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INCREASING TRAUMA-INFORMED APPLIED BEHAVIOR ANALYSIS IN PUBLIC
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INCREASING TRAUMA-INFORMED APPLIED BEHAVIOR ANALYSIS IN PUBLIC
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Dedication

To children from hard places—

to your strength, courage, and resilience.

May you always be seen, supported, and reminded of your worth.

Your stories matter, and your future holds hope.

Acknowledgements

Most importantly, to my husband and kids, who may not fully understand my love for learning, but who have supported me through every academic endeavor. Your patience, sacrifices, and willingness to share this dream with me have meant more than I can ever express. **I love you most.**

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reminded me that I was capable and that everything did not have to be solved in a single day. In seasons that felt overwhelming, you helped me regain perspective and breathe again.

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Abstract

Childhood trauma affects nearly half of U.S. students, impairing behavior, learning, and long-term outcomes; yet school counselors lack training in trauma-informed applied behavior analysis (ABA). This single-case multiple baseline study across four school counselors evaluated micro-training, a brief behavioral skills training package, to increase the use of trauma-informed ABA practices during grade-level social skills groups in a Title I public school. This study fills an important gap by combining trauma-informed care with ABA. Results showed a functional relation in all four participants, who also found the research socially valid. Micro-training provides a feasible way to close training gaps, allowing school counselors to implement evidence-based, trauma-sensitive interventions without disrupting routines. Limitations and future research directions are included in the discussion chapter.

Keywords: trauma-informed, applied behavior analysis, Title I, micro-training, school counselors, multiple baseline

CHAPTER 1

Introduction

Childhood trauma extends beyond a single event; it has a lifelong impact that influences a child's brain development, behavior, and future functioning (Felitti et al., 1998). Also known as an adverse childhood experience (ACE), childhood trauma is widespread in the United States, affecting nearly 50% of children (Bethell et al., 2017; Sacks & Murphey, 2018). Experiencing adverse events during childhood can harm a child's health by weakening immune and hormonal systems, increasing rates of diabetes and cancer, and decreasing life expectancy by an estimated 20 years (Felitti et al., 1998). Emotional consequences (e.g., anxiety, depression, persistent emotional dysregulation) are common following childhood trauma (Lindert et al., 2014; Watters et al., 2021). Such emotional responses often lead to behavioral challenges, including hyperactivity, withdrawal, and aggression (Conkbayir, 2017; Flatau, 2018; Webber, 2017). Repeated exposure to ACEs is linked to long-term cognitive and academic challenges, including learning disabilities, poor academic performance, increased absenteeism, and higher rates of disciplinary actions (e.g., detention, suspension), and elevated dropout rates (Brunzell et al., 2015; National Child Traumatic Stress Network [NCTSN], 2014). Traumatic experiences can trigger a persistent fight-or-flight response, leading to social difficulties that may impede academic success, relationship formation, and trust in adults (Rose et al., 2016). Collectively, these factors can exacerbate poverty and economic hardship, contributing to intergenerational cycles of disadvantage.

Childhood adversity lacks a single definition because it is multifaceted and context-dependent. To address this complexity, the Substance Abuse and Mental Health Services Administration (SAMHSA, 2014) developed a cross-sector approach for childhood trauma, including education. This framework established standards for defining trauma and developing

trauma-informed approaches (Chafouleas et al., 2016; Frankland, 2021; Overstreet & Chafouleas, 2016; Perfect et al., 2016; SAMHSA, 2014). SAMHSA (2014) describes trauma as widespread and resulting from exposure to one or more emotionally upsetting or life-threatening events, which can cause lasting negative effects on a person's ability to function and their mental, physical, social, emotional, or spiritual health. Various emotionally distressing or life-threatening events qualify as traumatic experiences.

ACEs, as defined by Felitti et al. (1998), refer to a range of potentially traumatic experiences occurring before the age of 18, including abuse (physical, emotional, and sexual), neglect (physical and emotional), and household dysfunction (e.g., caregiver substance use, mental illness, domestic violence, or incarceration). These categories formed the basis of the original ACE framework and have been widely used to examine the cumulative impact of early adversity on health and developmental outcomes. However, subsequent research has expanded the conceptualization of childhood adversity to include additional stressors not captured in the original ACE study, such as exposure to community violence, natural disasters, war, displacement, and traumatic medical experiences (Fondren et al., 2020; Leban & Masterson, 2022). Although these experiences are not part of the original ACE index, they are recognized as significant sources of trauma that can similarly disrupt development and contribute to adverse behavioral, academic, and health outcomes. Distinguishing between the original ACE framework and broader definitions of childhood trauma is essential for conceptual clarity and accurate interpretation of research findings across studies (Fondren et al., 2020; Leban and Masterson, 2022). According to Felitti et al. (1998), children who experience one ACE are 80% more likely to face additional ACEs later. The NCTSN (2014) and Spinazzola et al. (2017) state that children

exposed to multiple traumatic events or recurrent ACEs develop complex trauma, leading to long-lasting negative effects.

The impact of early adversity is commonly quantified using an ACE score, which ranges from zero to ten and reflects cumulative exposure to abuse, neglect, and household dysfunction prior to the age of 18. This cumulative index demonstrates a well-established dose-response relationship, in which the likelihood and severity of negative outcomes rise with increasing exposure to adversity (Campbell et al., 2016; Felitti et al., 1998). Although even a single adverse experience can have lasting effects, an ACE score of four or higher is associated with a significantly elevated risk of disruptions in brain development, chronic health conditions, and long-term psychological impairments (Campbell et al., 2016; Felitti & Anda, 1997; Felitti et al., 1998). Importantly, these risks are further amplified by co-occurring environmental stressors (e.g., living in unsafe or unstable housing plus neighborhood violence or food insecurity plus parental unemployment or poverty), highlighting the compounding nature of adversity across ecological contexts (Courtois, 2004; Frankland, 2021; Spinazzola et al., 2017). The likelihood of negative outcomes rises with the number of traumatic experiences and environmental risk factors a child faces (Frankland, 2021; NCTSN, 2014; Souers & Hall, 2016; Spinazzola et al., 2017).

Exposure to childhood trauma is not evenly distributed across populations. Substantial disparities exist with racially and ethnically marginalized groups (e.g., Black, Hispanic, Native American) (Maguire-Jack et al., 2020). Similarly, children identifying as part of the Queer community, those with intellectual or developmental disabilities, and those living in rural areas, military, or economically disadvantaged contexts, face elevated exposure to adversity (Peterson, 2018). These intersecting risk factors not only increase the likelihood of experiencing trauma but

also intensify its developmental and educational impact, underscoring the need for equitable, contextually responsive interventions.

Significance of Trauma-Informed Care (TIC)

With more than 56 million children enrolled in United States schools (National Center for Education Statistics, 2018), educational settings are critical contexts for addressing the effects of trauma. Given the prevalence of adversity, where a majority of youth report at least one traumatic experience by adolescence (Connell et al., 2018), schools must be prepared to respond to the behavioral and learning needs associated with trauma exposure. Recent advances in understanding the psychological, physiological, and social impacts of adversity, stress, and trauma have raised the demand for educators to be knowledgeable about trauma and its developmental effects. However, trauma can significantly interfere with a student's ability to engage in traditional learning environments, creating a fundamental mismatch between instructional expectations and students' developmental readiness. Given this, schools are encouraged to adopt trauma-informed practices (Frankland, 2021; Jones et al., 2018; Perfect et al., 2016).

Empirical evidence consistently links trauma exposure to poor educational outcomes (e.g., increased absenteeism, increased dropout rates, lower GPAs, decreased reading skills), resulting in a substantial learning divide with consistently lower reading levels, social regulation skills, and reduced executive functioning skills (American Psychological Association, 2021; Fondren et al., 2020). Students with complex trauma histories are particularly vulnerable, demonstrating higher rates of negative academic outcomes and significantly lower graduation rates compared to their peers (Chartier et al., 2010; Metzler et al., 2017; NCTSN, 2014).

In many cases, students affected by trauma are referred for special education based on observable academic or behavioral difficulties, often without adequate consideration of underlying factors (Winder, 2015). The absence of a specific classification for trauma-related needs contributes to the potential misidentification and overrepresentation in certain disability categories (Kataoka et al., 2018). Consequently, Individualized Education Programs (IEPs) may inadequately address the core impacts of trauma, focusing primarily on behavior reduction or academic deficits while overlooking critical domains such as emotional regulation, safety, and relational support. Although research indicates trauma affects focus, memory, self-regulation, and engagement, these effects are rarely explicitly incorporated into IEP goals or intervention planning. Categories like “emotional disturbance” are often inadequate or too vague to address trauma-related needs (Maynard et al., 2019). As a result, IEPs may function more as a procedural document than as meaningful, trauma-responsive supports (O’Neill et al., 2015).

Compounding this issue is a persistent gap in teacher preparation. Educators, school psychologists, and counselors report limited formal training in trauma-informed practices or ongoing education about trauma's effects on children and effective teaching strategies, reducing their capacity to effectively support students with complex needs (Halfon et al., 2017; Maynard et al., 2019). Even when IEPs are thoughtfully developed, their effectiveness depends on consistent, high-quality implementation in daily practice. Research indicates that educator burnout is associated with lower-quality IEP development and reduced implementation fidelity, ultimately limiting student progress (Garwood, 2022).

Furthermore, while trauma-informed practices are increasingly promoted, implementation across schools remains inconsistent, with many systems struggling to integrate trauma-informed principles into routine practice and individualized supports (Maynard et al.,

2019). In practice, this often results in fragmented or superficial application rather than a cohesive, system-wide approach. Alongside inadequate IEPs, educators are often the most visible point of failure when efforts to improve outcomes for students experiencing trauma fall short. However, the apparent failure to implement trauma-informed practices stems not from a lack of professional commitment but from the absence of organizational structures needed to sustain this work (e.g., ongoing coaching, protected time for collaboration, access to mental health providers).

Within this context, school counselors are essential to trauma-informed initiatives: their specialized training supports students' academic, social-emotional, and career growth through comprehensive counseling programs (American School Counselor Association [ASCA], 2021). ASCA notes that counselors are often among the first to notice behavioral and academic indicators of childhood trauma and to coordinate support across multitiered systems of support (MTSS) (ASCA, 2024). MTSS models can become trauma-informed when they offer tier 1 classroom social-emotional learning, tier 2 small groups focused on skill-building and coping strategies, and tier 3 referrals and consultations for students with serious mental health needs (ASCA, 2024; Zins & Elias, 2007). By integrating trauma expertise into these key tiered services, school counselors can help reduce exclusionary discipline, strengthen school connectedness, and promote resilience among students with trauma backgrounds (Alvarez et al., 2022).

Understanding TIC is foundational for these efforts. TIC refers to a framework of practices designed to recognize and respond to the effects of trauma, while actively preventing re-traumatization (SAMHSA, 2014). A trauma-informed approach is based on six guiding principles: safety; mutuality and trustworthiness; peer support; empowerment; voice and choice;

and attention to cultural, historical, and gender issues. When applied in educational settings, these principles provide a structure for designing interventions that support behavioral and emotional needs without disrupting the existing instructional practices.

Applied Behavior Analysis to Support TIC

Applied behavior analysis (ABA) is a scientific approach to understanding and changing behavior (Baer et al., 1968). ABA focuses on analyzing and adjusting environmental factors immediately before and after an observable behavior to produce change. While ABA is used in various sectors, it is increasingly recognized as a leading evidence-based approach to managing behavioral issues in educational settings. Although ABA offers a strong framework for understanding and changing behavior in schools, educators often lack the resources and training necessary to implement ABA interventions effectively.

In school settings, trauma-informed ABA practices can be incorporated into the comprehensive school counseling program to enhance both behavioral and social–emotional outcomes (Zins & Elias, 2007). School counselors often teach skills such as emotional regulation, problem-solving, and interpersonal effectiveness through classroom lessons and small-group counseling, which align well with ABA principles like explicit instruction, modeling, rehearsal, and feedback (ASCA, 2021; Zins & Elias, 2007). When school counselors adopt a trauma-informed approach, these ABA-aligned interventions can be tailored to emphasize safety, choice, and collaboration, thereby reducing the risk of re-traumatization while still promoting observable behavior change (ASCA, 2024; SAMHSA, 2014). Collaborative consultation between behavior analysts and school counselors can also help ensure that behavior support plans and counseling strategies use consistent language, reinforcement systems, and progress-monitoring procedures across different settings (ASCA, 2024; Alvarez et al., 2022).

