learners (Knowles, 1980). Merriam and Caffarella (1999) reported that learning is a process and that adult learners do best when they are personally invested in their learning (Cerone, 2008).The side-by-side model of coaching developed by Knight is used as the intervention in this study. As illustrated in Figure 1, the coach conducts an initial classroom observation and provides feedback to the teacher on how to improve the delivery of instructional strategies previously learned in initial training. During this consultation, the teacher identifies a specific performance-based goal that she/he would like to focus on in the coaching sessions. The instructional coach provides modeling of interventions they wish to teach the educator and allows them to practice. It's necessary to allow the teacher time to practice with and without the coach present before the next coaching session. A series of observations, feedback, consultation, and modeling, begins again. The prediction is that coaching will improve teacher competency, which will lead to increased teacher efficacy and a reduction in punitive responses to student behavior (Figure 1). The foundational knowledge the participants obtain from attending the TBRI® training informs them of the model, and introduction of trauma-informed strategies, like the IDEAL response; however, it is the coaching model that instructs them *how* to implement the strategy. As they are coached and practice more, their competency rises, leading to positive outcomes for teacher and student.

Figure 1.

Coaching Model
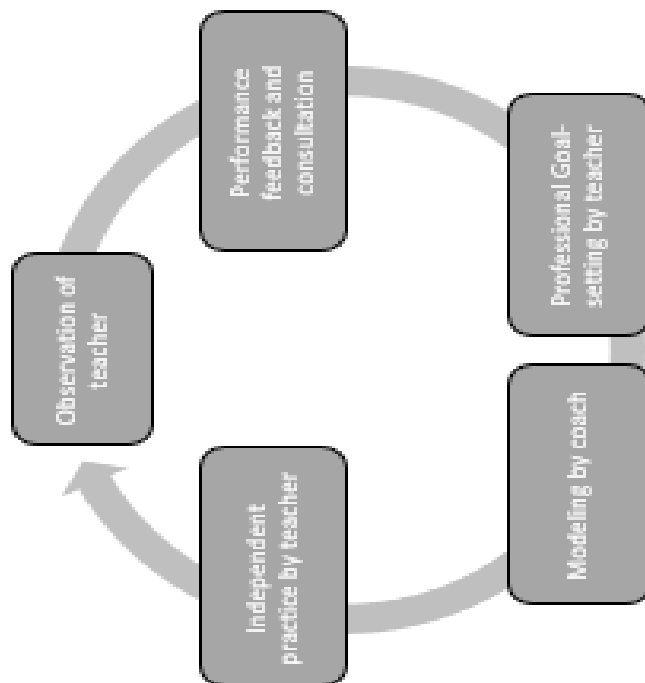
All participants attended an initial teacher training on TBRI®. This is a didactic workshop which is a foundational, informational training on trauma-informed practices. Following this training, the cycle begins of coaching, which entails, observation, modeling, performance feedback, coaching while teacher practices the intervention, and around again to new observation. There will be three separate coaching sessions on using the IDEAL response, the trauma-informed strategy used in TBRI® for correcting or responding to student behavior. It is predicted that the instructional coaching model will increase teacher use of IDEAL responses, which is likely to reduce the use of punitive responses by teachers when reacting to student behavior (Figure 2).

Figure 2.
*Theory of Action Using Instructional Coaching of TBRI® Intervention*
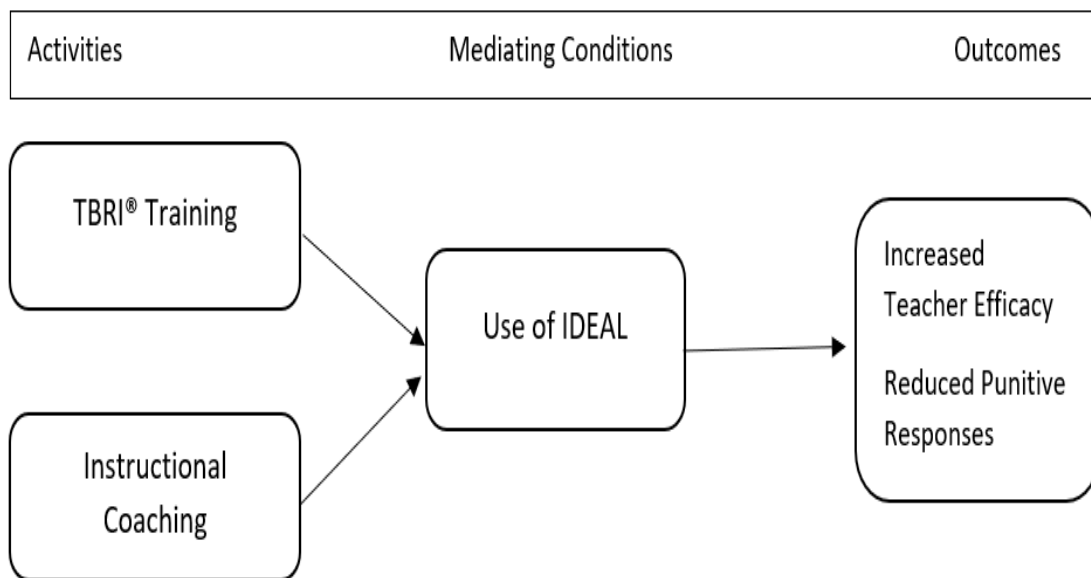
The initial TBRI® training, paired with the three coaching sessions serve to provide a foundation for the participants to learn how trauma affects behavior, how to identify trauma-induced behavior, and how to respond in a way that is positive, not punitive. As participants become more efficient at using the IDEAL response and begin using it more frequently alongside an instructional coach, their feeling of self-efficacy should increase as problem behaviors are reduced and they use less punitive responses. Coaching will focus on the student-teacher interaction cycle, observing student behavior through a trauma lens, and practice using the IDEAL response when reacting or redirecting student behavior.

Student-Teacher Interaction Cycle

Trauma responses by students create a maladaptive cycle when teachers react in punitive ways and provide consequences that either exacerbate or worsen future behavioral responses. In the literature, this is referred to as "reciprocal causation" (Bandura, 1977). This is explained by the antecedent-behavior-consequence contingency (Chafouleas et al., 2019). Trainings that teach a problem-solving strategy to address challenging behaviors that follows the antecedent-behavior-consequence contingency mentioned earlier, have been successful at reducing students' challenging behaviors in the classroom (Pierce, 2015; Snell, et al., 2014).The antecedent event can trigger a trauma response, which leads to a consequence from the teacher (Figure 3). This is challenging for educators how to prevent *and* respond to student behaviors in a way that is appropriate and does not worsen the situation further. It is critical that the coach provides opportunity for the participants to learn about this interaction cycle and the importance of using these trauma-informed behavioral interventions.

Figure 3.
Antecedent-Behavior-Consequence Contingency
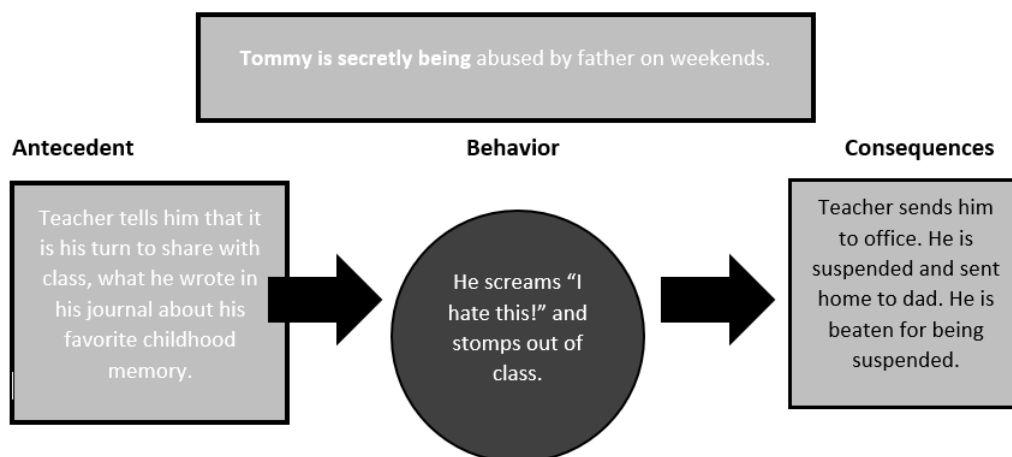
TBRI® Training

Student Behavior through Trauma Lens

The focus of this research is on teacher use of The Trust-Based Relational Intervention (TBRI®) model. This model addresses experiential avoidant behaviors students might demonstrate and how classroom teachers can properly respond without re-traumatizing them.

The three principles of this approach are 1) empowering the child, 2) connecting with the child, and 3) correcting the child. The key to the interventions within this model is awareness and engagement. It is critical to immediately recognize behaviors, directly engage the student, and respond accordingly to ensure the child feels safe.

The TBRI® program specifically outlines the role fear plays in the behavior of children who have experienced or are currently experiencing neglect and abuse (Call et al., 2014). In response to the neglectful and abusive actions of their caregivers, children develop a *fight, flight,*

or freeze response. The "fight" response obviously results in the child fighting to escape the situation, previously referred to as "experiential avoidance". "*Flight"* responses are typically physical elopement out of the current environment or context in which the abuse is occurring. Finally, the "*freeze*" response is mostly a response to paralyzing fear that prevents them from acting in any manner whatsoever. To the untrained eye, this may look like a refusal and an act of non-compliance to a given directive by a teacher.

Fully understanding the social and psychological forces behind student behavior is crucial for teachers who have students with challenging behaviors, especially those who have experienced adverse childhood experiences. Recognizing the signs and symptoms of a child who may be experiencing or has experienced neglect or abuse in the past is the first step in responding to student behavior in a supportive and healing way (Call et al., 2014; Chafouleas et al., 2016; Purvis, Cross, and Pennings, 2007). This will be the focus of the initial TBRI© training.