Since ABA emphasizes socially relevant issues, behavior practitioners are encouraged to apply emerging research to broader societal challenges. This flexibility expands ABA's reach into various fields. Rajaraman et al. (2021) noted that recent scholarship has turned toward diversity, inclusion, and social justice, drawing on research from related areas such as public health to advocate for culturally responsive care (Beaulieu et al., 2019; Fong et al., 2017; Miller et al., 2019). Although empirical validation of trauma-informed ABA is limited (Rajaraman et al., 2021), this gap reflects an absence of research rather than evidence of inefficiency. Given that those who frequently receive ABA services show high rates of maltreatment, abuse, and other adverse experiences, many clients in ABA are likely to have trauma histories, underscoring the need for research on trauma-informed ABA (Beck, 2024; NCTSN, 2016).

A trauma-informed ABA approach offers utility for educators, particularly school counselors, working with populations most vulnerable to adverse experiences. Because any adjustments to practice should build on existing methods rather than displace them, trauma-informed ABA can be integrated into current approaches with adequate training and institutional support.

Central to this framework is recognizing trauma as a potential antecedent to behavior (Eber et al., 2020). From a behavior analytic perspective, features of the current environment may function as conditioned stimuli that evoke trauma-related responding due to their similarity to the original traumatic context (Dinsmoor, 1995; Rajaraman et al., 2021). Importantly, stimulus generalization does not produce uniform responding across individuals; rather, understanding the functional relation between trauma history and current behavior can inform individualized, less-restrictive intervention planning and reduce the risk of re-traumatization (Rajaraman et al., 2021). For example, a student with a documented history of neglect involving isolation should

not receive seclusion-based consequences, and time-out procedures should be employed only after less intrusive alternatives have been systematically exhausted. School counselors are well-positioned to implement trauma-informed, behavior-analytic practices given their sustained contact with students and families (ASCA, 2021). Within group counseling contexts, counselors can employ differential reinforcement, shaping, and planned prompting to develop prosocial behaviors such as turn-taking and perspective-taking while simultaneously addressing trauma cues and supporting co-regulation (Alvarez et al., 2022). Embedding relaxation techniques and explicit coping skills instruction into social skills groups further aligns social-emotional learning with evidence-based self-regulation interventions for students who have experienced trauma (Zins & Elias, 2007).

Because understanding trauma is necessary but insufficient for improving outcomes, implementation must follow. Educational settings serve as logical sites for trauma-informed programming given near-universal enrollment and existing infrastructure for interdisciplinary collaboration among ABA practitioners, mental health providers, and educators. Effective trauma support systems further depend on accurate epidemiological data regarding early adverse experiences (Saunders & Adams, 2014).

Policy to Support TIC

Federal legislation has increasingly codified trauma-informed practice within public education. The Every Student Succeeds Act (ESSA, 2015) established a policy foundation for trauma-informed schools by requiring evidence-based interventions for students from high-need backgrounds (Frankland, 2021; Overstreet & Chafouleas, 2016). Specifically, Section 4108 authorizes Student Support and Academic Enrichment (SSAE) grants to fund comprehensive, school-based mental health services and trauma-informed professional development. These

initiatives are based on evidence-based, high-quality, and effective trauma-informed practices (ESSA, 2015).

Comprehensive school counseling programs serve as a primary vehicle for operationalizing these mandates (ASCA, 2021, 2024). ASCA highlights that certified school counselors use data to identify students affected by trauma, provide developmentally appropriate prevention and intervention services, and coordinate school-based mental health supports with administrators and community providers (ASCA, 2024). Under ESSA's emphasis on evidence-based, schoolwide mental health programming, school counselors are positioned to design, deliver, and evaluate trauma-informed schoolwide mental health programming within MTSS and related frameworks (Alvarez et al., 2022; ASCA, 2024).

The evidence base supports cautious optimism that children can recover from traumatic experiences when supported by responsive caregiving systems, access to trauma-informed resources, and effective interventions that are crucial for recovery (Child Trauma, n.d.). Trauma-informed ABA reorients practice away from punitive responses and toward functional understanding of maladaptive behavior, creating conditions for healing, skill acquisition, and academic success. Positive developmental relationships build resilience (Cantor et al., 2018; National Scientific Council on the Developing Child, 2004; Osher et al., 2018; Search Institute, 2018), and educators who maintain sustained, invested relationships with students are uniquely positioned to cultivate them.

This dissertation comprises five chapters that examine the implementation of trauma-informed ABA in Title I high-needs public schools. Chapter One introduces trauma, trauma-informed practices, ABA, and their conceptual integration. Chapter Two synthesizes the existing literature and identifies the gap this study addresses: the limited evidence base for trauma-

informed and behavior-analytic approaches in public school settings. The remaining chapters will describe the use of a single-case research design to explore the feasibility and impact of implementing trauma-informed ABA interventions, particularly with school counselors, during grade-level social skills groups. This dissertation aims to provide insights, improve outcomes for children with ACEs, address the gap in the literature on trauma-informed behavioral practices in school settings, and guide educators, practitioners, and policymakers in TIC and applied behavior analysis. Figure 1 illustrates the study's logic model, which serves as the theory of change linking micro-training to trauma-informed ABA, resulting in changes in counselor practices and, ultimately, student well-being. Figure 2 illustrates the conceptual framework.

Figure 1

Logic Model

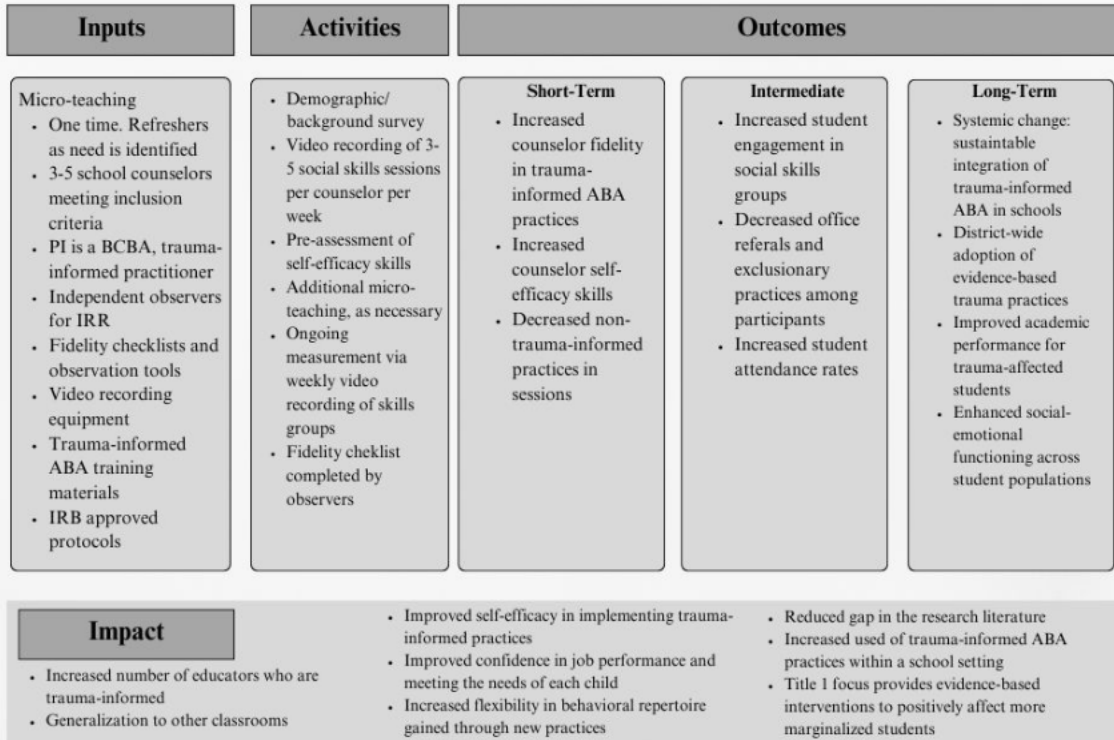
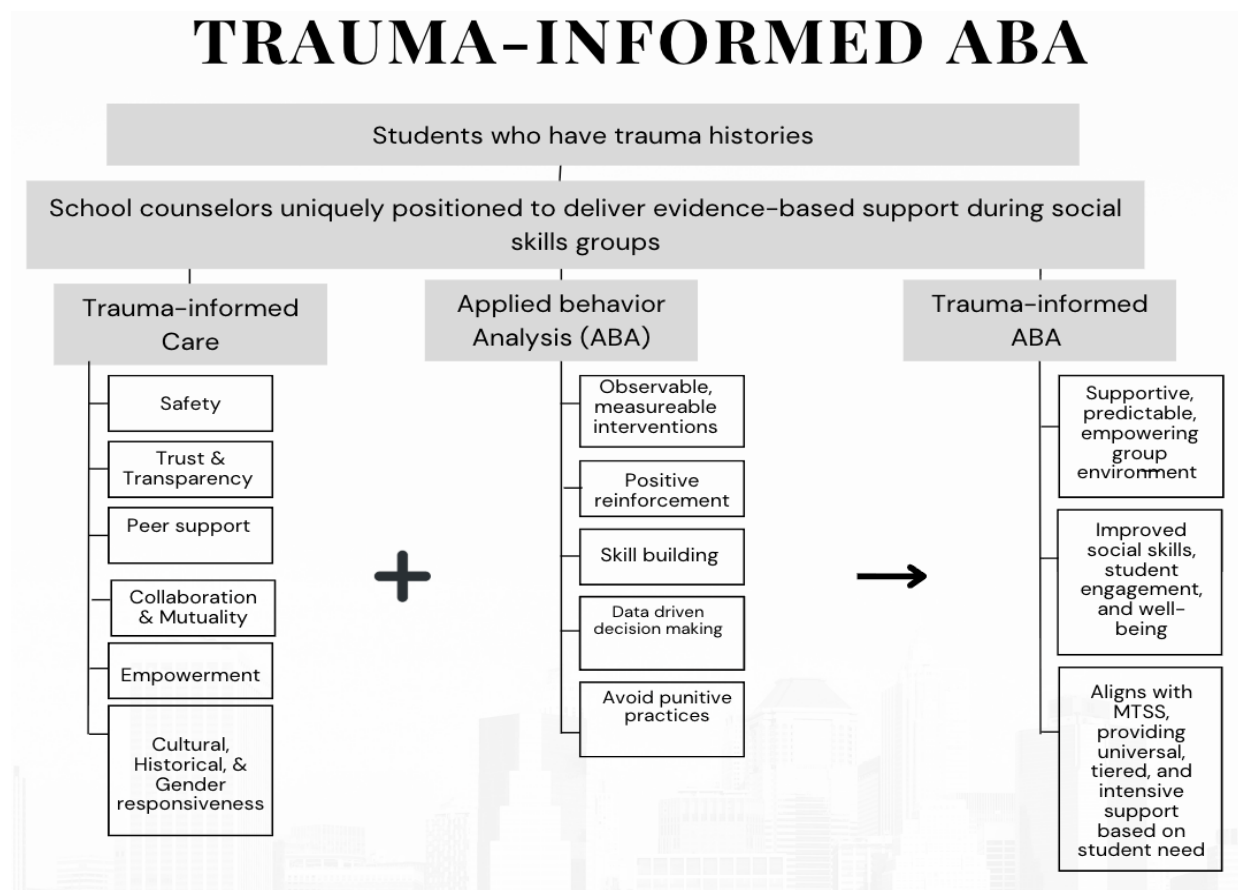


Figure 2

Conceptual Framework



Theory of Change for the Trauma-Informed ABA Micro-Training

This study is based on a theory of change that outlines how short, focused professional development for school counselors can boost the adoption of trauma-informed ABA practices within grade-level social skills groups in Title I public schools. It details the specific conditions under which a micro-training package is likely to affect school counselors' actions, group dynamics, and students' experiences.

The theory of change focuses on Title I high-needs elementary schools, where many students have experienced adverse childhood events and face behavioral and academic challenges. School counselors in these environments maintain regular contact with students and

families but often lack extensive formal training in TIC and ABA. Essential inputs include counselor time, administrative support for participation, the researcher's expertise in trauma-informed ABA and behavior skills training, and the materials created for this study, such as the demographic survey, trauma-informed ABA intervention rubric, feedback forms, and the school counselor self-efficacy survey.

Building on these inputs, the intervention's main activities focus on a brief, intensive micro-training package. Counselors start with a 90-minute training session covering foundational concepts of childhood trauma, its impact on the brain and body, TIC principles, and ABA-based strategies consistent with those principles. This didactic training is then complemented by ongoing, on-site micro-training during and after grade-level social skills groups. These micro-trainings include behavioral skills training elements such as instruction, modeling, rehearsal, and feedback. Delivered in 5–15-minute segments integrated into existing group routines, these micro-training sessions are tailored to fit within the constraints of a public-school schedule while offering repeated opportunities for skill learning and improvement. In alignment with Darling-Hammond and colleagues' characterization of high-quality professional learning, these sessions are job-embedded, sustained over time, and structured to promote active engagement and feedback on practice, rather than one-time, decontextualized workshops (Darling-Hammond et al., 2017).