Instructional Coaching of IDEAL Response

Recognizing the three trauma-induced responses is critical for teachers to be able to respond in such a way that does not exacerbate the situation but instead lessens the child's fear and provides a feeling of safety. The IDEAL response strategy raises the teacher's awareness and increases engagement with the student when responding to them. The IDEAL response should be (1) immediate, (2) direct, (3) efficient, (4) action-based, and (5) leveled at the behavior, not the child (Purvis, Cross, and Pennings, 2007; 2009; Purvis, Parris, and Cross, 2011) (Table 2). Examples of the strategies within the TBRI® curriculum that aim to reduce fear are: (1) giving the child a voice by giving him/her undivided attention when responding to their behaviors; (2) offering choices; (3) allowing compromise; (4) practicing "re-dos"; (5) providing opportunities

for the child to seek sensory outlets; (6) doing frequent "feelings" checks; and (7) labeling

emotions (Call et al., 2014).

Table 2.
The IDEAL response in trauma-informed correcting strategies

I	Respond Immediately	Respond to behavior swiftly and in close temporal proximity to the behavior (within 5 seconds)
D	Respond Directly	Use eye contact, with undivided attention, bring them near to you physically (within 2 to 3 feet)
E	Respond in an efficient manner	Levels of response – use the least amount of firmness, corrective effort, and verbal directives required to correct student behavior. Do not over or under-react.
A	Response should be "action-based"	Redirect the student to practice appropriate behavior. Model and allow them to physically "redo" their response in a different way and follow with praise.
L	Level the response to the behavior, not the child	Never reject the child as a person. Only respond and relate to their behavior.

Note: Purvis, K.B., Cross, D.R., Dansereau & Parris, S.R. (2013) Trust-Based Relational Intervention (TBRI): A Systematic Approach to Complex Developmental Trauma, Child & Youth Services, 34:4.

Instructional Coaching Outcomes

Increased teacher efficacy. Studies have linked high classroom stress with lower self-efficacy

and lower job satisfaction. Inversely, those with greater classroom management and instructional

strategies self-efficacy scored higher on job satisfaction rating scales (Caprara et al., 2003;

Klassen & Chiu, 2010; Walsh et al., 2020). The primary investigator predicts that coaching,

teachers will improve their competency at using the IDEAL response. In turn, this will boost

their self-efficacy, which could lead to higher job satisfaction and better student outcomes.

Reduced punitive responses. Empirical research on the effectiveness of the TBRI®

program with at-risk students in an educational setting shows promise. For example, two studies

published in 2015 report strong evidence that the implementation of TBRI® strategies, at both

the student and school-wide levels, works to reduce incidents of students' problem behavior. After the first year of implementation of school-wide TBRI®, the school showed a 68% decrease in office referrals for physical aggression, an 88% decrease in referrals for verbal aggression and threats. After the second year of implementation of TBRI®, there was a 93% decrease in these types of incidents (Parris et al., 2015). At the individual student level, the use of TBRI® strategies resulted in an 18% decrease in incident reports of aggression, and 23% decrease in office referrals for those students who typically are the most frequently referred for discipline (Purvis et al., 2015).

Students who are overly sensitive to movement, sounds, and other student activities may be experiencing hyper-vigilance. When teachers recognize this, it informs them how to best respond (Bell et al., 2013). Without training and coaching, teachers may characterize hypervigilant behavior as disrespectful and defiant. Instructional coaching helps teachers to recognize student aberrant behaviors as a function of trauma, and how to employ trauma-informed interventions, like the IDEAL response, to teach students how to cope with emotions and behave more appropriately.

CHAPTER 4: METHODS

Participant Information

An interest survey was emailed to all early childhood teachers who work in the local school district. The investigator provided information on participation in research and the inclusion criteria. The inclusion criteria for participants were (1) an Oklahoma teacher certification, (2) current assignment to a local school district (3) having participated in school-level Trust-Based Relational Interventions (TBRI®) training in the past, and (4) teaches a classroom that consisted of at least one student with a history of trauma who exhibits challenging

behaviors. There were five teachers who requested to participate; however only three classroom teachers were chosen to be participants in this study because they met all inclusion criteria.

Investigator

The primary investigator for this study is a certified classroom teacher, administrator, Board-Certified Behavior Analyst, and doctoral student at the University of Oklahoma in the Education, Administration, Curriculum, and Supervision (EACS) department. She has experience conducting single-case research and implementation of trauma-informed practices through TBRI® and behavioral interventions. The investigator in this study will act as the "coach" in the intervention phases of this multiple-baseline design. It would be appropriate to disclose to the reader there may be advantages to the coach being the lead investigator in this study. The investigator has been an educator and coach for many years, as well as a certified Behavior Analyst. Obtaining teacher buy-in and active participation in the coaching and professional development intervention might be easier when coached by a person who is familiar with the inner workings of elementary education and speaks with educators in a way that they best relate. An outside expert in this area might have considerable difficulty getting teacher buy-in and active participation from the participants.

Anne

The first participant, who shall be referred to as "Anne" is a 32-year-old, Caucasian female classroom teacher in her first year of teaching. This participant teaches a Kindergarten classroom of twenty (2) students. At least 4 out of 20 are students who Anne reports have histories of trauma. This teacher has participated in Trust-Based Relational Intervention (TBRI®) professional development training. This training was provided in the traditional

didactic, sit-and-get workshop model that most teachers receive training. The elementary school in which Anne teaches is also participating in a year-long initiative to incorporate more trauma-informed strategies into their daily instruction. Prior to teaching, she was employed as a paraprofessional in a certified special education teacher's classroom and worked with students with special needs. Anne shared in her interview that she enjoys a challenge and looks forward to improving her classroom management skills and how to best improve student engagement.

Kalli

Participant 2, which will be referred to as "Kalli" is a 45-year-old, Caucasian, female classroom teacher with four years of experience. Kalli teaches a first-grade classroom of twenty (20) students. Kalli reported to the Primary Investigator that there are four or five students who have been identified as having histories of trauma. Kalli has had training in Ruby Payne, which covers emotional poverty, Trust-Based Relational Intervention (TBRI®), and Positive Behavior Intervention & Supports (PBIS) school-wide. Prior to her current assignment, Kalli was a special education teacher for three years. Before that, she was also a paraprofessional in a certified special education teacher's classroom. She reports a love and passion for working with students with difficult backgrounds and varied needs.

Karen

Participant 3, who will be referred to as "Karen" is a 50-year-old Caucasian female classroom teacher who has taught elementary school for more than twenty (20) years. Karen teaches a Kindergarten classroom of approximately eighteen (18) students.

Karen reported that two students have histories of trauma. Throughout the interview process, Karen expressed interest in the investigator "helping" her with "the students" who have histories of trauma. It was apparent to the investigator that Karen had a preconceived idea in the beginning, that the interventions being coached were focused on the individual students, and not directly *coaching her* and improving *her instructional actions.*

Setting

The settings are inside three elementary classrooms at a local school district. All three elementary schools have large percentages of students who receive free/reduced lunches and receive Title I funds. Data was collected in daily, 30-minute teaching sessions, predetermined by the teacher, that he/she typically had challenging behaviors from students.

Materials

An approved consent form was read and explained to the participants prior to the initiation of the study. A demographic information form was used to gather information on the participant's level of education, experience, and training completed. A laptop with a camera and microphone was placed in each classroom to capture video of teacher instruction and teacher-student interaction. Teacher behaviors were documented on data collection forms for analysis (Appendix A). The video was uploaded into an encrypted file into iCloud. Hard copies of data collection forms and participant information were kept in a locked file cabinet for the security and protection of information. To capture the social validity of this model, each participant will complete the short form of the Ohio State Teacher Efficacy Scale pre- and post-intervention (Tschannen-Moran and Hoy, 2001). This scale will likely capture each teacher's sense of

efficacy in terms of classroom management, discipline, and handling student behaviors

effectively and whether the coaching component improved their perceptions (Appendix B).

Experimental Design

Empirical Approach

"The research method of any science must match the defining characteristics of that

science's subject matter" (Cooper, Heron, and Heward, 2020). The use of a single-case

experimental design for this study lends itself better-understanding teachers as individuals, with

varying learning styles, needs, and instructional skills and how they respond to coaching.

Stemming from the applied behavior analysis research (Baer, Wolfe, and Risley, 1968; Cooper

et. al., 2020) single-case research has been an effective tool for applied researchers and

interventionists in affecting change in someone's performance in academic and behavioral skills

alike (Greenwood et al., 2014). Using applied behavioral principles of behavior, investigators

can study participants' specific behaviors, and make data-based decisions regarding how to tailor

training to their unique needs (Baer, Wolfe, and Risley, 1968). Taking repeated measures of a

dependent variable over time and analyzing change provides a unique opportunity for the

interventionist. By monitoring the progress, or lack thereof, of a particular subject, the researcher

can determine if the intervention needs to be modified, increased or decreased in frequency, etc.

Horner describes how single case methodology evolved over time from the traditional case

study, with an emphasis on the individual, however, is aligned with experimental rigor (Horner

et al., 2012). The form of single-case research used in this study begins with measuring specific

behaviors for each participant for a period to identify a trend or baseline against which any

change (such as an intervention), can be evaluated. After baselines are established, an

independent variable is introduced and the investigator observes changes in the participants'

behaviors, if any. The multiple-baseline design, as used in this study, allows the researcher to demonstrate the effect of the independent variable on three individual participant's behavior at three different points in time, across three different contexts or locations, or across three different individuals (Barlow, Nock, and Hersen, 2009; Cooper, Heron, and Heward, 2020). This allows for determinations of a likely functional relation between independent and dependent variables. The Institute for Education Sciences particularly has focused on this research design for diverse learners, such as those with disabilities (IES, 2016). In recent years, this design has increased in the literature of the professional development of teachers with evidence-based practices with behavioral interventions, academic instruction, and classroom management (Horner et al., 2005).

For this research study, three different early childhood teachers were measured on their use of a particular trauma-informed strategy to establish their baseline. After three coaching sessions on using the IDEAL trauma-informed strategy, repeated measures were taken on their use of that strategy, post-intervention. To ensure the teachers continued to use the skill after the acquisition, maintenance probes on their performance for each, as well.

In summary, the theoretical framework for the present research is based on concepts within learning theory, with an emphasis on the individual teacher and how they might respond to coaching, as part of a trauma-informed professional development model. The instructional coach will be teaching them to improve and increase their use of the IDEAL response strategy when responding to student behavior. Analysis of pre-and post-intervention self-efficacy rating scales may provide insight into the social validity and utility of coaching might be.