These activities produce outputs such as the count of trained school counselors, the number of micro-training sessions held, and observations of social skills and group behaviors. Additional results include completed trauma-informed ABA intervention rubrics that record how often strategies are applied during sessions, as well as counselor self-report data from the school counselor self-efficacy survey. These outputs showcase counselors' involvement in the

intervention and provide measurable indicators of the frequency and quality of trauma-informed ABA practices in real time.

Several short-term outcomes at the counselor level are expected. With ongoing practice and feedback, counselors should show increased knowledge of trauma-informed ABA, higher self-efficacy in applying these interventions, and better adherence to the trauma-informed ABA intervention rubric during social skills groups. Observable changes include higher rubric scores and more consistent use of trauma-sensitive reinforcement, prompting, and environmental modifications during sessions, all fostering safety, trust, empowerment, collaboration, and cultural responsiveness.

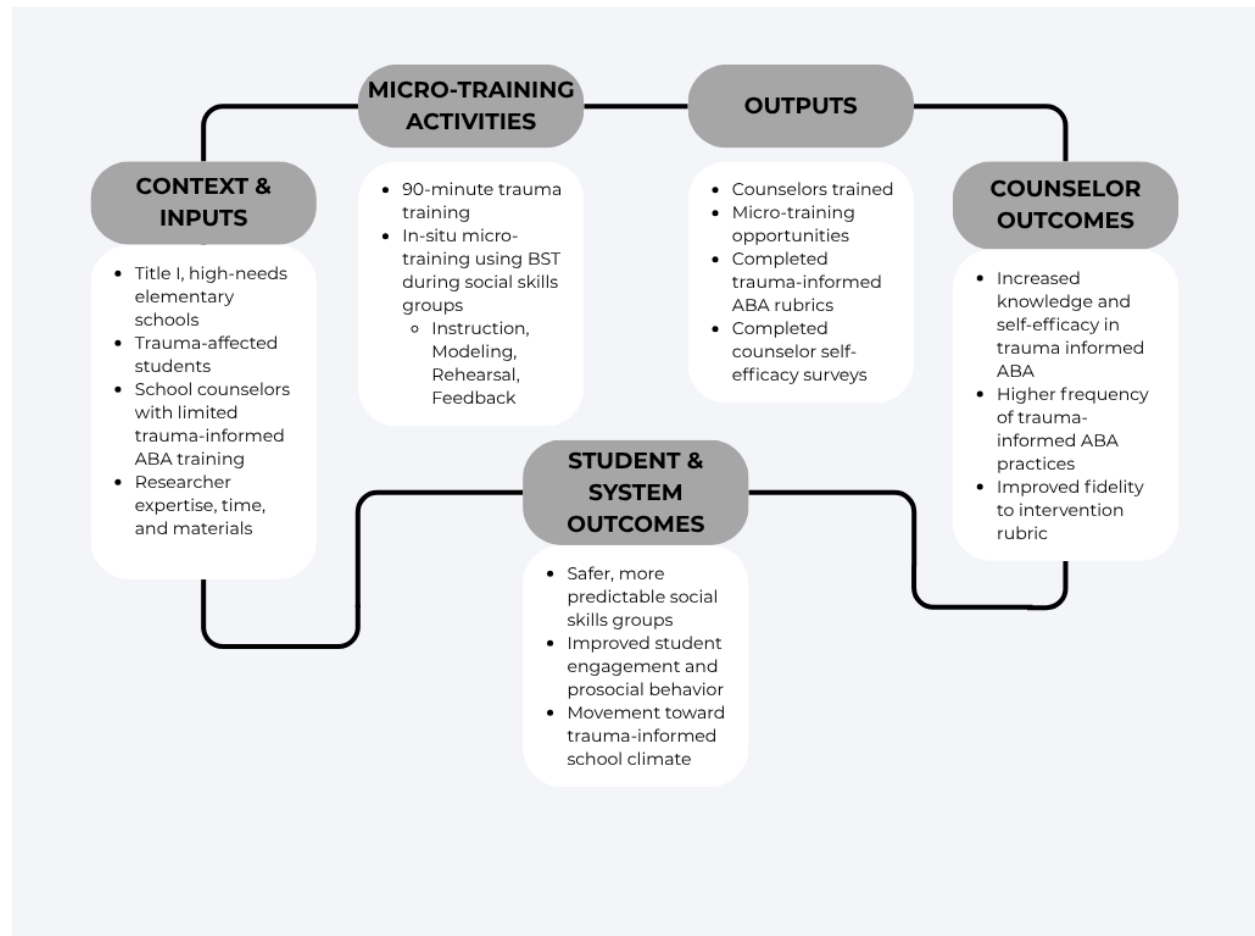
These counselor-focused changes are expected to yield intermediate outcomes at both the group and student levels. As counselors adopt trauma-informed ABA practices more consistently and accurately, social skills groups are likely to become more predictable, emotionally secure, and attentive to students' trauma-related needs. In these groups, students are expected to show increased engagement, prosocial behaviors, and decreased disruptive actions. Over time, the group setting may evolve into a protective environment that supports regulation and mitigates trauma's impact on learning and behavior.

Finally, this theory of change suggests long-term, system-wide effects. While these outcomes are beyond the scope of this single-case study, the model indicates that consistent use of trauma-informed ABA practices by school counselors can foster a more trauma-aware school environment within a multi-tiered support system. At this level, schools might see fewer challenging behaviors and exclusionary disciplinary actions, stronger support for students with trauma backgrounds, and improved academic and behavioral outcomes, especially in Title I and other high-needs schools. As counselors expand and apply their trauma-informed ABA skills

beyond the context of this study, the micro-training approach could serve as a foundation for scalable and sustainable professional development strategies. Figure 3 provides a visual summary of this theory of change.

Figure 3

Theory of Change



The following research questions are addressed: (1) Is there a functional relation between participation in micro-training and the rate at which school counselors implement trauma-informed ABA intervention, and (2) Are the micro-training and its effects socially valid for participants? Due to the limited knowledge of trauma-informed practices and ABA interventions

among the school counselors, it is hypothesized that training the participants could bridge this gap. Chapter Two provides a review of the literature exploring those concepts in greater depth.

CHAPTER 2

Literature Review

Childhood trauma, also referred to as an adverse childhood experience (ACE), can happen unexpectedly and have long-lasting effects on development and well-being. Although there is no single definition, it is generally described as an event or series of events that is frightening, dangerous, or violent and threatens a child's physical, mental, emotional, or spiritual well-being (Peterson, 2023; Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). Traumatic childhood events are commonly grouped into three categories (i.e., abuse, neglect, and household dysfunction) (Felitti et al., 2019). Additional forms of trauma include physical, psychological, or sexual abuse; chronic neglect of basic needs; household challenges such as caregiver substance abuse or mental illness; witnessing interpersonal violence; losing a caregiver through death, incarceration, or abandonment; exposure to community violence; natural disasters; and human-made disasters such as war, displacement, or terrorism (About Adverse Childhood Experiences, 2024; Felitti et al., 2019; Fondren et al., 2020; Leban & Masterson, 2021).

Exposure to traumatic experiences activates the brain's neurobiological stress response and produces significant physiological effects (van der Kolk, 2000). Although this stress response is adaptive in the short term, chronic or repeated activation can interfere with brain development by disrupting neuronal pathways and impairing the development of the prefrontal cortex and hippocampus, which are critical for learning, memory, attention shifting, and stimulus-response associations (Carrion & Wong, 2012; Garner & Yogman, 2021). The neurological effects are also associated with psychosocial stressors and negative behavioral health outcomes (Felitti et al., 2019; Petruccelli et al., 2019). Elkin et al. (2024) found a

relationship between childhood trauma and difficulties with emotional regulation, impulse control, and addictive behaviors. Klabunde et al. (2024) similarly reported that childhood trauma alters neural circuits associated with self-referential cognition and problem-solving. Such disruptions may contribute to difficulties with emotional regulation, empathy, and body awareness, which in turn may affect functioning in areas such as complex reasoning, memory, and decision-making (Klabunde et al., 2023). Overall, trauma exposure may contribute to health and educational disparities that make learning and navigating academic and social contexts more difficult.

Trauma is prevalent across demographic groups; however, some groups are disproportionately affected. Research documents racial and ethnic disparities in childhood trauma, with children and families of color experiencing higher rates of adversity than their white peers (Maguire-Jack et al., 2021; Mersky et al., 2021). Elevated rates of trauma exposure have been documented among children who identify as Queer (McCormick et al., 2018), children with intellectual or developmental disabilities (Legano et al., 2021), children from military families (Syed et al., 2020), children in rural communities (Crouch et al., 2019; Maguire-Jack et al., 2021), and children living in economically distressed areas (Conrad-Hiebner & Byram, 2020; Sedlak et al., 2010). The effects of trauma may be compounded when children hold multiple identities or experience intersecting risk factors.

The prevalence of ACEs in the United States (US) is high. Research indicates that 50 to 60% of adults have experienced at least one ACE (Centers for Disease Control [CDC], 2019; Peterson, 2023), whereas other estimates suggest that 46.3% of children in the US have experienced at least one ACE (Bethell et al., 2017). These findings suggest that nearly half of the children in the US have experienced at least one traumatic event. Whether the trauma is directly

experienced or witnessed, both forms of exposure can produce significant psychological and physiological effects. Exposure to highly stressful experiences can trigger strong emotional and physical responses that persist well after the event has ended. Accordingly, TIC is an important framework for reducing the effects of these experiences. The remainder of this chapter reviews trauma, its effects on development and learning, trauma-informed practices in educational settings, and the relevance of applied behavior analysis.

Applied Behavior Analysis

Applied behavior analysis (ABA) is an evidence-based and systematic approach to understanding and changing behavior (Baer et al., 1968). It emphasizes analyzing and modifying environmental variables occurring before and after observable actions to promote behavior change. Although ABA is commonly associated with intervention for children on the autism spectrum, it is used across many settings and is increasingly recognized as a useful framework for addressing behavioral concerns in educational settings (Barnett et al., 2020; Stahmer, 2007). This relevance stems from ABA's emphasis on systematic, evidence-based intervention, data collection, and data-based decision-making to improve socially meaningful behavior (Slocum et al., 2014). As educational contexts continue to evolve, challenging behavior remains one of the most common concerns teachers encounter in classrooms (Aldrup et al., 2018). Students who display maladaptive behaviors early in development are at greater risk of academic failure, substance misuse, and disruptive behavior in adolescence and early adulthood (Bradshaw et al., 2015). Because ABA emphasizes structured interventions and ongoing outcome monitoring, behavior-analytic approaches are particularly well suited to educational settings.

Approximately 20% of school children display maladaptive behavior (Bradshaw et al., 2015). In addition, the prevalence of mental, behavioral, and developmental disorders in children

ages 3 to 17 increased from 25.3% in 2016 to 27.7% in 2021 (Leeb et al., 2024). These findings align with Gupta et al. (2017), who report that 22.7% of school-aged children display maladaptive behavior requiring intervention. Given the high prevalence of childhood trauma and its documented association with behavioral difficulties, some children who struggle in classrooms may also have histories of trauma exposure. The relationship highlights the importance of early intervention and targeted support, particularly in schools where children spend much of their time.

Many educators already use ABA-derived practices, even if they do not explicitly identify them as behavior-analytic. Practices such as opportunities to respond, progress monitoring, prompt hierarchy, targeted feedback, communication support through the Picture Exchange Communication System (PECS), functional behavior assessments, and behavior intervention plans are grounded in ABA principles. The application of behavior analysis in schools has been associated with improvements in social skills, independence, adaptive behaviors, academic performance, and communication. Although ABA already plays a substantial role in education, integrating it with trauma-informed practices may help schools promote skill development while creating safer and more supportive environments for students affected by trauma.

Trauma-Informed Care (TIC)

TIC is a framework for understanding and responding to the effects of trauma. Harris and Fallot (2001) advanced this framework to improve clinical practice and service delivery. Being trauma-informed involves recognizing how violence, victimization, and other traumatic experiences may affect individuals' lives and using that understanding to create systems and services that support healing and recovery (Butler et al., 2011; Harris & Fallot, 2001).

Fallot and Harris (2001) identified five core values of trauma-informed principles (i.e., safety, choice, trustworthiness, collaboration, and empowerment). SAMHSA (2014) Harris and Fallot's 2001 framework by adding a sixth principle of trauma-informed support: (a) safety, (b) trustworthiness and transparency, (c) peer support, (d) collaboration and mutuality, (e) empowerment, voice, and choice, and (f) cultural, historical, and gender responsiveness (see Table 1).