Single Case Research Design

This study is a single-subject, delayed, multiple-baseline design across participants to investigate the relationship between coaching, as part of trauma-informed training, and teachers' use of evidence-based practices. The independent variable is the implementation of the coaching component of trauma-informed strategies. The dependent variable is teacher responses.

There are three categories of principles within the Trust-Based Relational Intervention model: a) empowering principles, b) connecting principles, and c) correcting principles. In this study, teachers' use of interventions, referred to as "responsive strategies" will be measured. In the TBRI® literature, this is referred to as the IDEAL approach, which guides caregivers and teachers in resolving problem behaviors before they escalate. Teacher behaviors were coded as meeting the following criteria in their responses to student-challenging behavior:

Immediacy. *Immediacy* is defined as a response to student behavior that is in close temporal proximity to the behavior (within 5 seconds).

Directly. *Directly* is defined as making direct eye contact and in-close physical proximity of no more than 2-3 feet from a student.

Efficiently. *Efficiently* means that the teacher's response is equivalent and matches the students behavior in intensity.

Action-based. *Action-based* means redirecting the student to practice an appropriate replacement behavior, (i.e., a "redo"), modeling and praising that behavior after a student demonstration.

Leveled. *Leveled* means that only the child's behavior should be addressed and nothing personal about the child or their character is mentioned by the teacher. Participants' target behavior (i.e., dependent variable) was corrective responses that align with this TBRI® protocol

(i.e., IDEAL responses) following student behavior. A rubric was designed for data collection to code teacher responses. If teachers' responses met 4 out of the 5 criteria within the rubric, a score of 1 was documented. The percentage of correct responses (that met the criteria) was calculated daily and placed on a graph for visual analysis.

To meet the What Works Clearinghouse single-case design standards without reservations, (U.S. Department of Education, Institute of Education Sciences & What Works Clearinghouse, 2016) the design included (a) manipulation of the independent variable, (b) inter-observer agreement documented (c) and calculated (d) for at least 20% of sessions, (e) the experiment included at least three attempts to demonstrate treatment effects, and (f) at least five data points were collected per phase. The intervention phases were introduced in a staggered fashion after at least five data points and stability in the baseline level was established (Appendix C).

Hypotheses and Variables

The independent variable is the coaching sessions with each participant, from an instructional coach on using a trauma-informed strategy called the IDEAL response. The dependent variables will be (1) the frequency of each participant's use of the strategy in a 30-minute video session, (2) The percentage of time each participant's use of the IDEAL response, compared to all other responses to student behavior observed in the 30 min video session, (3) Pre- and post- rating scales data for each participant on their sense of self-efficacy at handling student behavior, (4) the number of times each participant referred a student to the office for misbehavior., pre- and post- intervention, (5) and the number of times each participant suspended a student in their class, pre- and post- intervention.

Hypothesis 1. A positive, therapeutic functional relation will be established between coaching and each participant's improvement in using the IDEAL response strategy.

This will translate to an increase in the total overall number of times each participant uses the strategy.

Hypothesis 2. The percentage of times each participant uses the IDEAL response will increase**.**

Hypothesis 3. Each participant's ratings on the Sense of Self-Efficacy Scale will increase after the coaching intervention, compared to their pre-intervention scores.

Hypothesis 4. The number of times each teacher refers to students to the Principal will decrease after coaching them to use the new strategy.

Hypothesis 5. Because of fewer referrals, each participant 'suspension rate for their class will decrease, after the coaching of this new strategy.

Procedures

Intake and Consent

Details of the study were withheld from all participants. At the first meeting with each teacher, informed consent and demographic information were obtained. Each participant was given a short form of the Ohio State Teacher Efficacy Scale to measure their perceptions of self-efficacy pre-intervention. After completion of this scale, the investigator explained to each participant that the purpose of the study was to investigate

the effectiveness of a professional development model of Trust-Based Relational Interventions (TBRI®) in improving student behavior. The coaching component of this investigation was not mentioned or discussed with the participants to ensure they were as blind to the independent variable as possible. They were also not informed that data would be collected on teacher behavior, not student behavior. All participants had already taken an introductory professional development training on Trust-Based Relational Intervention (TBRI®).

Baseline data collection

A pre-determined 30-min session of time was videoed through a laptop camera of the teacher instructing students. One session was recorded daily. The session recorded was identified by each teacher as being the time in the day with the most disruption and challenging behaviors by students. Additionally, aggregated data from the local school district's Student Information System was pulled on (1) the number of office referrals he/she has made pre-intervention, (2) the number of suspensions, if any, he/she has supported or facilitated of his/her students prior to intervention, and (3) the average attendance of his/her students prior to intervention.

Intervention phase

After at least five data points were collected, and a steady trend was established, the first, randomly selected participant received a series of three coaching sessions, spanning over ten school days. The investigator used a response-guided approach in determining when to implement the series of three coaching sessions. Each coaching session was 1 hour in length. The first thirty minutes were observation (at the same 30-min session being recorded). The last 30 minutes were providing performance feedback, setting professional goals for improvement, and discussing strategies. In a staggered fashion, each participant will receive a series of three

coaching sessions, one after the other. Each session occurred every three school days until complete. Data was collected throughout this intervention phase.

Aggregated data will be collected from the local school district's Student Information System on (1) teachers' office referrals, and (2) suspensions of students.

Maintenance phase

To determine if the teacher maintained the skills taught during the coaching sessions over time, the last three sessions were filmed two school weeks after the intervention phase was complete.

The first coaching component consists of the following components: (a) initial 30-minute observation, (b) followed by 30-minute discussion with performance feedback, and (c) identifying one area of improvement in his/her responses.   The second and third coaching sessions consisted of (a) 30-minute observation, (b) in-vivo coaching, including modeling strategies, if necessary; (c) a debriefing meeting with the teacher to discuss performance feedback and progress toward their goal (Figure 4).

Figure 4.

Experimental Design Phases
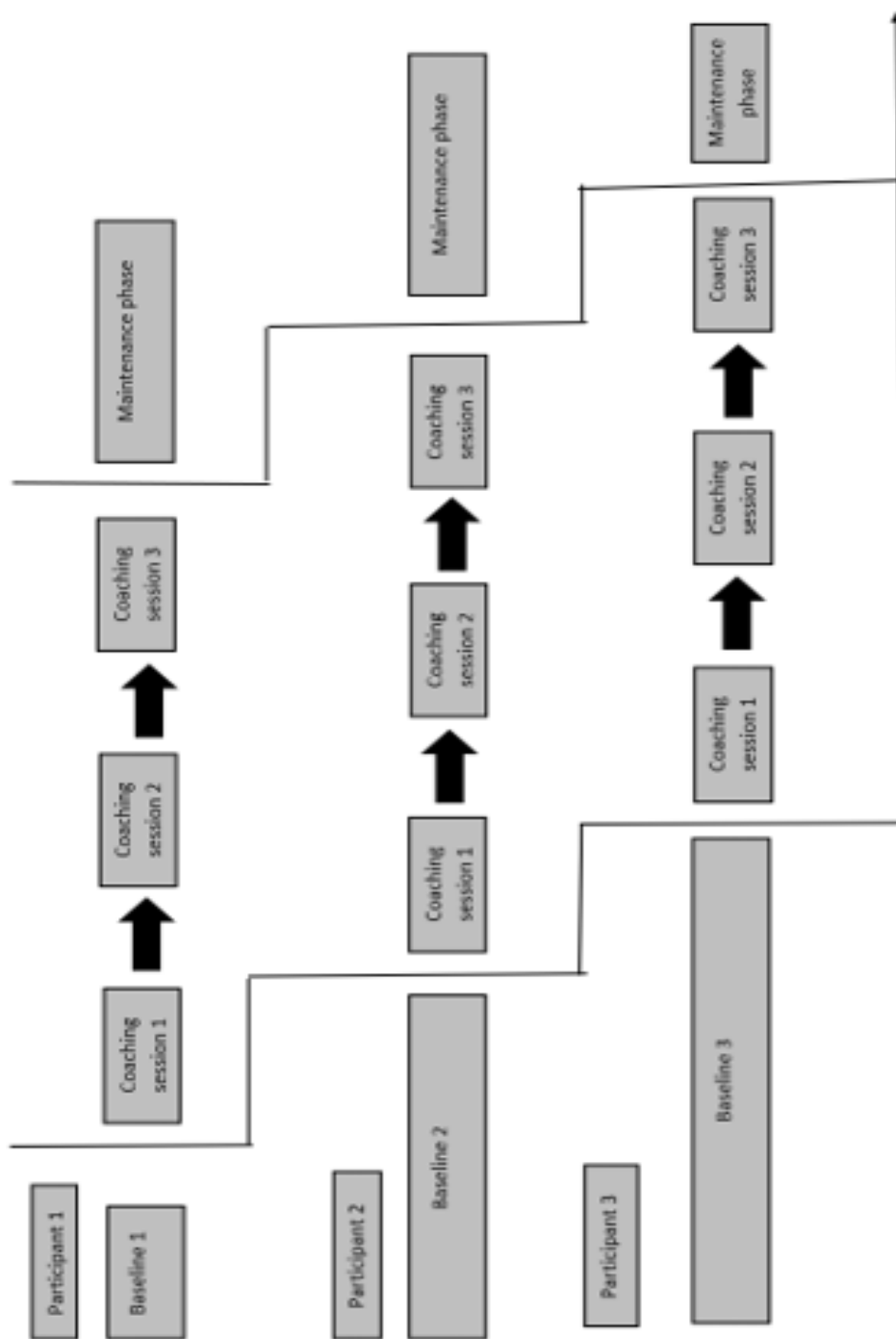
Procedural Fidelity

A Fidelity Checklist for all elements of the study, including the coaching sessions, was completed for each participant, as the study progressed. Each received three coaching sessions of 30 minutes of observation, 30 minutes of one-to-one mentorship and coaching where the teacher received constructive performance feedback, training, and outlined objectives for improved. During the meeting session, strategies for how to respond were given, and assistance was provided as needed. All participant data was documented from video on data collection sheets. Both observers used the same data collection sheet. All participants received a pre-and post-intervention study social validity scale to complete.