Table 1

Trauma-Informed Principles and Resources

Principle	Description	Resource
1. Safety	Achieved by creating a secure physical and emotional environment where a child's needs are addressed, and provider reactions remain consistent and respectful.	Guarino et al., 2009; Rajaraman et al., 2021
2. Trustworthiness & Transparency	Practices and decisions are carried out openly to build trust.	Harris & Fallout, 2001
3. Peer Support	Individuals who have experienced similar traumatic events can help build community while fostering healing and recovery.	SAMHSA, 2014
4. Collaboration	Partners with and equalizes power among individuals within the environment.	Harris & Fallout, 2001
5. Empowerment	Methods that promote and sustain client control, choice, and autonomy. In ABA, shared governance is consistently applied throughout the entire experience, not just at the beginning or end.	DeCandia et al., 2014; Rajaraman et al., 2021; Behavioral Analysis Certification Board (BACB), 2020
6. Cultural, Historical, and Gender Responsiveness	Implementing policies, procedures, and protocols that recognize and address issues related to culture, historical	Harris & Fallout, 2001

The increasing emphasis on TIC in education has been shaped in part by SAMHSA's 2014 guidelines for trauma-informed services. Additionally, Every Student Succeeds Act of 2015 encouraged the use of evidence-based, trauma-informed approaches in school mental health services. Despite increased awareness and policy support, substantial implementation challenges remain. Barriers such as mandatory reporting, informed consent, time, cost, training, and limited access to resources can impede the effective and consistent use of trauma-informed practices (Becker-Blease, 2017; Riggs & Landrum, 2023). To address these challenges, implementation efforts must ensure that TIC is not reduced to a superficial reform that leaves harmful systems unchanged. When implemented thoroughly, TIC may strengthen therapeutic and educational approaches.

Trauma-Informed ABA

A comprehensive and individualized treatment approach is especially important when a child presents with behavioral challenges and has experienced trauma (Cruz et al., 2022; Rajaraman et al., 2021). Considering a child's history, strengths, and challenges when designing treatment goals and interventions may improve intervention effectiveness (Cruz et al., 2022). One emerging approach for supporting trauma-affected children is trauma-informed ABA. This approach involves recognizing that an individual's behaviors are influenced by background, lived experiences, and history of adversity (Rajaraman et al., 2021). Trauma-informed ABA aims to foster environments in which individuals feel safe, respected, and supported (Austin et al., 2024; Rajaraman et al., 2021).

Trauma-informed ABA is a structured approach to delivering individualized, compassionate services that recognize the role of environmental context and lived experiences in shaping behavior (Austin et al., 2024; Rajaraman et al., 2021). Research indicates that exposure to ACEs substantially increased the likelihood of learning and behavioral challenges (Felitti et al., 2019; Nelson et al., 2020; New Jersey Funders ACEs Collaborative et al., 2019). The report from the New Jersey Funders ACEs Collaborative et al. (2019) notes that individuals who have faced trauma are thirty-two times more prone to develop behavioral issues (Felitti et al., 2019), face higher chances of self-harm and aggression (Nelson et al., 2020), and are twelve times more likely to attempt suicide (Angelakis et al., 2019; Brezo et al., 2008; Kim et al., 2010). Because ABA is frequently used for individuals with developmental disabilities, and because this population is at elevated risk for trauma exposure (Berg et al., 2019), integrating trauma-informed principles in ABA practices is an important consideration (Austin et al., 2024; Rajaraman et al., 2021).

Although trauma-informed ABA provides a conceptual bridge between trauma-responsive care and evidence-based behavior support, school counselors are rarely systematically trained in this integrated approach (ASCA, 2021; Rajaraman et al., 2021). Standard school counseling curricula place a strong emphasis on crisis response, developmental counseling, and consultation, but rarely offer structured opportunities to practice adapting behavior-analytic techniques (such as prompting, shaping, and reinforcement systems) in trauma-sensitive group counseling settings or explicit instruction in applied behavior analysis (ASCA, 2021; Bodenhorn & Skaggs, 2005; Rajaraman et al., 2021). As a result, counselors are often asked to lead trauma-informed initiatives and implement behavioral interventions without targeted training in how to

modify traditional ABA procedures to avoid re-traumatization and to prioritize safety, choice, and co-regulation (ASCA, 2021; Rajaraman et al., 2021).

Even though these skills are not frequently covered in school counselor professional development, emerging guidelines on trauma-informed ABA highlight the necessity for practitioners to take trauma into account as a contextual variable, modify antecedent procedures, use trauma-sensitive language, and incorporate regulation and coping strategies into behavior plans (Beck, 2024; Rajaraman et al., 2021). Building school counselors' capacity to provide trauma-informed ABA within comprehensive school counseling programs may therefore require brief, practice-oriented training models that explicitly teach and practice trauma-informed ABA micro-skills like creating predictable, sensory-supportive group environments, utilizing collaborative reinforcement systems, and identifying trauma cues in observable behavior (Beck, 2024; Lang et al., 2015; Oddone-Paolucci, 2022; Rajaraman et al., 2021).

Some trauma-informed ABA practices may be implemented with limited material resources; however, effective implementation still depends on training, consistency, and thoughtful service delivery (Austin et al., 2024; Rajaraman et al., 2021). Evidence-based strategies include providing structured choice (Ennis et al., 2017), explicitly teaching emotional regulation, incorporating sensory supports (Purvis et al., 2013), emphasizing positive reinforcement (Ennis et al., 2020), and ensuring cultural responsiveness (Hammond, 2014; Riggs & Landrum, 2023). Understanding childhood trauma is essential because exposure to adversity can affect child development and increase the likelihood of maladaptive behaviors as a coping response (Petruccelli et al., 2019). Trauma-informed ABA, particularly in a school setting, offers a framework for recognizing these challenges and delivering interventions that may support recovery, skill development, and school participation (Maynard et al., 2019). At the same time,

empirical research specifically examining trauma-informed ABA remains limited, and additional studies are needed to determine which practices are most effective in educational contexts (Beck, 2024; Rajaraman et al., 2021).

Trauma-Informed ABA within Educational Settings

The high prevalence of traumatic experiences among students suggests the need for changes in how schools support behavior, learning, and well-being. Trauma presents a significant challenge for schools because educators must balance core instructional goals with the need to support students experiencing traumatic stress, which can interfere with attendance, engagement, and learning (Ko et al., 2008). As a result, implementation of trauma-informed practices in public schools has become increasingly important for promoting student well-being and academic success (Maynard et al., 2019).

The National Child Traumatic Stress Network (NCTSN, n.d.) defines a trauma-informed school as one that recognizes the effects of trauma on staff, students, families, communities, and systems, and intentionally creates learning environments that respond to those needs. Within school settings, trauma-informed ABA seeks not only to improve socially meaningful behavior but also to do so through compassionate, context-sensitive practices that account for students' lived experiences and support academic growth.

Black et al. (2021) identified several core components of trauma-informed ABA. These include recognizing the impact of trauma on students' development, behavior, and performance; creating safe, supportive physical environments; building trusting relationships over time; embedding resilience-building practices throughout classroom and school settings; and adopting interventions at multiple levels of support. Together, these components reflect the shift from reactive and punitive models toward preventive, relational, and responsive systems of support.

Trauma-informed approaches in educational settings have been associated with improved academic performance (Lynch & Wojdak, 2023; Maynard et al., 2019), better emotional and mental health outcomes (MacLochlainn et al., 2022), fewer discipline concerns (Maynard et al., 2019), stronger student-teacher relationships, and the development of lifelong skills for students (Maynard et al., 2019). Because trauma can significantly affect a child's ability to learn, trauma-informed ABA practices in schools may help reduce barriers to learning, support emotional safety, and promote adaptive coping.

Implementing Trauma-Informed Practices in Schools

As schools increasingly acknowledge their role in responding to childhood trauma, a shift from traditional punitive discipline toward more equitable and healing-centered approaches is essential. While not exclusive to trauma-informed ABA, this section consolidates research on fundamental principles, evidence-backed methods, and strategies for fostering trauma-aware educational environments likely to positively impact student behavior.

Equity-Centered Trauma-Informed Education

SAMHSA introduced the “Four R” framework of trauma-informed practices: recognizing trauma's impact, identifying signs within the school community, responding by integrating trauma knowledge into policies, and actively preventing retraumatization (SAMHSA, 2014; Shim & Venet, 2025). However, this framework primarily conceptualized trauma as originating outside of school settings. Equity-centered trauma-informed education (ECTIE) broadens this perspective, explicitly recognizing that trauma can also originate within schools and that marginalized students are disproportionately affected (Shim & Venet, 2025). ECTIE emphasizes that addressing school-based trauma requires confronting ableism, transphobia, systemic racism, and other forms of oppression that contribute to youth trauma (Saleem et al., 2021; Shim &

Venet, 2025). Understanding how trauma varies across racial, ethnic, and socioeconomic groups, acknowledging that school policies can themselves be traumatic, and committing to resisting dehumanization are essential steps toward developing proactive, systems-level strategies for change (Saleem et al., 2021).

Professional Development and Training

Implementing trauma-informed practices in education begins with staff preparation. Developing a foundational understanding of trauma, its effects on learning and development, and effective ways to support students with complex backgrounds requires comprehensive professional development (PD). Research suggests that PD before and during the implementation of trauma-informed programs enhances educators' capacity to respond to trauma-affected students (Lang et al., 2015). In an urban school district, teachers who participated in PD reported more positive perceptions of trauma-informed care (TIC) and felt better prepared to support their students. Oddone-Paolucci (2022) further argued for moving beyond one-time training sessions to ongoing mentorship models that include regular assessment of practitioners' application of skills in authentic settings, continuous peer support, and opportunities for cross-disciplinary learning.

Although the broader educator workforce reports limited exposure to trauma-informed content, these gaps are particularly salient in school counseling preparation and in-service training (Brown, 2025). School counselors are expected to recognize the impact of adverse childhood experiences, lead prevention and intervention efforts, and coordinate trauma-responsive supports; however, most report receiving minimal formal coursework or supervised practice specific to trauma-informed approaches during their preservice training (Alisic & Barrett, 2024; Brown, 2025). A recent study of school counsellors highlighted the urgency of

including mandatory trauma-informed practice units in school counseling programs and identified priority content areas such as practical strategies, case-based learning, and examples of whole-school trauma-informed approaches (ASCA, 2016). ASCA's position statement on trauma-informed practice similarly calls for school counselors to implement comprehensive, data-driven programs that integrate trauma knowledge into policies, procedures, and practices, underscoring the need for systematic, role-specific training rather than ad hoc exposure.

Another way educators can better support students affected by trauma is by training in creating predictability in the classroom. Evidence-based frameworks like Positive Behavior Interventions and Supports (PBIS) and MTSS promote predictability, establish clear behavioral expectations, encourage reinforcement systems, and rely on data-driven decision making (Chafouleas et al., 2016; National Child Traumatic Stress Network, n.d.; Sugai & Horner, 2020). The goal is to develop trauma-informed systems that strengthen students' readiness to learn, both academically and emotionally. Consistent with whole-child approaches, these frameworks help build safe, stable, and relationship-rich environments that are particularly protective for students experiencing adversity and trauma (Darling-Hammond & Cook-Harvey, 2018; Darling-Hammond et al., 2017). To sustain such environments, professional learning for educators must reflect the features of high-quality professional development—content-focused, collaborative, job-embedded, and ongoing—that have been shown to support changes in practice (Darling-Hammond et al., 2017; Desimone, 2009). When PBIS- and MTSS-related training is designed this way and explicitly integrates TIC, school staff, including counselors, are more likely to adopt consistent routines, supportive responses, and data-based adjustments that enhance students' regulation and engagement over time.

Within this context, school counselors occupy a pivotal role in leading and sustaining trauma-informed initiatives but often do so without systematic preparation in trauma-informed practice or applied behavior analysis (ASCA; Lang et al., 2015; Oddone-Paolucci, 2022). Existing PD for school counselors frequently emphasizes general trauma awareness and relationship-building while offering fewer structured opportunities to learn, practice, and receive feedback on specific, evidence-based strategies that integrate trauma science with data-based decision making (Desimone, 2009; Darling-Hammond et al., 2017; Lang et al., 2015; Oddone-Paolucci, 2022). Brief, targeted PD models that incorporate modeling, rehearsal, and feedback—such as micro-training grounded in behavioral skills training (BST)—may therefore be especially well-suited to building school counselors’ capacity to implement trauma-informed interventions within their comprehensive counseling programs (Darling-Hammond et al., 2017; Lang et al., 2015; Oddone-Paolucci, 2022).

Peace Spaces and Self-Regulation Rooms

Schools may foster trauma-informed environments by creating peace spaces and self-regulation rooms. These spaces, whether a corner in the classroom or a separate room, may function as trauma-informed alternatives to traditional timeout and seclusion practices (Liang et al., 2024). They provide students with opportunities to develop and practice self-regulation skills in supportive environments. Liang et al. (2024) conducted a formative evaluation of Peace Spaces at a middle school and identified several conditions associated with successful implementation:

1. Clear protocols: Students know how and when to use the Peace Space, with time limits of approximately 10-15 minutes.

2. Trained staff: Peace Rooms require trained personnel to teach coping skills, provide emotional support, and foster trusting relationships with students.
3. Limited gatekeeping: Teachers should not unnecessarily restrict access, as frequent use of the Peace Room may indicate a student's need for additional support rather than misuse.
4. Appropriate materials: Spaces should include evidence-based support such as art materials, breathing exercises, mindfulness activities, and sensory tools.
5. Peer modeling: When implemented supportively, Peace Spaces may foster student engagement, reduce stigma, and offer positive models for peers.
6. Professional development: All staff require training on the purpose and appropriate use of Peace Spaces to prevent their use as punishment.