Data Analytic Procedures

Visual Analysis

Visual analysis was used to determine if a functional relation existed and the magnitude of effect. This involves the evaluation of six characteristics of time-series data: (a) level, (b) trend, (c) variability, (d) immediacy, (e) overlap, and (f) consistency (Lane & Gast, 2014). To standardize the process, the Primary Investigator followed the WWC design standards, which are: (1) analyze the baseline to determine if a concern is demonstrated and stable data were obtained; (2) level of data is assessed for trend and variability within each phase in isolation; (3) examination of overlap, immediacy, and consistency through cross-phrase comparison; and (4) determine if three demonstrations of an effect, at three different points in time.

Statistical Analysis

Effect sizes (ESs) were reported to compare to the results of the visual analysis. In this study, multiple effect sizes were made because there has not been a consensus in the research on the very best ES to use for single-case research (Kratochwill et al., 2013; Manolov et al., 2011). Three nonoverlap ESs were used to report effects. The first was the percent of nonoverlapping data (PND; Scruggs et al., 1987), which can be interpreted as the percentage of intervention data improved from the most extreme (lowest to highest) baseline datum. PND was selected because it has historically been used to report the effects of single-case research despite several limitations (Parker et al., 2009). The second was the nonoverlap of all pairs (NAP), which can be interpreted as the percentage of all pairs improved from baseline (Parker, et al., 2009), The last selected was Tau-U (Parker et al, 2011), which is the percentage of all pairs improved from a corrected baseline. Tau-U ES can be interpreted as *small* if scores fall between 0-0.62. If scores fall between 0.63 to 0.92, the intervention is said to have a *medium* effect. A score designated as a *large* effect falls between 0.92 and 1.00. NAP and Tau-U were used because (a) they have been shown to be robust when compared to other nonoverlap metrics, (b) the ability to calculate 95% confidence intervals, and (c) they consider all pairs of data (Parker et al., 2011). The magnitude of behavior change was analyzed using the standardized mean difference (SMD), (Hedges et al., 2012). The SMD reports the standardized units' change of intervention data compared to baseline data per phase. The SMD is sensitive in small samples and doesn't account for autocorrelation. To compute each effect size, data was entered a CSV file and entered an online calculator (Pustejovsky, 2016).

Post-intervention data on the number of office referrals, suspensions, and attendance will be analyzed through descriptive analysis to determine if there is a decline in office referrals and

suspensions and an increase in attendance of each participant's students after the intervention, compared to pre-intervention.

Interobserver Agreement and Fidelity of Implementation

Fidelity of Implementation in Coaching Sessions

All data was recorded via video and coded remotely by the Primary Investigator to eliminate the effect an observer or stranger in the classroom might have on student and teacher behavior. The Primary Investigator did not engage with any students or the classroom teacher during the 30-minute observation of the first coaching phase. The de-briefing portion of each coaching session occurred with the teacher, apart from the students, following the coach's observation. All videos were exactly 30 minutes in length. If the teacher's instructional lesson or activity adjourned prior to 30 minutes, teacher behavior continued to be scored and coded until the video reached the 30:00 mark. The Primary Investigator used the data collection form to document and coded teacher responses from the video 30-min sessions.

A second, independent observer viewed recordings to collect data and coaching sessions to document components on a fidelity checklist to ensure fidelity of implementation was maximized (Appendix D).

Interobserver Agreement. WWC indicates that at least 20% of all phases of a multiple-baseline design should be observed and inter-observer agreement (IOA) calculated. The exact count-per-interval IOA was calculated. This is the percentage of intervals in which observers record the same count and is calculated by number of intervals at 100% IOA/n intervals x 100 (Cooper, Heron and Heward, 2007).

Social Validity

Social validity measures the acceptability of interventions or strategies to determine how well they might generalize across participants, settings, and contexts. Each participant completed *The Teachers' Sense of Efficacy Scale (short form)* at the end of the intervention to capture whether the participants felt the coaching was effective at improving their competence in using these trauma-informed interventions (Appendix B).

CHAPTER 4: RESULTS

This study used a delayed multiple-baseline across participants design to evaluate the possible effects of coaching on teachers' use of trauma-informed practices that align with Trust-Based Relational Interventions (TBRI®), specifically their use of the IDEAL response to inappropriate behaviors (Call et al., 2014). The delayed multiple baseline design allows the initial baseline for each participant to be staggered for all subsequent baselines (Cooper et al., 2020). Due to limited time and resources, this variation in design allowed the researcher to collect data and conduct interventions in all phases for each participant individually. The three phases of this study for each participant are baseline, intervention phase, and maintenance phase. The data was analyzed using both a visual analysis of trend, level, immediacy, and variability, and statistical analysis from various effect size calculations of both parametric and non-parametric measurements to determine if coaching teachers on the use of the IDEAL response had a significant effect on their use of the strategy, and if the effect was large enough to declare a functional relation between coaching and the dependent variables, which were (a) frequency of IDEAL responses used per session, (b) ratio of IDEAL responses to overall responses to inappropriate behavior, (c) teachers' perception of the coaching model as beneficial and increase

their feelings of self-efficacy, and (d) will the independent effect each teachers' overall classroom attendance and use of office referrals and suspensions in response to disruptive or inappropriate behavior. Three maintenance probes were conducted for each participant to determine if the acquisition of the instructional skill was generalized and maintained over time.

In addition to using visual analysis, non-parametric and parametric measures were used to calculate the effect size of the coaching intervention. Visual analysis included using level, trend, variability, and immediacy to determine if a functional relation was present. Tau-U, a non-parametric measure was calculated by using a free, online calculator (Pustejovsky, 2016). Tau-U is often used in single-case research and has several advantages over other effect size measurements. It includes all data points and controls for trend, high sensitivity, and is easy to calculate and interpret findings. Tau-U is the percentage of non-overlapping data points and effect sizes are from -1.00 to 1.00. Effect sizes from 0 to 0.62 are described as "small" (Parker et al., 2011). Scores of 0.63 to 0.92 are described as "medium" effects. Scores higher than 0.92 are considered "large" effects.

Inter-observer Agreement

The primary researcher served as the interventionist in the study and provided coaching to all three teachers. She is completing doctoral program in Education, Administration, Curriculum & Supervision at The University of Oklahoma and is a Board-Certified Behavior Analyst (BCBA). She is a 20-year veteran in general and special education and, at the time of this study, serves as the Director of Special Education at a local school district. The second observer of this study is also currently working on her doctoral program at The University of Oklahoma in Special Education. She is also a Board-Certified Behavior Analyst (BCBA) and a former general and special educator.

Both researchers coded teacher behaviors from videotaped sessions in baseline, intervention, and maintenance phases. IOA data was calculated for at least 20% of all sessions per phase. Interobserver agreement was calculated using the exact-count-per-interval IOA, which is the most accurate measure of IOA. Exact Count-per-Interval IOA is the percentage of sessions in which observers record the same count. IOA = number of intervals at 100% IOA/ n intervals x 100. IOA for this study was 80% agreement, using the exact-count-per-interval IOA (Table 3).

Table 3. *Exact-Count-Per-Interval Interobserver Agreement*

Phases	Session	Obs. 1		Obs. 2		Agreement Score	By Phase		
		Total IDEAL Responses	Ratio IDEAL Responses	Total IDEAL Responses	Ratio IDEAL Responses		Baseline	IV	Maint.
Baseline	1	0	0%	0	0%	1	1		
Baseline	2	0	0%	3	50%	0	0		
IV	3	4	24%	4	24%	1		1	
Maintenance	4	1	31%	0	0%	0			0
Baseline	5	0	0%	0	0%	1	1		
IV	6	3	50%	3	50%	1		1	
Maintenance	7	2	50%	2	50%	1			1
Baseline	8	0	0%	0	0%	1	1		
IV	9	5	71%	5	71%	1		1	
Maintenance	10	2	22%	2	22%	1			1
						80%	75%	100%	100%

Research Question 1: Will the addition of an instructional coaching component demonstrate a functional relation to improved teachers' use of trauma-informed response strategies?

The researcher analyzed the data in two ways, (a) the overall frequency of their use of the IDEAL response (Figure 4) and (b) the ratio of IDEAL responses to their total responses to inappropriate behavior. To calculate the trend, the split-middle technique was used. The Kazdin 10% calculation was used to determine the variability of each phase (Kazdin, 1982). Statistical analysis of the aggregated data provides an omnibus effect measure.

Frequency of IDEAL Response

Anne

The baseline data level was 0.33, the trend was mostly flat with little to no variability. There was a large immediacy effect noted between the last baseline data point and the first data point of intervention phase. The level for the intervention phase was 4.66, with a positive, increasing trend and moderate variability. Maintenance phase data dropped a bit at a level of 2.66, but still held a positive, increasing trend. There was high variability in her maintenance phase (Figure 5). This could be due to the timing of the data collection, as it was toward the end of a holiday semester, and students were noted to be significantly more disengaged and hyperactive, which seemed to frustrate Anne.

Statistical analysis revealed non-overlapping data points (NAP) as 1.00 and Tau-U as 0.89, which is considered a medium effect and functional relation between the independent variable and dependent variable (Parker, et al., 2009). Standard Mean Difference (SMD) was 7.07, with a standard error of 2.24, and CI of 95% range of [2.68, 11.46] (Table 4) (Hedges et al., 2012).

Kalli

The baseline level was 0.2 with a mostly flat trend but highly variable. There was an immediacy effect noted between the last baseline data point and the first data point of the intervention phase. The level for the intervention phase was 4.2, with a positive, increasing trend and moderate variability. Maintenance phase data dropped a bit at a level of 0.20 and probes held a downward, negative trend with slight variability (Figure 5). Again, this could be in a significant difference in student disruptive behavior in holiday activities at the end of the semester which could have contributed to the teacher's inconsistent use of the IDEAL response.

Statistical analysis revealed non-overlapping data points (NAP) as 0.82 with a CI range of 95% of [0.45, 0.96]. Tau-U is 0.76, which is considered a medium effect and functional relation between the independent variable and dependent variable. Standard Mean Difference (SMD) was 1.15, with a standard error of 0.66, and CI of 95% range of [0.15, 2.44, which is a considerably smaller standard error and range than for Anne (Table 4).