Liang et al. (2024) found that students primarily used the Peace Spaces to address mental health concerns and peer-related stress. In addition, office discipline referrals decreased following implementation. These findings suggest that Peace Spaces may reduce exclusionary practices and promote student well-being.

Restorative Justice

Restorative justice offers an alternative to punitive discipline by emphasizing accountability, relationship repair, and community building (Morgan, 2021; Kaufman et al., 2024). Kaufman et al. (2024) implemented this approach at the Milwaukee Public Schools Success Center, focusing on holistic interventions for students at risk of suspension. The model organizes interventions into three tiers (i.e., individual, interpersonal and communal, and systemic).

At the individual level, restorative justice was taught through self-regulation, conflict resolution, and communication. Holistic therapeutic activities were incorporated into trauma-

focused individual and group therapy sessions. At the interpersonal and community levels, dialogue among students, families, and school staff was promoted; individualized transition plans were created for students returning to their home schools; and the school hosted weekly after-school support programs for program alumni (Kaufman et al., 2024). At the systemic level, the school addressed racial inequalities by providing PD on PBIS and trauma-informed practices to staff at the students' home schools. The school also implemented policy changes to eliminate zero-tolerance policies, collaborated with community members to offer wraparound services, and regularly monitored data to identify patterns of disproportionate discipline.

Kaufman et al. (2024) reported that more than half of the students who completed the program improved their attendance, and more than 70% of students and parents reported positive effects on daily functioning and symptom reduction (Kaufman et al., 2024). These findings suggest that comprehensive and restorative practices may support students while addressing systemic inequalities in school discipline. Successful implementation of restorative justice models relies on involving students in problem-solving, goal-setting, and decision-making (Shim and Venet, 2025; Kaufman et al., 2024). It also emphasizes relationship building, connections, unconditional positive regard, and explicit attention to cultural and historical inequalities (Oddone-Paolucci, 2022; Shim and Venet, 2025).

Addressing Implementation Challenges

Implementing trauma-informed practices in educational settings involves significant challenges and requires attention to educators' well-being. Teachers working with trauma-affected students often experience burnout, compassion fatigue, and vicarious trauma, making practitioner well-being essential for sustainable implementation (Armes et al., 2020; Oddone-Paolucci, 2022). The complexity of the educational system can also hinder rigorous research and

the consistent implementation of programs (Phung, 2022). Maintaining standard practices across diverse environments may limit adaptation and complicate efforts to achieve high-quality outcomes. These challenges underscore the need for professional learning that is content-focused on TIC, incorporates active learning and reflection around emotionally demanding practice, and is embedded in collaborative structures that normalize mutual support and problem-solving (Darling-Hammond et al., 2017; Desimone, 2009). Such high-quality professional learning can function as a protective factor for educators—building efficacy, reducing isolation, and supporting adaptive implementation of trauma-informed practices across varied school contexts, rather than relying on one-shot trainings that leave staff to manage secondary traumatic stress on their own (Darling-Hammond et al., 2017).

A trauma-informed approach requires schoolwide commitment, making consistency a critical feature of implementation. All members of the educational environment must support trauma-informed practices; however, this can be difficult because those responsible for implementation bring their own complex personal histories, professional habits, and varied levels of social-emotional competence to their work. Some educators may resist change because of personal trauma histories, longstanding practices, or limited skills for managing challenging situations (Jennings & Greenberg, 2008; Maynard et al., 2019). When implementation is inconsistent, student outcomes and program effectiveness may suffer. Successful trauma-informed implementation also depends on clearly defined roles within interdisciplinary teams. Although each team member may be committed to student well-being, differing expertise and perspectives can lead to role confusion, fragmented services, staff burnout, and gaps in support (Oddone-Paolucci, 2022).

Rigid policies and practices can further hinder the effective implementation of trauma-informed approaches in schools (Kentucky Department of Education, 2021). Trauma-informed systems require flexibility within a structured framework because staff and students have varying needs across contexts and time. Inflexible responses may create retraumatizing environments and contribute to school-based trauma (Maynard et al., 2019). Rather than relying on zero-tolerance policies that unfairly affect marginalized students (e.g., students of color, students with disabilities), schools should adopt proactive, inclusive, and relational approaches that account for individual circumstances. Restorative practices that emphasize relationship repair rather than punishment may help students accept responsibility for harm while preserving dignity and connection to the school community (Morgan, 2021; Shim & Venet, 2025).

Trauma-informed implementation also carries the risk of retraumatization. This may occur through practices such as physical restraint, seclusion, public shaming, or poorly designed trauma screening procedures (Dolezal & Gibson, 2022; U.S. Department of Education, 2012). Ethical concerns arise when schools screen for trauma without establishing appropriate response systems, thereby increasing the potential for harm. To reduce retraumatization, schools should obtain informed consent with clear explanations of data use, establish referral networks and intervention systems before universal screening, and ensure that qualified staff are available to support families (Amirazizi et al., 2023). Schools can also better support trauma-affected children by developing protocols for responding to disclosures, establishing procedures for mental health support, and creating family engagement opportunities that respect diverse cultural contexts (Shim & Venet, 2025; Lang et al., 2015).

Trauma-informed implementation is further complicated by limited understanding and insufficient training in its use (Halfon et al., 2017; Maynard et al., 2019; Alisic & Barrett, 2024).

Counselors are increasingly expected to demonstrate TIC competencies; however, TIC content is not consistently or comprehensively embedded across counselor education programs, leaving many school counselors reliant on postgraduate professional development to build these skills (ASCA, 2016). Alisic and Barrett (2024) also noted that recognizing trauma symptoms in students can be difficult because those symptoms are often subtle and easily misinterpreted, underscoring the need for more robust preservice and in-service training. The integration of ABA and trauma-informed approaches also remains an emerging area, with most research developing after 2014. Consequently, ABA practitioners and educators may lack adequate preparation in either trauma-informed care, ABA, or their integration. Accessing high-quality professional learning is particularly challenging in resource-scarce settings such as rural districts (Phung, 2022; Showalter et al., 2023). Although online resources may improve accessibility, costs and limited time remain substantial barriers (Blanchard et al., 2016; Rude & Miller, 2017; Showalter et al., 2023). Nonetheless, trauma-informed ABA remains a promising approach for supporting students and staff affected by adversity.

Future Directions

Both TIC and applied behavior analysis are concerned with addressing socially significant issues. A proactive approach to preventing retraumatization and strengthening bonds between children and adults aligns with core principles in ABA (Rajaraman et al., 2021). Future efforts should foster continued collaboration between these fields and expand behavior-analytic research on trauma-informed strategies, particularly given the limited literature currently available. A multidisciplinary approach may strengthen this effort by improving collaboration among educators, mental health professionals, and ABA practitioners as they develop coordinated trauma-informed supports (Phung, 2022).

Future efforts should emphasize developing flexible, context-sensitive strategies that address individual students and broader social challenges. These efforts should align with TIC principles of safety, trust, choice, collaboration, empowerment, and cultural responsiveness. The same principle applies to PD, which should be tailored to the needs of both providers and students and include content related to TIC, ABA methodologies, and provider well-being. Because recognizing and addressing the effects of trauma places substantial demands on providers, future initiatives should include both content knowledge and support for practitioners' self-care.

Finally, ongoing evaluation of implementation fidelity and student outcomes is needed. Useful methods may include validated tools to assess staff knowledge and perceptions, disciplinary data to monitor disparities across student groups, and qualitative feedback from students, families, and staff regarding their experiences (Liang et al., 2024; Kaufman et al., 2024; Lang et al., 2015). Continuous assessment can help ensure that trauma-informed systems are not only established but also refined over time.

Conclusion

Trauma-informed ABA is an emerging and conceptually promising approach for supporting school-aged children affected by trauma in public schools. When trauma-informed principles are incorporated into behavioral interventions, educators may be better positioned to support student outcomes and create safer, more supportive learning environments. Because ABA focuses on socially significant issues, practitioners are encouraged to consider how behavior-analytic science can address broader societal challenges as additional evidence becomes available (Rajaraman et al., 2021). Although research on trauma-informed frameworks in educational systems is limited, existing literature suggests that many students who require

behavioral support may also be those most affected by trauma. Implementing trauma-informed practices in public schools may be both ethically important and practically beneficial for improving educational outcomes and supporting student well-being. By embracing principles such as safety, trust, choice, collaboration, empowerment, and cultural responsiveness, schools may foster environments that better support students with diverse experiences and needs.

Trauma-informed ABA may help address behavioral and academic challenges experienced by trauma-affected students while also supporting educators who work with vulnerable populations. Because resources are often limited and teachers carry heavy workloads, classroom changes should build on existing practices, making trauma-informed ABA a practical addition. Despite growing interest in trauma-informed education and the conceptual alignment between trauma-informed ABA, empirical research specifically examining trauma-informed ABA practices in public school settings remains limited. In particular, little is known about how school-based personnel can be efficiently trained to implement trauma-informed ABA strategies with fidelity in high needs settings. Chapter 3, therefore, proposes a practical approach for increasing the use of trauma-informed ABA interventions among school counselors in Title 1 high-needs elementary schools through brief training sessions combined with micro-training opportunities during weekly grade-level social skills groups.

CHAPTER 3

Method

This chapter describes the methodology used to evaluate school counselors' implementation of trauma-informed ABA practices (Rajaraman et al., 2021) during weekly grade-level social skills groups in Title I high-needs schools. (Ledford & Gast, 2014). The study examined whether structured training grounded in BST would increase the accurate and consistent use of trauma-informed ABA practices within an authentic school-based counseling context.

Design

This study employed a nonconcurrent multiple-baseline-across-participants design (Slocum et al., 2022) to examine the functional relation between trauma-informed ABA micro-training and school counselors' implementation of trauma-informed ABA strategies during weekly social skills groups for students in 4th- through 6th-grade. Since recent scholarly work notes that trauma-informed and ABA evidence-based practices in K–12 schools are thin, fragmented, and often not disaggregated by grade level (Avery et al., 2020; Maynard et al., 2019), the 4th–6th grades were chosen for this study to contribute to the scant literature on older elementary students. A multiple-baseline design was selected because the effects of training were not expected to be readily reversible, making withdrawal inappropriate and allowing repeated demonstrations of effect across staggered tiers (Ledford & Gast, 2014; Slocum et al., 2022). A nonconcurrent approach was selected because data for each participant were collected at different times rather than simultaneously. This design reduced some threats to internal validity, including rapid learning effects, although it did not eliminate the possibility of history effects because participants experienced the intervention and measurement schedule at different times

(Harvey et al., 2004; Watson & Workman, 1981). The study conditions were baseline (A), intervention (B), and maintenance (C), and movement between conditions occurred after stable responding was observed within the current phase.

Phase-Change Logic

Advancement from baseline to intervention was based on the Single-Case Reporting guideline in BEhavioural interventions (SCRIBE) standards and required each participant to demonstrate stable responding for a minimum of three data points before the next participant received training (Tate et al., 2016). Transition to maintenance occurred after the participant demonstrated a stable positive response pattern during the intervention and sufficient intervention data had been collected to document performance prior to the withdrawal of support (Tate et al., 2016). This staggered sequence was used to support demonstrations of experimental control across tiers while accommodating school scheduling constraints.

Participants

Researcher Descriptions

The principal investigator, identified as a female of Native American and Caucasian heritage, and, at the time of the study, was a certified teacher, a Board-Certified Behavior Analyst (BCBA), a certified Trust-Based Relational Intervention (TBRI®) practitioner, and a doctoral candidate in the Department of Educational Psychology at the University of Oklahoma. The second researcher, identified as a Caucasian female, held a PhD, was a certified teacher and BCBA, and had training in TBRI practices. Although specific TBRI® programming was not used in this study, its mention is noted to describe the researchers' familiarity with trauma-informed practices. Both members of the research team were employed by the participating school district.

Recruitment and Eligibility

Potential participants were identified through their employment within the same public school district as the researchers. Specifically, all elementary school counselors assigned to Title I elementary schools in the district were considered potential participants for the study. Potential participants received an email describing the study procedures and expectations. Inclusion criteria were as follows: (a) limited formal training in trauma-informed ABA techniques, defined for this study as no prior graduate coursework in trauma-informed ABA and no more than one district-level professional development session specifically focused on trauma-informed practices; (b) the ability to participate in a six-week intervention; (c) full-time employment within the designated school district; (e) regular interaction with students likely to have experienced adverse childhood experiences; and (f) responsibility for leading a grade-level social skills group at least once per week. Individuals who met the eligibility criteria and agreed to participate signed the consent form and completed the demographic survey. All eligible counselors who provided consent were enrolled in the study, whereas individuals who did not meet the criteria were excluded.

Participant Characteristics

The study included four school counselors. Participants varied in age, gender, teaching experience, counseling experience, and racial/ethnic background. Three participants identified as female and one as male. All were between 25 and 54 years of age and held master's degrees. Three participants had prior teaching experience, whereas one had served as a school counselor without prior classroom teaching experience. Two reported prior trauma-informed training, although one indicated that this training had not been applied in social skills groups. Three had fewer than five years of experience in their current counseling roles, whereas one had more than

10 years of experience. Additional demographic information is presented in Table 2, and pseudonyms have been assigned for confidentiality.

Table 2

Participant Demographic Data

	Finley	Campbell	Harper	Shepard
Study setting	School 1	School 2	School 3	School 4
Age	25 - 34	25 - 34	45 - 54	45 - 54
Gender	Female	Female	Female	Male
Race/ethnicity	American Indian	White	White	White
Years of teaching experience	9 years	5 years	0 years	3 years
Grades served as teacher	2nd-3rd	3rd-5th	N/A	7th-9th
Years of counselor experience	1-5 years	1-5 years	11-15 years	1-5 years
Grades served as counselor	K-6th	K-6th	K-6th	K-6th
School population	440	675	630	520
Caseload approximation	251 - 500	501 - 750	501 - 750	501 - 750
Prior trauma-informed training	No	No	Yes	Yes
Implemented trauma-informed strategies within school counseling activities	No	Yes	Yes	No

Setting

The study was conducted in four public K–12 elementary schools within a single suburban school district in the southern United States. For three participants, social skills groups were held in counseling classrooms, whereas one participant conducted them in students’ regular classrooms. This school district served over 20,000 students, with approximately 10% of families earning below the poverty line and 17% receiving state-administered food assistance. Schools were selected based on their Title I status and the research team's accessibility. Elementary Title I schools were prioritized because students from economically disadvantaged communities are disproportionately affected by traumatic exposure (Peterson, 2018) and were selected because grade-level social skills groups were not conducted at the secondary level within this school district.

Materials

Materials included recruitment and consent forms distributed by email, demographic forms, a recruitment log, data-entry spreadsheets, a secure SharePoint platform, a trauma-informed ABA fidelity checklist and rubric designed by the primary researcher and reviewed by an expert panel, a written feedback and coaching form, password-protected laptops, a social validity questionnaire, and an adapted School Counselor Self-Efficacy Scale. Participants also received a basket of sensory-friendly fidgets purchased by the researcher to support low-disruption sensory access during social skills groups. Weekly lesson materials were at the discretion of the school counselors because the groups did not follow a single packaged curriculum and were instead based on professional school counseling standards and local counseling needs, focusing on areas such as mental health and wellness, substance use and abuse, healthy relationships, interpersonal communication, decision-making, and advocacy (ASCA, 2025).

Measures

This study used four primary measurement components: (a) direct observation of trauma-informed ABA implementation during social skills groups; (b) a trauma-informed ABA fidelity rubric used during the observation; (c) an adapted self-efficacy scale; and (d) a social validity questionnaire. These measures were selected to assess observed implementation, support interpretation of procedural integrity, and capture participants' perceptions of confidence and intervention acceptability.

Dependent Variable

The dependent variable was the percentage of observed trauma-informed ABA practices implemented during 30- to 55-minute social skills counseling sessions for students in 4th- through 6th-grade. For this study, trauma-informed ABA practices were defined as intervention components that integrate trauma-sensitive assessment, supportive environments and relationships, emotional regulation strategies, reinforcement systems, and cultural and historical responsiveness, while addressing behavior in the context of a potential history of trauma (Austin et al., 2024; Rajaraman et al., 2021). This dependent variable was selected because it directly reflected school counselors' implementation of trauma-informed ABA components during authentic social skills groups and could be measured through direct observation. Focusing on implementation aligned with the study's purpose of examining whether structured micro-training grounded in behavioral skills training (BST) changed counselor practice rather than only knowledge or perceptions. This dependent variable was also selected to expand the literature on the application of trauma-informed ABA interventions in public school settings.

Trauma-informed ABA practices were measured through direct observation using a fidelity checklist aligned with trauma-informed ABA principles. Trained evaluators used the

checklist during in-person social skills groups as the primary observational scoring tool to record practices such as sensory support, emotional regulation instruction, student choice, trauma-sensitive language, and positive reinforcement (Kataoka et al., 2018; Wilson et al., 2021). The checklist yielded a total score of 24, and scores were converted to percentages of rubric items implemented. If a participant scored below 90% implementation fidelity, an additional micro-training session was conducted after the observed social skills group. Figure 4 presents the trauma-informed ABA intervention rubric, designed by the principal investigator based on the literature on trauma-informed principles and ABA interventions.

The rubric includes observable indicators across the domains of safety, trust and transparency, peer support, mutuality and collaboration, empowerment, and historical, cultural, and gender awareness, with scores ranging from 0 to 4 for each domain and descriptive performance bands for total scores. The rubric was then reviewed by an expert panel, the research assistant, and revisions were made prior to implementation. See Figure 4 for the Trauma-Informed ABA Intervention Rubric.

Figure 4

Trauma-Informed ABA Intervention Rubric

Component	Observable ABA Action	Expected Result	Performance Indicators	Score (0–4) & Notes
Safety	Implements sensory-friendly environments (e.g., flexible seating, visual schedules, noise buffers)	Establishes predictable, calm routines for students	4 = Consistently integrates multiple sensory supports; transitions managed smoothly 3 = Frequently integrates sensory accommodations 2 = Occasional, inconsistent use 1 = Minimal effort to	

			provide sensory adjustments 0 = Absent or disruptive sensory environment	
Trust / Transparency	Uses trauma-sensitive communication, honors consent and pacing	Builds autonomy and trust with students and families	4 = Fully transparent, family-informed decisions with clear explanations; consistent autonomy support 3 = Generally transparent with occasional lapses in clarity 2 = Partial or inconsistent inclusion of family/student voice 1 = Rarely involves families or explains processes 0 = Uses directive or coercive communication	
Peer Support	Facilitates emotional co-regulation and peer connection activities	Strengthens student emotional awareness and collaboration	4 = Consistently implements structured peer support practices and reflection 3 = Regular but limited peer-regulation opportunities 2 = Occasional pairing or sharing without explicit emotional targets 1 = Minimal peer collaboration 0 = None observed	
Mutuality / Collaboration	Co-develops intervention goals with students and team members	Shares power and decision-making in interventions	4 = Students and providers actively co-plan and review progress 3 = Collaborative planning occurs but not systematically 2 = Collaboration occasionally mentioned	

			1 = Limited mutual input 0 = Solely provider-directed decisions	
Empowerment	Encourages self-monitoring, reinforcement choice, and strength-based approaches	Promotes autonomy and personal growth	4 = Student self-monitors behavior and selects reinforcers regularly 3 = Reinforcer choice and monitoring used occasionally 2 = Minimal autonomy supported 1=Reinforcement externally controlled 0 = Student dependence persists	
Historical / Cultural / Gender Awareness	Aligns interventions with cultural, identity, and historical considerations	Honors identity and mitigates systemic barriers	4 = Consistently integrates student background in design and feedback 3 = Regular cultural sensitivity with limited systemic integration 2 = Occasional consideration without systematic approach 1 = Rare or token efforts 0 = Culturally insensitive or generic interventions	

Range	Performance Level	Description
21–24	Exemplary Application	Evidence of systematic, sustained trauma-informed ABA integration across all domains.
16–20	Proficient Implementation	Frequent and consistent use with minor gaps in fidelity or collaboration.
10–15	Developing Practice	Partial or emerging incorporation of trauma-informed and ABA practices.
5–9	Beginning Level	Minimal consistent evidence of trauma-informed application.

Self-Efficacy Measure

Participants completed an adapted self-efficacy rating scale based on the School Counselor Self-Efficacy Scale (SCSE). The original SCSE is a 43-item self-report instrument designed to assess school counselors' confidence in their professional abilities (Bodenhorn & Skaggs, 2005). For the present study, selected content was adapted into a 16-item survey focused on trauma-informed ABA applications within school counseling practice. Responses were rated on a five-point Likert-type scale ranging from 1 (not confident) to 5 (highly confident), and an average score was computed to represent each participant's overall self-efficacy level (Bodenhorn & Skaggs, 2005). Because approval to administer the scale was delayed due to a technical issue, the survey was administered only at the end of the project. Therefore, pretest-posttest comparisons were not possible, and these data were interpreted descriptively, using only postintervention self-efficacy ratings. See Figure 5 for the adapted self-efficacy survey.

Figure 5

School Counselor Self-Efficacy Survey

Rate how you would feel about engaging in the following behaviors in your school counselor activities:	1-no confidence				
	2-little confidence				
	3-some confidence				
	4-mostly confident				
	5-very confident				
1. Recognize situations that impact (both negatively and positively) student learning and achievement.	1	2	3	4	5
2. Consult and collaborate with teachers, staff, administrators and parents to promote student success.	1	2	3	4	5
3. Establish rapport with a student for individual counseling.	1	2	3	4	5
4. Conduct interventions with parents, guardians and families to resolve problems that impact students' effectiveness and success.	1	2	3	4	5
5. Teach students to apply problem-solving skills toward their academic, personal and career success.	1	2	3	4	5
6. Model and teach conflict resolution skills.	1	2	3	4	5
7. Ensure a safe environment for all students in my school.	1	2	3	4	5
8. Change situations in which an individual or group treats others in a disrespectful or harassing manner.	1	2	3	4	5

9. Teach students to use effective communication skills with peers, faculty, employers, family, etc.	1	2	3	4	5
10. Guide students in techniques to cope with peer pressure.	1	2	3	4	5
11. I can find some way of connecting and communicating with any student in my school.	1	2	3	4	5
12. Teach, develop and/or support students' coping mechanisms for dealing with crises in their lives – e.g., peer suicide, parent's death, abuse, etc.	1	2	3	4	5
13. Counsel effectively with students and families from different social/economic statuses.	1	2	3	4	5
14. Understand the viewpoints and experiences of students and parents who are from a different cultural background than myself.	1	2	3	4	5
15. Help students identify and attain attitudes, behaviors, and skills which lead to successful learning.	1	2	3	4	5
16. Select and implement applicable strategies to assess school-wide issues.	1	2	3	4	5

Social Validity

A social validity questionnaire was administered after the maintenance phase to assess participants' perceptions of the intervention's feasibility, acceptability, and effectiveness (Kataoka et al., 2018; Wolfe et al., 2019). Social validity measures are widely used in school-based and ABA research to determine whether intervention goals, procedures, and outcomes are perceived as meaningful, practical, and appropriate by participants, thereby influencing implementation quality and sustainability (Lane et al., 2014; Lott & McMahon, 2024). In this study, the questionnaire was designed to capture counselors' perspectives on how well the trauma-informed ABA training fit their roles, workloads, and school contexts, and on whether they viewed the approach as realistic to maintain beyond the formal study period. The social validity measure thus served as a separate outcome, distinct from self-efficacy and generalization, providing information about the intervention's contextual fit and potential for broader adoption.

Interobserver Agreement

Both researchers received training in procedural safeguards, evidence-based trauma-informed care, applied behavior analysis practices, and study-specific materials. All research team members were Board-Certified Behavior Analysts, current public-school educators, and held doctoral degrees or were doctoral candidates with training in trauma-informed practices. The primary researcher and research assistant reviewed each part of the rubric together, rehearsed scoring, and received feedback before the research assistant independently scored participant data. The research assistant observed at least 20% of all sessions across phases and participants. Interobserver agreement (IOA) was calculated using the total agreement method, defined as the number of agreements divided by the sum of agreements and disagreements, multiplied by 100; that is, $IOA = \text{Agreements} / (\text{Agreements} + \text{Disagreements}) \times 100$. IOA was assessed over 16 sessions in total (i.e., 4 baseline, 8 intervention, and 4 maintenance), representing approximately 20% of all sessions across phases. Although additional IOA observations would have strengthened reliability, further observations were not feasible due to the limited number of available social skills groups.

Independent Variable

The independent variable was a trauma-informed ABA micro-training package, designed by the principal investigator and grounded in BST. The intervention began with a 90-minute in-person training session, followed by brief micro-training sessions that provided instruction, modeling, and written feedback focused on trauma-informed ABA practices (e.g., implementing a sensory-friendly environment, using trauma-sensitive communication, facilitating emotional co-regulation, etc.) implemented in social skills groups.