Karen

The baseline level was 0.2, with a mostly flat trend and no variability. There was a small immediacy effect between the last data point in the baseline to the first data point in the intervention phase. The level of the intervention phase increased to 2.00 with a positive, increasing trend and slight variability. The maintenance level was 3.00 and highly variable, with a slightly negative, decreasing trend (Figure 5).

Figure 5.

Delayed Multiple-Baseline Design Across Participants – Total Frequency of I.D.E.A.L.
Response
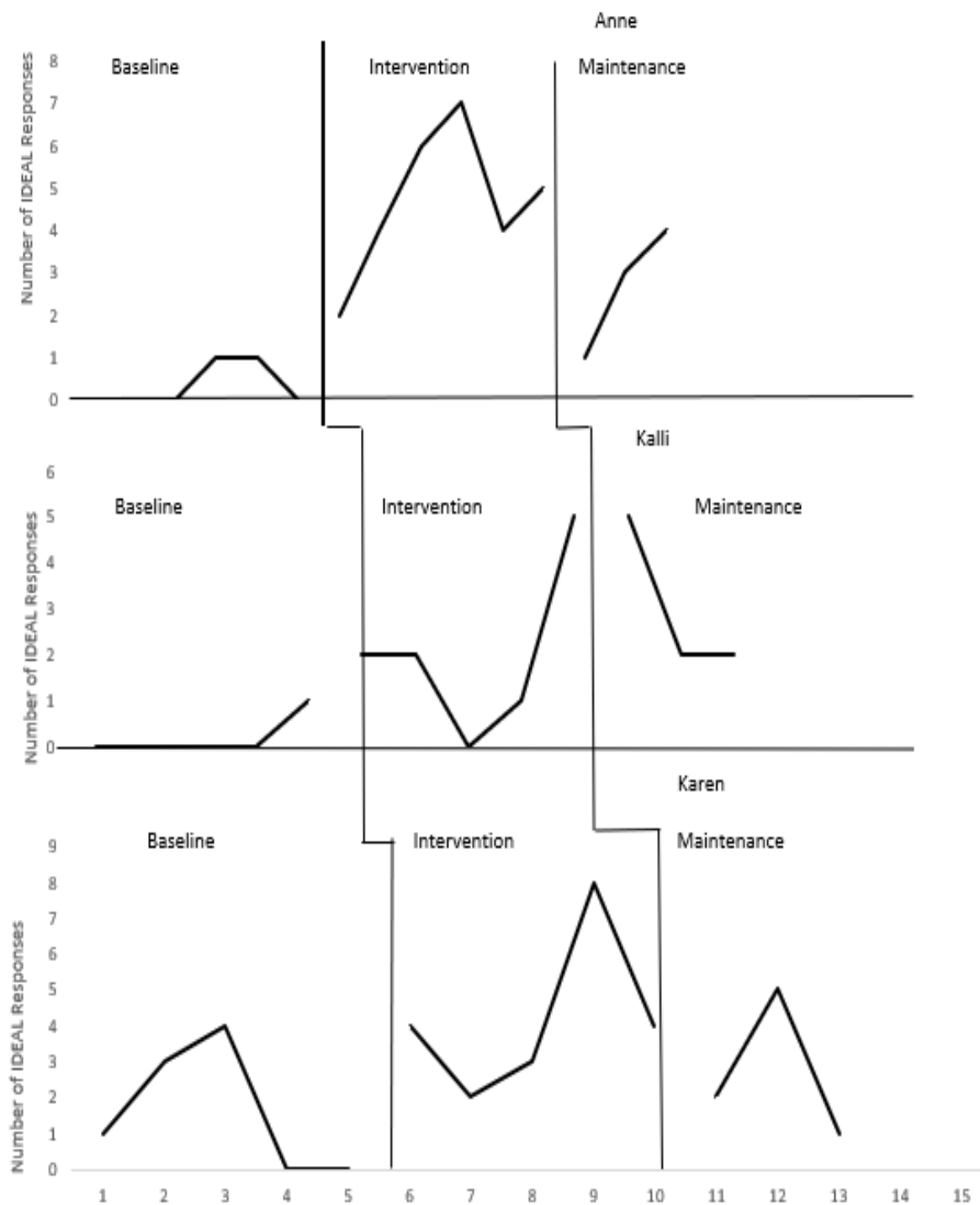
Non-overlapping pairs (NAP) was 0.86 with a standard error of 0.13 and CI at 95% range of [0.48, 0.97]. Tau-U calculations indicated an effect size of 0.56, which is a small, positive effect. Standard Mean Difference (SMD) was 3.22, with a standard error of 1.79 and 95% CI range of [-0.28, 6.72]. The overall omnibus effect sizes for teachers' overall frequency of using the IDEAL response was 0.90 for NAP, and 0.79 for Tau-U, indicating an overall medium effect. SMD was 2.38 at 95% CI range of [1.12, 3.64] (Table 4).

Table 4.

Effect Sizes of Coaching on Teachers' Total Frequency of Using IDEAL Response

Participant	NAP [CI$_{95}$]	PND	Tau-U	SMD [CI$_{95}$]	Effect Size
Anne	1.00 [1.00, 1.00]	1.00	0.89	7.07 [2.68, 11.46]	Medium
Kalli	0.82 [0.45, 0.96]	0.20	0.76	1.15 [0.15, 2.44]	Medium
Karen	0.86 [0.48, 0.97]	0.60	0.56	3.22 [-0.28, 6.72]	Small
Omnibus	0.90 [0.72, 0.96]	0.31	0.79	2.38 [1.12, 3.64]	Medium

Note. This is on data of the total frequency of participants' use of IDEAL response per session. NAP = Nonoverlap of All Pairs; PND = Percent of Nonoverlapping Data; Tau-U = Percentage of non-overlapping data point; Effect sizes are described as 0-0.62 are small, 0.63-0.92 are medium, and 0.93 + are large; SMD = Standardized Mean Difference; CI$_{95}$ = 95% Confidence Interval.

Ratio of IDEAL Responses to Total Responses to Student Behavior

While the effect size was medium to small when analyzing the frequency of the teachers' use of the IDEAL response, it doesn't demonstrate a clear picture of the teachers' improvement in their use of the learned response strategy. In some sessions, there were a high number of disruptions and inappropriate behavior, that drove the teacher to respond more frequently than at other times. After the coaching intervention, the overall climate of the classroom changed in a positive way. There were considerably fewer disruptions and inappropriate behavior. When the

teachers did respond, the percentage of times they used the IDEAL response correctly was considerably higher. When analyzing the data in this way, the results demonstrate an even more positive effect.

Anne

Baseline data level was 0.06% with a slight increasing trend but low variability. There was a small immediacy effect between the last baseline data point and first data point of the intervention phase. The level of the intervention phase increased considerably to 39%, with a positive, increasing trend and slight variability. Maintenance data indicated a very similar level of 36.5% with a positive, increasing trend and no variability (Figure 6). Statistical analysis indicated a NAP effect size of 0.94, with a standard error of 0.06 and 95% CI range of [0.62, 0.99]. Tau-U effect size was 0.75 indicating a medium effect and functional relation between the change in Anne's behavior and the intervention. SMD was 2.84 with a standard error of 1.03 and 95% CI range of [0.81, 4.66] (Table 5).

Kalli

The baseline level was 0.05%, with a mostly flat trend and slight variability. There was a large immediacy effect between the last data point of baseline and the first data point of intervention. Intervention phase level was 48% with no variability but had a flat trend. The maintenance level fell only slightly to 33% and continued the slight variability and flat trend (Figure 6). NAP effect size was 1.00 with a standard error of 0.04 and 95% CI range of [-1.00, 1.00]. Tau – U effect size was positively increasing at 1.00, which indicates a very large effect and functional relation between coaching and the change in Kalli's behavior. SMD was 3.05, with a standard error of 0.94 and 95% CI range of [1.21, 4.89] (Table 5).

Karen

Baseline level was 0.03%, with a flat trend and no variability. There was a small immediacy effect between baseline and intervention. The intervention phase level jumped to 4.8% with a flat trend but very high variability. Maintenance probes indicate a trend of 42% but with a slightly negative, downward trend and slight variability (Figure 6). NAP effect size was 0.88 with a standard error of 0.13 [0.50, 0.98]. Tau-U effect size was increasing at 0.60, which indicates only a small effect and small functional relation. SMD was 6.27, with a standard error of 3.04 and 95% CI range of [0.31, 12.24] (Table 5)