The initial 90-minute training occurred after baseline and before the intervention phase. Training content covered trauma and its effects on the brain, development, behavior, and

learning, as well as trauma-informed care principles and ABA strategies tailored to trauma-responsive school counseling practice. Training materials were delivered through a PowerPoint that included video examples and guided instruction. The presentation was developed by the principal investigator and reviewed by an expert panel prior to implementation.

Subsequent micro-training sessions included didactic instruction and modeling by the principal investigator, written feedback, and collaborative problem-solving focused on implementation challenges. These booster sessions were designed to strengthen participants' use of trauma-informed ABA practices observed during social skills groups by offering feedback and guidance on how to specifically integrate an intervention, and typically lasted 10 to 15 minutes when additional support was needed. For instance, rehearsing and modeling the rephrasing of punitive language to make it more trauma-sensitive, or using a box fan as a noise-canceling tool to make the environment more sensory-friendly. If a counselor met or exceeded the 90% criterion on the rubric, no additional micro-training was provided following that session. If a counselor scored 89% or lower, a refresher micro-training session was conducted after the observed social skills group.

Training focused on implementing trauma-informed ABA strategies, such as sensory supports (providing fidgets and visual aids), emotional regulation techniques (teaching and practicing deep breathing), trauma-sensitive language (requesting specific behaviors instead of threatening punishment), reinforcement systems (developed with student input), and promoting student choice during naturally occurring group counseling sessions.

Procedures

After receiving approval from the University of Oklahoma Institutional Review Board, participants were recruited from a broader pool of school counselors within the designated

school district. Four participants chose to participate and were selected based on their interest and eligibility. Because recruitment relied on known contacts rather than the full population of school counselors within the district, the sampling method had some limitations. However, all participants held the same role and worked in similar settings, which reduced variation associated with participant characteristics (Slocum et al., 2022). The primary researcher explained the study aims and procedures in person and obtained written informed consent from each participant before data collection began.

Sequencing of Participants

After participant selection, the principal investigator reviewed each counselor's social skills lesson schedule to determine the order of entry into the study. Because the number of available social skills sessions was limited, participants were ordered by the feasibility of their schedules to ensure sufficient data were collected before group instruction was discontinued for the term.

Baseline Procedures

Baseline data were collected nonconcurrently for all counselors to evaluate their natural use of trauma-informed ABA practices. During baseline, counselors conducted their weekly grade-level social skills groups as usual and received no training, feedback, or coaching related to trauma-informed ABA practices. Baseline data were collected across approximately three to five sessions per participant to assess the natural occurrence of trauma-informed ABA practices prior to intervention. Finley entered baseline first, followed by the remaining participants in a staggered sequence after stable responding was observed in the preceding tier. This process continued until all participants entered the intervention phase. This approach supported experimental control while avoiding withdrawal of treatment (Horner et al., 2010).

Intervention Procedures

Once a participant demonstrated stable baseline responding, that participant received the initial 90-minute trauma-informed ABA training and entered the intervention phase. The principal investigator then observed subsequent social skills sessions and scored the percentage of rubric items implemented in the 4th- through 6th-grade groups. When participant scores fell below 90%, additional micro-training using the BST model (i.e., instruction, modeling, written feedback) was delivered after the observed session to support participant learning (Arghode et al., 2017; Silberman & Biech, 2015).

Subsequent micro-training sessions focused on applying or strengthening specific trauma-informed ABA strategies during social skills groups. For example, if a counselor used directive language during a group activity, the primary researcher modeled alternative, trauma-informed language that emphasized choice and aligned with SAMHSA's empowerment principle. This sequence was repeated across participants until all four counselors completed the intervention phase. Participants transitioned to the maintenance phase once their intervention data demonstrated a stable or increasing pattern of responding (Ledford & Gast, 2014).

Maintenance Procedures

After the intervention, a maintenance phase was conducted to determine whether gains were sustained following the withdrawal of support. Each participant was encouraged to implement the trauma-informed ABA practices across all grade-level social skills groups; however, data were collected only during the 4th- through 6th-grade lessons. During maintenance, the researchers continued to observe weekly social skills groups for approximately three to six additional sessions while withholding new instruction, feedback, or coaching. Participants entered maintenance using the same staggered pattern as before, although the interval between

phases varied because of scheduling constraints, ranging from one to two weeks to two to four weeks for some.

Movement Between Conditions

Advancement from one phase to the next required each participant to demonstrate stable responding within the current phase. A participant progressed to the next phase only after the preceding participant demonstrated a stable trend across at least three data points (What Works Clearinghouse, 2022). Training was introduced subsequently, following a staggered baseline. Once the first participant completed the initial training and demonstrated three consistent intervention practices and intervention data points, the second participant received training and entered the intervention phase. This process continued until all participants completed each phase of the study.

Scheduling Variability

Observation sessions for multiple participants occasionally occurred on the same day; however, participants were always in different phases of the study when data were collected. This scheduling arrangement was necessary to gather sufficient data on each participant, given the limited number of available social skills sessions. Despite occasional same-day observations, the staggered design structure was maintained.

Post-study Measures

After the maintenance phase was completed, each participant received the self-efficacy and social validity surveys by email and was asked to complete and return them.

Procedural Fidelity

Procedural fidelity referred to the extent to which the primary researcher adhered to the planned training, feedback, and observation protocols. To assess procedural fidelity, the research

assistant directly observed at least 20% of the initial training sessions and 20% of sessions in each subsequent phase (i.e., baseline, intervention, maintenance). These observations helped ensure that all participants received comparable guidance and support from the primary researcher and reduced the likelihood that observed changes in counselor behavior were attributable to inconsistent implementation.

In addition, a micro-training feedback form covering all major study components, including training and feedback procedures, was used to monitor whether the intervention was implemented as intended. Both observers used identical data collection forms. Implementation fidelity was assessed by scoring counselors' use of trauma-informed ABA practices during social skills groups with the trauma-informed ABA rubric and the micro-training feedback form. These scores reflected the extent to which participants implemented the independent variable as designed. Figure 6 presents the written feedback and coaching form.

Figure 6

Micro-Training Feedback Form

Micro-Training Feedback Form

Study: Enhancing Trauma-Informed Practice in School Counselor-Led Social Groups
Session Type: Initial Training ☐ Refresher ☐ Maintenance Support ☐
Participant Code: _____ Date: _____ Trainer: _____

Section 1: Session Overview

1. Session Focus/Content Area: _____
2. Duration of Training: _____ minutes
3. Format: In-person ☐ Zoom ☐ Other ☐ _____

Section 2: Implementation Feedback

Focus Area	Observed Strengths	Needs Improvement	Notes/Examples
Consistent use of trauma-informed ABA strategies	☐	☐	
Use of supportive and non-punitive language	☐	☐	
Promoting emotional safety and predictability	☐	☐	
Providing student choice and empowerment	☐	☐	
Reinforcing positive behaviors effectively	☐	☐	
Collaboration and rapport with students	☐	☐	

Section 3: Self-Reflection (completed by participant)

1. Which aspects of this session felt most relevant to my daily work? _____
2. One trauma-informed ABA strategy I plan to strengthen during my next group is: _____
3. My current confidence level in applying trauma-informed techniques:
0 (No confidence) – 10 (Highly confident): _____

Section 4: Trainer Notes and Goal-Setting

1. Immediate feedback provided (oral/written): _____
2. Agreed-upon goal(s) before next observation: _____
3. Additional resources or modeling planned: _____

Section 5: Fidelity Summary

1. Fidelity checklist overall score: _____ % (Target ≥ 80 %)
2. Additional micro-training required? Yes ☐ No ☐
3. Trainer signature: _____ Date: _____
4. Participant acknowledgment: _____ Date: _____

Generalization

Informal observations and participant discussions were used to explore the perceived transfer of trauma-informed ABA practices to counseling contexts beyond the target 4th- through 6th-grade settings. These data were gathered to help the researchers understand whether counselors were beginning to apply the strategies with other grade levels, in different counseling formats, or in broader school interactions, thereby providing preliminary information about the intervention's generalization and contextual fit. Because these observations and discussions were exploratory and not rigorously collected, they were treated as descriptive data rather than analyzed as a formal dependent variable.

Data Analysis

The primary analytic method was visual analysis of graphed data to evaluate whether a functional relation existed between the independent and dependent variables. Visual analysis focused on level, trend, variability, immediacy of effect, overlap, and consistency of data patterns within and across phases (Ledford & Gast, 2014; Wolfe et al., 2019). Four tiers were used to compare behavior change across participants. Consistent evidence of change across two or more tiers strengthens the demonstration of experimental control (Lanovaz & Turgeon, 2020; Ledford & Gast, 2018).

To promote methodological consistency, the principal researcher adhered to WWC design standards, which included: (a) analyzing the baseline to identify concerns and verify the stability of data collection; (b) assessing data levels for trends and variability within each phase independently; (c) comparing phases for overlap, immediacy, and consistency; and (d) demonstrating three effects at three distinct time points (What Works Clearinghouse, 2022).

Visual analysis was conducted in two steps. First, a traditional visual inspection was completed, with attention to level, trend, variability, immediacy of effect, overlap, and

consistency of data patterns within and across phases. Second, the visual analysis protocol developed by Wolfe et al. (2019) was applied to each multiple-baseline graph. The protocol guided the analyst through a series of design-specific questions about within-tier and across-tier data patterns, with each response weighted according to its contribution to demonstrating experimental control. Each question addressed an aspect of experimental control. Responses that supported a functional relation contributed positively to the final score, whereas responses that weakened that inference reduced the score. The resulting sum yields a continuous experimental control score ranging from 0 to 5 (Wolfe et al., 2019). This protocol provided a numerical index of experimental control and functional relation for each participant in the study. Effect sizes were also analyzed across conditions and over time. Figure 7 depicts the Systematic Protocol for the Visual Analysis of Single-Case Research Data.

Figure 7

Systematic Protocol for the Visual Analysis of Single-Case Research Data

	Question	Select Response	Point Value
1	TIER 1 BASELINE STABILITY: Are there at least 3 data points in baseline for Tier 1 and can you predict the future pattern of the behavior?	▼	
2	TIER 1 TREATMENT STABILITY: Are there at least 3 data points in treatment for Tier 1 and can you predict the future pattern of the behavior?	▼	
3	TIER 1 PHASE CONTRAST: Project the trend of Tier 1 baseline into the Tier 1 treatment phase. Is the level, trend, or variability of the data in the Tier 1 treatment phase different than what you would predict based on the baseline data for Tier 1?	▼	0
4	TIER 1 IMMEDIACY: Is there an immediate change from the last 3-5 data points in baseline to the first 3-5 datapoints in treatment for Tier 1?	▼	0
5	TIER 1 OVERLAP: Do less than 30% of the treatment datapoints overlap with the baseline datapoints for Tier 1?	▼	0
6	TIER 2 BASELINE STABILITY: Are there at least 3 data points in baseline for Tier 2 and can you predict the future pattern of the behavior?	▼	
7	TIER 2 VERTICAL ANALYSIS: Did the baseline data path of Tier 2 change when the treatment began with Tier 1?	▼	0
8	TIER 2 STAGGERED TREATMENT: Was the treatment introduced to Tier 2 AFTER it was introduced to Tier 1?	▼	
9	TIER 2 TREATMENT STABILITY: Are there at least 3 data points in treatment for Tier 2 and can you predict the future pattern of the behavior?	▼	
10	TIER 2 PHASE CONTRAST: Project the trend of Tier 2 baseline into the treatment phase. Is the level, trend, or variability of the data in the Tier 2 treatment phase different than what you would predict based on the baseline data for Tier 2?	▼	0
11	TIER 2 IMMEDIACY: Is there an immediate change from the last 3-5 data points in baseline to the first 3-5 datapoints in treatment for Tier 2?	▼	0
12	TIER 2 OVERLAP: Do less than 30% of the treatment datapoints overlap with the baseline datapoints for Tier 2?	▼	0
13	CONSISTENCY: Are the data patterns of treatment for Tier 1 and Tier 2 similar in level, trend, or variability?	▼	0
14	TIER 3 BASELINE STABILITY: Are there at least 3 data points in baseline for Tier 3 and can you predict the future pattern of the behavior?	▼	
15	TIER 3 VERTICAL ANALYSIS: Did the baseline data path of Tier 3 change when the treatment began with Tier 1 or Tier 2?	▼	0
16	TIER 3 STAGGERED TREATMENT: Was the treatment introduced to Tier 3 AFTER it was introduced to Tier 2?	▼	
17	TIER 3 TREATMENT STABILITY: Are there at least 3 data points in treatment for Tier 3 and can you predict the future pattern of the behavior?	▼	
18	TIER 3 PHASE CONTRAST: Project the trend of Tier 3 baseline into the Tier 3 treatment phase. Is the level, trend, or variability of the data in the Tier 3 treatment phase different than what you would predict based on the baseline data for Tier 3?	▼	0
19	TIER 3 IMMEDIACY: Is there an immediate change from the last 3-5 data points in baseline to the first 3-5 datapoints in treatment for Tier 3?	▼	0
20	TIER 3 OVERLAP: Do less than 30% of the treatment datapoints overlap with the baseline datapoints for Tier 3?	▼	0
21	CONSISTENCY: Is the data pattern of treatment for Tier 3 similar in level, trend, or variability to the data pattern in Tiers 1 and 2?	▼	0
	TIER 4 BASELINE STABILITY: Are there at least 3 data points in baseline for Tier 4 and can you predict the future pattern of the behavior?	▼	
	TIER 4 VERTICAL ANALYSIS: Did the baseline data path of Tier 4 change when the treatment began with Tier 1, 2, or 3?	▼	0
	TIER 4 STAGGERED TREATMENT: Was the treatment introduced to Tier 4 AFTER it was introduced to Tier 3?	▼	
	TIER 4 TREATMENT STABILITY: Are there at least 3 data points in treatment for Tier 4 and can you predict the future pattern of the behavior?	▼	
	TIER 4 PHASE CONTRAST: Project the trend of Tier 4 baseline into the Tier 4 treatment phase. Is the level, trend, or variability of the data in the Tier 4 treatment phase different than what you would predict based on the baseline data for Tier 4?	▼	0
	TIER 4 IMMEDIACY: Is there an immediate change from the last 3-5 data points in baseline to the first 3-5 datapoints in treatment for Tier 4?	▼	0
	TIER 4 OVERLAP: Do less than 30% of the treatment datapoints overlap with the baseline datapoints for Tier 4?	▼	0
	CONSISTENCY: Is the data pattern of treatment for Tier 4 similar in level, trend, or variability to the data pattern in at least two previous tiers?	▼	0
	SCORE		0