Figure 6.
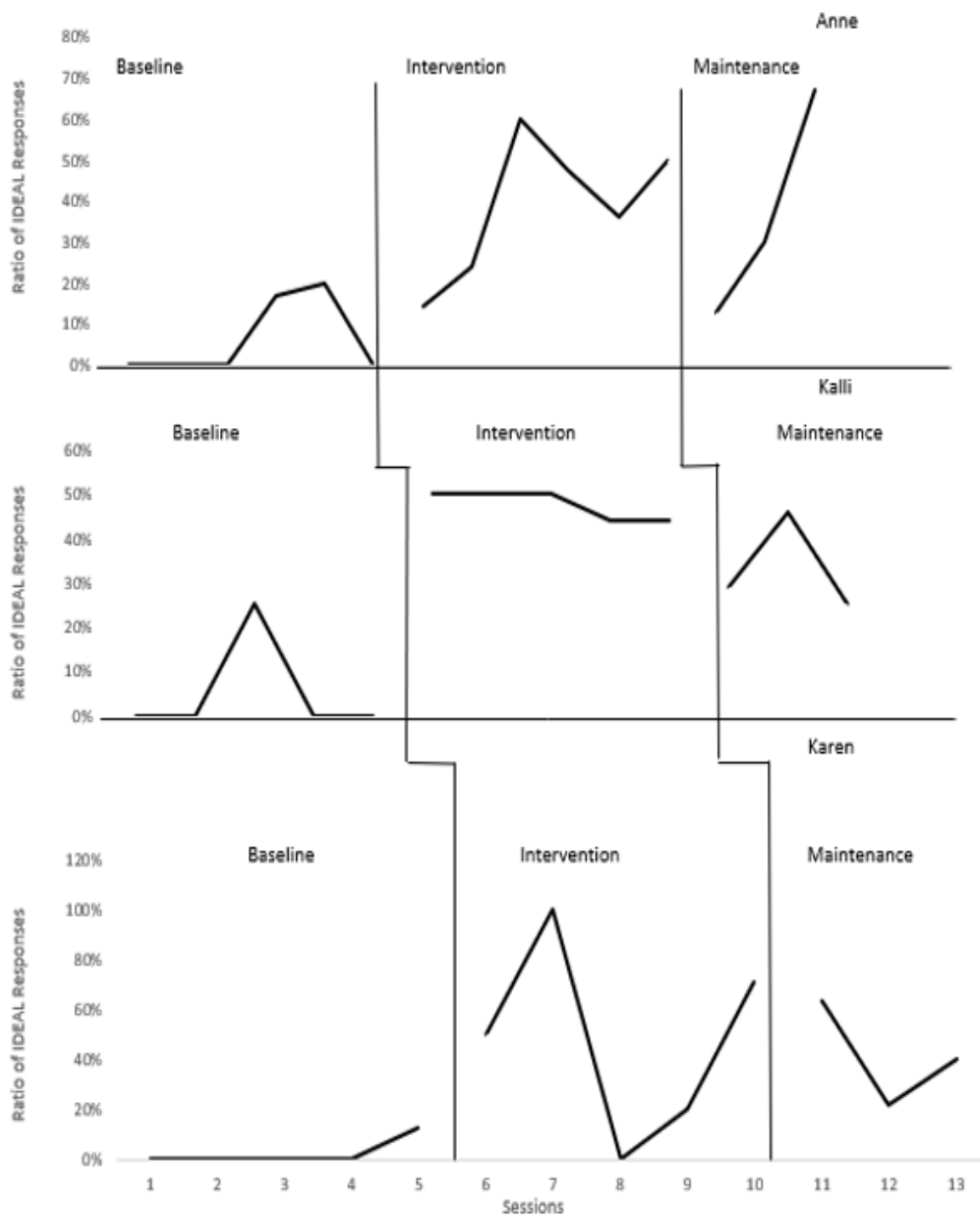*Delayed-Multiple Baseline Design Ratio of IDEAL Response*

Table 5.

Effect Sizes of Coaching on Ratio of Teachers' IDEAL Responses to Total Responses

Participant	NAP [CI$_{95}$]	PND	Tau-U	SMD [CI$_{95}$]	Effect Size
Anne	0.94 [0.62, 0.99]	0.83	0.75	2.84 [0.81, 4.66]	Medium
Kalli	1.00 [1.00, 1.00	1.00	1.00	3.05 [1.21, 4.89]	Large
Karen	0.88 [0.50, 0.98]	0.80	0.60	6.27 [0.31, 12.24]	Small
Omnibus	0.94 [0.78, 0.95]	0.75	0.88	4.34 [2.35, 6.32]	Medium

Note. This is on data indicating ratio of IDEAL responses to total responses used per session. NAP = Nonoverlap of All Pairs; PND = Percent of Nonoverlapping Data; Tau-U = Percentage of non-overlapping data point; Effect sizes are described as 0-0.62 are small, 0.63-0.92 are medium, and 0.93 + are large; SMD = Standardized Mean Difference; CI$_{95}$ = 95% Confidence Interval.

When analyzing the participants' use of IDEAL responses compared to overall responses, the omnibus effect was a medium effect at 0.88, indicating a strong functional relationship between coaching and the participants' use of IDEAL responses in the classroom. NAP effect size was 0.94 with a standard error of 0.04 95% CI range of [0.78, 0.95]. The tau-U effect size was 0.88, which is considered a medium effect. The Tau-U effect size was 0.88, which is considered a medium effect as well. The maintenance phase for all three teachers showed an increase in overall level but data was highly variable. If more maintenance probes were gathered, a definitive trend may have been apparent. SMD was 4.34, with a standard error of 1.01, and 95% CI range of [2.35, 6.32].

Research Question 2: Will participating teachers rate the inclusion of the coaching component as beneficial in increasing their feelings of self-efficacy in their implementation of trauma-informed strategies?

Social Validity

The second research question asked if teachers' feelings of self-efficacy at implementing TBRI® strategies and interventions, compared to after the coaching intervention. Using the Teachers' Sense of Efficacy Scale (short form), the researchers calculated all three participants' ratings to determine if this occurred. Each teacher completed the self-efficacy scale prior to the beginning of the first baseline session and after the conclusion of the last maintenance probe session. The scale included twelve questions for which each participant rated their level of efficacy at implementing positive change, from 1 which was "nothing much I can do" to 9, which was "A great deal I can do". The scale broke the twelve questions into three categories: (a) student engagement, (b) instructional strategies, and (c) classroom management. The purpose of this scale was to assess what effect the coaching had on each participant's sense of self-efficacy at implementing trauma-informed strategies, like the IDEAL response.

Anne

The mean score on the self-efficacy scale for Anne for both pre-and post-intervention was 8.75 under student engagement. For instructional strategies, the mean score for her for pre-intervention was 7.5. Post-intervention, her self-efficacy mean score for instructional strategies was 9.0. Her pre-intervention mean score for self-efficacy for classroom management was 8.0. This score increased post-intervention to 9.0. Anne's scores suggest an overall increase in her self-efficacy for implementing instructional strategies and improving classroom management from pre- to post-intervention (Table 6).

Kalli

As for Anne, the mean score on the self-efficacy scale for student engagement for Kalli for pre- and post-intervention was the same, 7.5. For instructional strategies, the mean score for Kalli pre-intervention was 6.75. This mean increased to 8.5 post-intervention. Under the category of classroom management, Kalli had a mean score of 8.5 for both pre-and post-intervention. The scores on the scale for Kalli suggest she felt an increased ability to be effective at implementing instructional strategies but did not feel she improved in her ability to engage students or her classroom management skills (Table 6).

Karen

The mean pre-intervention score for student engagement for Karen was 7.0. Post-intervention mean score increased only slightly to 7.25. For instructional strategies, she rated her self-efficacy pre-intervention at a mean of 7.25. This jumped to 8.0 post-intervention. Under the category of classroom management, Karen rated her self-efficacy pre-intervention at a mean of 7.0. Post-intervention mean score was 8.25, indicating an increase in her feelings of self-efficacy overall in all three categories, most significantly in classroom management (Table 6).

Table 6.

Social Validity Self-Efficacy Survey Results

			Student Engagement			
Participant	Q2	Q3	Q4	Q11	Total	Mean
Anne						
Pre	9	9	9	8	35	8.75
Post	9	9	9	8	35	8.75

Continued.

Kalli

Pre	9	6	8	7	30	7.5
Post	7	8	8	7	30	7.5

Karen

Pre	8	6	8	6	28	7.0
Post	8	7	8	6	29	7.25

Note. Q2: How much can you do to control disruptive behavior in the classroom? Q3: How much can you do to motivate students who show low interest in schoolwork? Q4: How much can you do to help your students value learning? Q11: How much can you assist families in helping their children do well in school?

Instructional Strategies

Participant	Q5	Q9	Q10	Q12	Total	Mean
Anne						
Pre	7	7	9	7	30	7.5
Post	9	9	9	9	36	9.0
Kalli						
Pre	5	6	8	8	27	6.75
Post	8	9	9	8	34	8.5
Karen						
Pre	7	8	7	7	29	7.25
Post	9	8	7	8	32	8.0

Note. Q5: To what extent can you craft good questions for your students? Q9: How much can you use a variety of assessment strategies? 10: To what extent can you provide an alternative explanation for example when students are confused? Q12: How well can you implement alternative strategies in your classroom?

Continued.

Classroom Management

Participant	Q1	Q6	Q7	Q8	Total	Mean
Anne						
Pre	7	9	9	7	32	8.0
Post	9	9	9	9	36	9.0
Kalli						
Pre	9	9	9	7	34	8.5
Post	9	8	9	8	34	8.5
Karen						
Pre	7	7	7	7	28	7.0
Post	8	9	8	8	33	8.25

Note. Q1: How much can you control disruptive behavior in the classroom? Q6: How much can you do to get children to follow classroom rules? Q7: How much can you do to calm a student who is disruptive or noisy? Q8: How well can you establish a classroom management system with each group of students?

Research Question 3: Will the increase in teachers' use of this trauma-informed strategy have a positive effect on the overall attendance rate of his/her classroom?

Attendance. The average of quarterly absences for Anne prior to the intervention was 3.44 absences. Post-intervention, this rose to 3.85. This is almost half of the average absence-per-student for that elementary school. Kalli's average quarterly absences were 3.15 absences for the first quarter. Post-intervention this also rose to 4.25. The average absence per student at which the elementary school Kalli teaches is 1.96. Karen's quarterly absence average went from 6.33 in quarter 1 to 2.17 post-intervention. The average absence per student at which the elementary school Karen teaches is 3.57. She was the only one who had considerably better

attendance with her students as she gained competency in using the intervention strategy (Table 7).

Research Question 4: With the improvement in teachers' use of the IDEAL response result in a reduction in his/her office referral and/or suspensions of students with challenging behaviors?

Anne

This classroom consisted of 20 kindergarten students. Prior to the intervention, first-quarter data indicated that the teacher only referred to the office one time and gave no suspensions. After the intervention, she did not refer one student to the office, resulting also in zero suspensions or formal discipline for any student.

Kalli

This classroom consisted of 20 first-grade students. Prior to the intervention, data indicated that she also only referred one student to the office one time and gave no suspensions. She also did not refer any student to the office and no students received any suspensions in the second quarter, which was post-intervention.

Karen

This classroom consisted of 18 kindergarten students. For the first quarter, Karen referred a student to the office three times and gave no suspensions. Following the intervention, she did not refer another student to the office for discipline, resulting in zero suspensions (Table 7).

Table 7.

Discipline and Attendance Data per Participant's Classroom

	Measure	Q1 (Pre-Study)	Q2 (Post-Study)
Anne	Office Referrals	1	0
	Suspensions	0	0
	Mean Absences	3.44	3.85
Kalli	Office Referrals	1	0
	Suspensions	0	0
	Mean Absences	3.15	4.25
Karen	Office Referrals	3	0
	Suspensions	0	0
	Mean Absences	6.33	2.77

Note. Attendance taken for full quarters 1 and 2. Quarter 1 was prior to first intervention phase. Quarter 2 data was taken during and post-intervention.

CHAPTER 5 : DISCUSSION

The first research question was "*Will the addition of an instructional coaching component demonstrates a functional relation to improved teachers' use of trauma-informed response strategies?"* The trauma-informed response to student behavior that was measured as the dependent variable was a correcting procedure called the IDEAL response. This acronym stands for "*Immediate, Direct, Effective, Action-based, and Leveled"*. All three teachers' baseline data points were very low or at zero, flat trend and virtually no variability. This means none of them used this response hardly at all when responding to student behavior. Once they received the coaching interventions, all three teachers increased their use of the strategy.

Anne showed the most significant immediacy effect following the coaching session. Post-intervention, her data remained high, with a positive trend, but was variable. Statistical analysis showed that the coaching intervention had a medium effect size, which indicates a medium functional relation between the intervention and the change in her behavior. Kalli's data also indicated a medium functional relation between the intervention and her use of the IDEAL strategy.

After the coaching intervention, there was a smaller immediacy effect on her use of this strategy. Although the level of her post-intervention data increased, it was variable and indicated a smaller effect size, thus a small functional relation between coaching and her use of the strategy.

All three participants' maintenance probe data was lower and showed a slight negative, downward trend. Karen's data in all three phases of the study was the most variable. The investigator noted that Karen's focus on implementation varied in the three coaching sessions as well, which could have affected her performance.

Of all three participants, Anne showed the sharpest increase in her frequency of using the IDEAL response. She was a very quick learner and showed more enthusiasm and eagerness to learn how to implement this strategy, in the coaching sessions than the other participants. She often made comments during the coaching sessions about how much she enjoyed the coach's presence in the classroom and welcomed feedback frequently. She even wrote down questions she had for the coach and asked them in each of the coaching sessions. The overall omnibus effect was medium.

The disadvantage of only analyzing the frequency of each participant's use of this strategy, is that the overall number of times each teacher had to react to any student's behavior varied from day to day and from each other. For example, as a first-year teacher, Anne had fewer classroom management strategies employed consistently than the other more experienced teachers. She also had the classroom with the largest number of students with challenging behaviors. In each session, she had to respond to student behavior much more frequently than the other two. Kalli's classroom was very structured, with consistently implemented classroom management procedures, that limited the number of times she ever had to respond to student behavior. Karen had the most variability in the number of times she had to respond to students. There were only one or two students with consistently challenging behaviors. When they were out of the room briefly or absent, this affected the number of times she needed to respond. For this reason, it was important to look at each teacher's ratio of responding with the IDEAL response, compared to their overall total responses. This would be a more accurate depiction of their data.

After baseline, all three teachers increased their ratio of IDEAL responses, with a positive, increasing trend. Anne showed a small immediacy effect but little to no variability. This is explained by the fact that, as she responded frequently to student behavior, she gradually increased the ratio of IDEAL responses until she was almost exclusively using the strategy. Her data was very low in variability and maintenance data stayed high, with no variability. The investigator noted that Anne was the one participant who asked the most questions and for the most feedback after she would respond to a student to better implement the strategy with fidelity. While it took her a bit to learn it, she applied herself, and became very effective at using it with

fidelity. Overall, data indicated a medium effect, thus a medium functional relation between coaching and the IDEAL strategy.

Kalli showed a large immediacy effect, post-intervention. Her data continued with a positive, increasing trend, with very little variability. Her maintenance fell slightly. She showed the most improvement overall. The effect size for her data was large, indicating a large functional relation between coaching and her use of the strategy. Kalli had a very well-behaved class overall. She also had good classroom management procedures already put in place. She had to respond to student outbursts with much less frequency, but when she did, she quickly applied this strategy and began exclusively using it.

Karen showed the slowest and lowest immediacy effect following the coaching intervention. However, post-intervention data did increase in a positive trend, although highly variable. She showed the smallest effect, indicating only a small functional relation between coaching and her use of the strategy. This can partly be explained by the variability in attendance of one or two students during the research period. These students demonstrated most of the disruptive behavior requiring her to respond. It was also noted that Karen asked the least number of follow-up questions during the coaching session and for less performance feedback. When she did ask the coach for information or clarification, it was typically student-specific, and oriented to how the coach might "help" the student, rather than focusing on training her to respond and help the student. The investigator noted that, in the beginning of the study, while interviewed, Karen referred to the intervention as the "student's intervention" and it seemed she clearly saw the role of the coach as someone there to help the student, requiring little of her. I think this parallels the data, in that she responded with less change over time and little maintenance of the skill over time.

All three participants had variable years of experience, which interestingly mirrored their frequency and ratio data on using the new trauma-informed strategy taught to them by a coach. Anne, with the least number of years' experience, showed the most consistently high use of the strategy, asked for the most performance feedback and implemented it with the most fidelity. Kalli, with the second highest number of years, showed only slightly less use of the strategy. Karen, with the most years of experience, showed less enthusiasm during the coaching sessions, asked for less feedback, and less clarification, and showed the smallest improvement in her use of the strategy, compared to the others.

The second research question was *"Will participating teachers rate the inclusion of the coaching component as beneficial at increasing their feelings of self-efficacy in their implementation of trauma-informed strategies?"*

The Teachers' Sense of Self-Efficacy Scale is broken up into three sections (1) Student Engagement, (2) Instructional Strategies, and (3) Classroom Management, under which specific questions are asked of teachers to rate. Student engagement questions asked teachers how much they think they can control disruptive behaviors in the classroom, how well they can motivate students with low interest in learning, how much they can help students value learning, and assist families in helping their children do well in school. Each teacher rates their self-efficacy from 1, which is very little, to 9, which means they feel highly effective. All three participants rated themselves around the mid-to-high range and scored no higher in their post-survey than they did in their pre-survey. This indicates that all three teachers felt moderately effective at keeping students engaged, and motivated, and in their ability to help students and their families.

The second section focused on Instructional Strategies. This section asked teachers to rate their effectiveness at good crafting questions, using a variety of assessments, providing

alternative explanations, and implementing different strategies in the classroom. Anne's score pre-intervention was 7.5. This increased to 9.0, which is the highest score on self-efficacy. This means she felt she increased her ability to effectively implement instructional strategies after receiving coaching. Kalli's score also increased from 6.75 to 8.5 in how effective she felt at implementing instructional strategies after coaching sessions with the investigator. Karen rated her self-efficacy in instructional strategies at 7.25 before the coaching. After the coaching, her score only slightly increased. This suggests she felt the coaching helped somewhat but not significantly in instructional strategies.

Classroom management is the last section in the self-efficacy scale. This section, it asks teachers to rate their self-efficacy in controlling disruptive behavior, getting them to follow classroom rules, how well they calm noisy or disruptive students, and establishing a classroom management system with all students.

Anne had the highest number of students in her classroom with the disruptive behavior of all three participants. Kalli had the very best classroom management skills and procedures and overall well-behaved, engaged students. Karen had the most experience in classroom management but had a few students who exhibited frequent disruption. Anne rated her ability to handle classroom management as 8.0. This increased to 9.0 after coaching. She clearly felt quite effective at overall classroom management, even though she did not have consistent procedures in place at the time of the intervention. Kalli showed no change in her pre- and post-coaching self-efficacy scores in classroom management. This implies she felt coaching did not improve her ability to handle disruptive behaviors and overall classroom management. Karen rated her effectiveness in classroom management at 7.0. It raised to 8.25, which is a larger jump in scores than the other two. Interestingly, this data may suggest that Karen, with the most experience,

rated herself the lowest, but felt coaching helped the most. Anne, with the least experience, rated herself the highest and had very little improvement in her scores. When you analyze this with the data on their use of the IDEAL strategy in mind, it reveals interesting results. The data for Anne and Karen both showed a functional relation and positive effect between coaching and their use of the IDEAL strategy, but they rated their self-efficacy on classroom management as only improving slightly.

Kalli rated her self-efficacy in classroom management the same pre-and post-intervention. This means she felt it did not improve her ability to use classroom management strategies. However, her data indicated the largest effect and largest functional relation between coaching and her use of the IDEAL response.

The third research question was *"Will the increase in teachers' use of these trauma-informed strategies have a positive effect on the overall attendance rate of his/her students?"* Some studies on the use of positive behavior interventions and support classroom teachers have found that attendance of students generally increases (absences decrease) (Leiter, J., 2007).

For this study, the average absences were calculated for each participant for the entire first quarter, prior to the study and introduction of coaching, and following the intervention to determine if each teacher's classroom average of absences decreased after she began implementing this trauma-informed strategy. For both Anne and Kalli, their average absences per quarter increased after the introduction of this intervention. Karen's absences decreased from 6.33 in the first quarter, to 2.17 in the second quarter. There are several variables that might explain the increase in their absences that have nothing to do particularly with the interventions they employed. The first quarter's overall rate of absences for the school was quite low, compared to the second quarter. All three teachers reported to the investigator that this was

largely due to a high rate of illness among students. The investigator noted that several students in both Anne's and Kalli's classrooms became very ill with COVID-19 and were frequently absent. This increased their mean absences per quarter. On the other hand, Karen's classroom did not have as many illnesses in quarter 2. As reported before, her absences per quarter reduced in quarter 2. However, there is not a clear, definitive link between the use of this trauma-informed strategy and a reduction in absences.

The last research question was *"With the improvement in teachers' implementation of trauma-informed strategies result in a reduction in his/her office referral and/or suspensions of students with challenging behavior?"* Anne and Kalli had both only referred one student to the office, which resulted in no suspensions in the first quarter, prior to the beginning of this study. After the introduction of the coaching intervention, neither Anne nor Kalli referred another student to the office. Karen had referred three students to the office, in the first quarter; however, none of them were suspended. After the coaching intervention, she did not refer another student to the office. While this is a small improvement in calculations, the quality of classroom management skills each participant gained was evident to the investigator as they became more efficient with using the trauma-informed strategy. While no student data was obtained for the purposes of this study, the investigator subjectively noted an overall improvement in classroom management and each participant's use of the IDEAL response and their prevention and reaction to student behavior.

Limitations

One of the limitations to the experimental design of this study is that the three baselines are staggered in a delayed multiple-baseline design. This was due to the three participants not

being ready to engage in the study at the same time. Each participant beginning baseline data simultaneously would perhaps yield a stronger research design.

Another limitation of this study is the small dosage of the intervention. There were only three coaching sessions, as part of the intervention. Future researchers replicating this study, or those like it, might reveal a more significant functional relation between independent and dependent variables with more coaching sessions.

While frequency and ratio of responses were measured for each teacher on their use of the IDEAL response, the *quality* of their implementation of the intervention was not captured, but subjectively noted by the investigator. It was evident in the video sessions that each participant became more efficient at implementing this strategy with practice and over time. This likely led to an improvement in student engagement and behavior.

Implications

The results of this research highlight the potential benefit instructional coaching might be in professional development models for classroom teachers. Particularly to assist teachers in using trauma-informed strategies or any complicated behavioral intervention, this study notes that coaching that incorporates modeling, practice, and performance feedback to teachers had a positive impact on their use of those strategies and the fidelity with which they demonstrated them. The implications for using coaching as part of teacher training will undoubtedly require consideration of time, effect, buy-in, and the costs to school districts when hiring and using instructional coaches. It might be more beneficial to teachers for districts to appropriate more money into instructional coaching rather than only follow-up didactic, "sit-and-get" lectures.

Future Research

This research focused on the individual teachers' response to a coaching component of professional development using the IDEAL response. Student data was not analyzed; thus, it is unknown how the improvement of the teachers' overall classroom management affected students' daily performance. Future research might add a student outcome component to their dependent variables, in connection with teachers' use of evidence-based practices in trauma-informed strategies to investigate what effect it might have on their performance.

It might be beneficial and contribute more to the literature if the replication of this study includes additional dosages of the independent variable, coaching. Rather than only three coaching sessions, for 30 minutes, a more substantial functional effect might be found between coaching and teacher behavior.

Lastly, researchers studying coaching teachers in the use of trauma-informed strategies might consider taking qualitative data on *how well* the teachers implemented the strategy. In other words, it would be helpful to capture the *quality* of their use of the strategy, rather than only the frequency or ratio of their use of the intervention.

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APPENDIX A

DATA COLLECTION FORM

OBSERVER/CODER: _____ TIME OF INSTRUCTIONAL LESSON: _____ TOTAL VIDEO TIME: _____

DATE:

LEGEND: *Each teacher response to student behavior is scored in separate boxes.*

Teacher Response 1: (insert time_____)

Feature	Description	Point
I *Immediate*	Respond and in close temporal proximity to behavior (within 5 sec)	
D *Direct*	Uses eye contact, and/or student's name, approaches or brings near in close physical proximity (within approximately 3-4 feet)	
E *Efficient/effective*	Uses least amount of firmness, correction, and verbal intensity as required to be effective at reducing or correcting student behavior	
A *Action-based*	Redirects student to practice an appropriate behavior (re—dos) or instructs them what to do, rather than what not to do. Follows with praise	
L *Leveled*	Avoids rejection or judgment of child. Only responds and relates to their behavior.	

APPENDIX B

Teachers' Sense of Efficacy Scale[1] (short form)

Teacher Beliefs	How much can you do?								
Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.	Nothing	Very Little		Some Influence		Quite A Bit		A Great Deal	
1. How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2. How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3. How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4. How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5. To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7. How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8. How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9. How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10. To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11. How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12. How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Directions for Scoring the Teachers' Sense of Efficacy Scale[1]

Developers: Megan Tschannen-Moran, College of William and Mary
                   Anita Woolfolk Hoy, the Ohio State University.

Construct Validity

For information the construct validity of the Teachers' Sense of Teacher efficacy Scale, see:

> Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing and elusive construct. *Teaching and Teacher Education, 17,* 783-805.

Factor Analysis

It is important to conduct a factor analysis to determine how your participants respond to the questions. We have consistently found three moderately correlated factors: *Efficacy in Student Engagement, Efficacy in Instructional Practices,* and *Efficacy in Classroom Management,* but at times the make up of the scales varies slightly. With preservice teachers we recommend that the full 24-item scale (or 12-item short form) be used, because the factor structure often is less distinct for these respondents.

Subscale Scores

To determine the *Efficacy in Student Engagement, Efficacy in Instructional Practices,* and *Efficacy in Classroom Management* subscale scores, we compute unweighted means of the items that load on each factor. Generally these groupings are:

> ##### Long Form
> *Efficacy in Student Engagement*:   Items   1, 2, 4, 6, 9, 12, 14, 22
> *Efficacy in Instructional Strategies*:   Items   7, 10, 11, 17, 18, 20, 23, 24
> *Efficacy in Classroom Management*:   Items   3, 5, 8, 13, 15, 16, 19, 21
>
> ##### Short Form
> *Efficacy in Student Engagement*:   Items   2, 3, 4, 11
> *Efficacy in Instructional Strategies*:   Items   5, 9, 10, 12
> *Efficacy in Classroom Management*:   Items   1, 6, 7, 8

Reliabilities

In Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing and elusive construct. *Teaching and Teacher Education, 17,* 783-805, the following were found:

	Long Form			**Short Form**		
	Mean	SD	alpha	Mean	SD	alpha
OSTES	7.1	.94	.94	7.1	.98	.90
Engagement	7.3	1.1	.87	7.2	1.2	.81
Instruction	7.3	1.1	.91	7.3	1.2	.86
Management	6.7	1.1	.90	6.7	1.2	.86

[1] Because this instrument was developed at the Ohio State University, it is sometimes referred to as the *Ohio State Teacher Efficacy Scale.* We prefer the name, *Teachers' Sense of Efficacy Scale.*

APPENDIX C

**WWC DESIGN QUALITY STANDARDS, CODES AND OPERATIONAL
DEFINITIONS (U.S. DEPARTMENT OF EDUCATION, 2016)**

Description of Single-Case Design Standards and Study Review

Possible Score Score	Criteria for Score	Study
Design Standard 1:	Manipulation of Independent Variable	
1	The study reported manipulation of IV	1
0	Study did not report manipulation of IV	
Design Standard 2A:	IOA Reported	
1	Study reported the IOA score	1
0	Study did not report IOA score	
Design Standard 2B:	IOA Frequency	
2	Study reported IOA for minimum of 20% of sessions within each condition	2
1	Study reported IOA for minimum of 20% of sessions, but did not disaggregate the score by phase or condition	
0	Study reported IOA for less than 20% of sessions	
Design Standard 2C:	IOA Quality	
1	IOA reported in study met minimum quality thresholds (i.e., at least 80% for percentage agreement indices or 60% for *kappa* measures).	1
0	IOA reported in study did not meet minimum quality thresholds (i.e., less than 80% for percentage agreement indices or 60% *kappa* measures).	
Design Standard 3:	Demonstration of treatment effects	
1	Study included a minimum of three attempts to demonstrate treatment effects at three different points in time. For alternating treatment designs, study must include at least two conditions.	1

Continued.

0	Study did not include a minimum of three attempts to demonstrate treatment effects at three different points in time, nor did not include at least two conditions for alternating designs.	

Design Standard 4:   Number of Data Points Per Phase

2	Study included at least five data points in baseline and intervention phases. For alternating treatment designs, study included at least 5 data points per treatment for baseline and intervention phases.	2
1	Study included at least 3 data points in baseline and intervention phases. For alternating treatment designs, the study included at least 4 data points per treatment for baseline and intervention phases.	
0	Study included less than 3 data points in baseline and intervention phases. For alternating treatment designs, study included less than 4 data points per treatment for baseline and intervention phases.	

Design Standard 5A (Multiple-Probe Designs Only): Initial Baseline Sessions   N/A

2	Study included at least three consecutive data points within the first three sessions of baseline for each level.	
	Study included at least one data point within the first session of baseline for each level.	1
	Study did not include at least one data point within the first session of baseline for each level.	0

Design Standard 5B (Multiple-Probe Designs Only): Probe Points Prior to Intervention

N/A

2	Study included at least three consecutive data points immediately prior to introducing intervention for each level	
1	Study included at least one data point immediately prior to introducing intervention for each level	
0	Study did not include at least one data point immediately prior to introducing intervention for each level.	

_____

Continued.

Design Standard 5C (Multiple-Probe Designs Only): Additional Considerations   N/A

1	Each level that was still in baseline when intervention is introduced had a data point when previous level(s) first received intervention or when previous level(s) reached the prespecified intervention criterion AND this data point is consistent in level and trend with the previous baseline data point in that level
0	Each level that was still in baseline when intervention was introduced did not have a data point when previous level(s) first received the intervention or when previous level(s) reached the prespecified intervention criterion OR this data point was not consistent in level and trend with previous data points in that level.

APPENDIX D

Fidelity of Coaching Components

Activity	Completed
Consent meeting	
Obtain informed consent	☐
Provided teacher with self-efficacy scale	☐
Reviewed his/her scaled items on Self-Efficacy Scale	☐
Reviewed point of research study	☐
Gathered demographical information from form	☐
Discussed details of videotaping, and observations	☐
Coaching Session 1 30-minutes with no interaction w/ teacher or students) Documenting performance	☐
30-minutes meeting one-on-one with teacher and discussing performance feedback on the responses he/she had to student behaviors	☐
Determined objectives for teacher to improve on performance	☐
Discussed strategies and answered questions	☐
Coaching Session 2 30-minutes with no interaction w/ teacher or students) Documenting performance	☐
30-minutes meeting one-on-one with teacher and discussing performance feedback on the responses he/she had to student behaviors	☐
Determined objectives for teacher to improve on performance	☐
Discussed strategies and answered questions	☐
Coaching Session 3 30-minutes with no interaction w/ teacher or students) Documenting performance	☐
30-minutes meeting one-on-one with teacher and discussing performance feedback on the responses he/she had to student behaviors	☐
Determined objectives for teacher to improve on performance	☐
Discussed strategies and answered questions	☐
Post-intervention Provide teacher with Teacher Self-Efficacy Scale to complete, collect, debrief	☐