Additional exploratory analyses not specified a priori, including descriptive statistics and the percentage of non-overlapping data, were used to further describe the data and identify response patterns.

Conclusion

Chapter 4 presented the quantitative and qualitative results of the study, including changes in counselor implementation across the baseline, intervention, and maintenance phases, as well as social validity findings regarding participants' perceptions of the training. Chapter 5 builds on these findings by interpreting their meaning in relation to the research questions, the existing literature, and the broader implications for practice in rural special education settings. In addition, the final chapter considers important limitations of the study and offers directions for future research.

CHAPTER 4

Results

This chapter presents findings related to the two research questions and is organized to move from primary outcome data to supporting measures. It begins with a detailed report of quantitative results on implementation fidelity across the baseline, intervention, and maintenance phases, including visual analyses of level, trend, and variability, as well as effect size estimates to quantify the magnitude of change. The chapter then summarizes interobserver agreement and Tau-U data to document the consistency of observational scoring, followed by results from the counselor self-efficacy measure. Finally, both quantitative ratings and qualitative comments from the social validity measures are presented to capture participants' perceptions of the intervention's acceptability, feasibility, and perceived usefulness.

Research Question 1: Is there a functional relation between micro-training and the increased rate at which each counselor employs a trauma-informed ABA intervention?

Across all four participants, implementation of trauma-informed ABA practices increased after the introduction of the micro-training package. Visual analysis supported a functional relation, and Tau-U values indicated strong intervention effects for each participant. To address the first research question, visual analysis and descriptive data were used to evaluate changes in the use of trauma-informed ABA interventions during grade-level social skills groups following micro-training. Baseline data showed little variation among participants. All participants showed an immediate increase in implementation fidelity when transitioning to the intervention phase. Maintenance scores also remained high throughout the brief follow-up period.

In total, 38 social skills groups for 4th- through 6th-graders were observed across all phases for all four participants. Finley conducted five social skills groups during baseline, three

during intervention, and three during the maintenance phase. Originally, five social skills groups were scheduled for Finley during the intervention phase, but two sessions were canceled at the participant's request. Campbell conducted four social skills groups during baseline, five during intervention, and three during maintenance. Harper conducted three social skills groups during baseline, six during the intervention, and three during maintenance. Like Finley, Harper initially had five groups scheduled during baseline, but two were canceled after grade-level teachers requested the cancellation to accommodate a school event. Additionally, Harper's data showed a decrease in the implementation fidelity of trauma-informed ABA interventions during the intervention phase, because the session started late after the counselor's unexpected meeting with a child welfare representative, resulting in missed activities. Because this session deviated from the planned routine, the corresponding data point should be interpreted with caution. Shepard conducted four social skills groups during baseline, five during intervention, and three during the maintenance phase. Table 3 presents the mean quality score for each participant across all study phases.

Table 3

Mean Quality Score Per Participant Per Phase

Phase	Finley	Campbell	Harper	Shepard
Baseline	8%	8%	2.66%	70%
Intervention	43%	85.8%	72.08%	96%
Maintenance	94.66%	100%	98.66%	100%

Baseline levels differed among participants, with Shepard starting at a substantially higher level of implementation than the other three. This difference is important for interpreting

the relative magnitude of change across phases. Baseline data showed minimal variation overall, with Finley, Campbell, and Harper ranging from 0% to 8% of trauma-informed ABA interventions used, whereas Shepard ranged from 67% to 71%. Shepard, who demonstrated the highest baseline rate of trauma-informed ABA practices, was also the only participant using a social-emotional curriculum to guide grade-level social skills groups. Despite these baseline differences, all participants showed an increase in implementation fidelity upon entering the intervention phase.

During the intervention phase, each participant's implementation fidelity increased relative to baseline. Following an initial visual assessment, Finley, Campbell, and Harper showed changes from baseline to the intervention phase, whereas Shepard showed comparatively less change across phases. The number of micro-training sessions varied across participants, but all demonstrated increases following the intervention. Finley led three social skills groups during this phase, with implementation fidelity ranging from 25% to 54%, and completed three micro-training sessions. Campbell led four social skills groups, with implementation fidelity from 67% to 100%, and completed two micro-training sessions. Harper led six social skills groups, with implementation fidelity from 45% to 96%, and completed four micro-training sessions. Shepard led five social skills groups, with implementation fidelity from 92% to 100%, and did not require any micro-training sessions.

Maintenance performance remained high across participants, ranging from 92% to 100%. Variability during maintenance was minimal, and in some cases, maintenance scores exceeded those of the average intervention phase. These findings suggest promising short-term maintenance of implementation following the intervention. The interquartile range was also calculated across phases and participants to evaluate variability and identify potential outliers.

The results indicated minimal to no variability during baseline and maintenance sessions across all participants. In contrast, intervention-phase scores showed greater variability, which decreased as performance improved. The multiple-baseline graph is presented in Figure 8, and interquartile range data are displayed in Figure 9.

Figure 8

Results of Participant Data Across Sessions

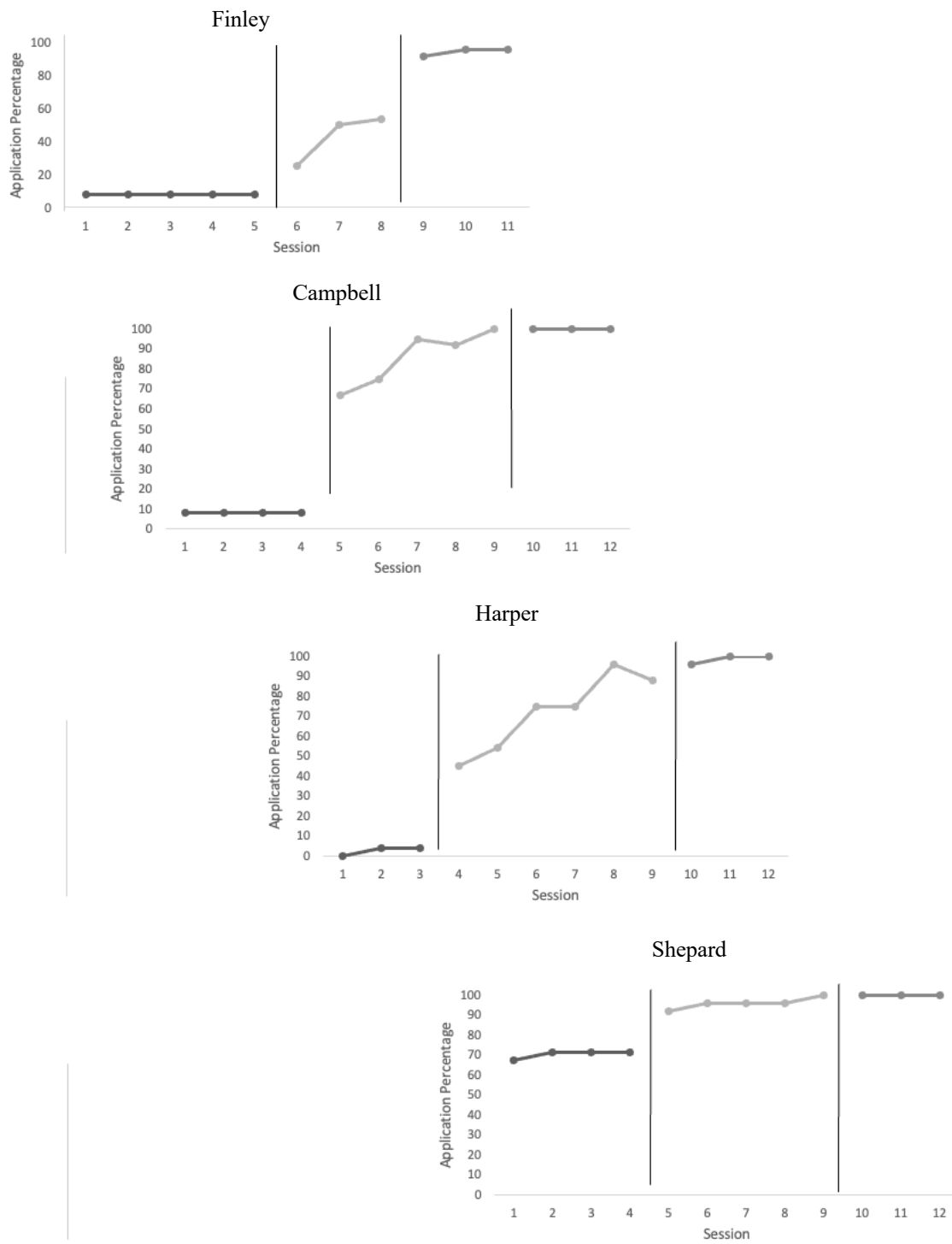
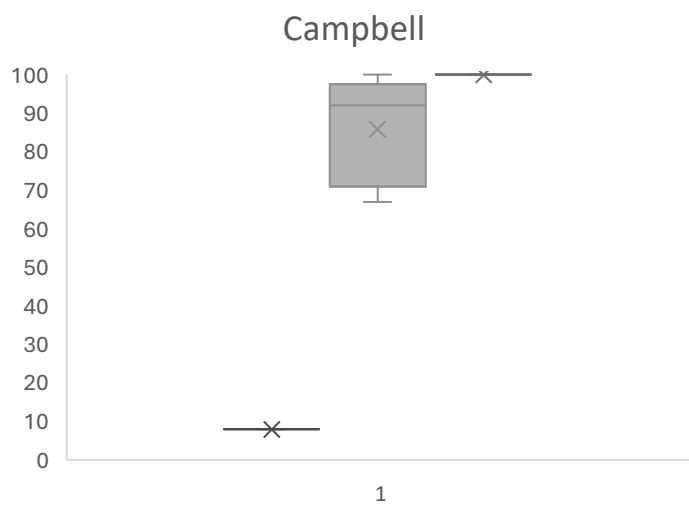
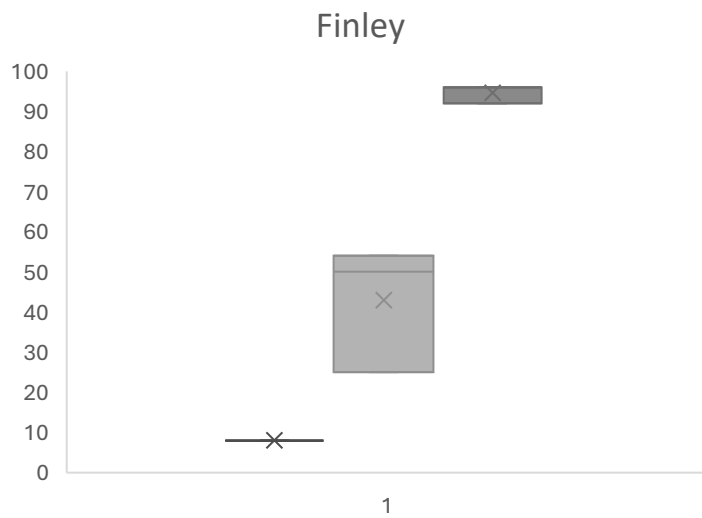
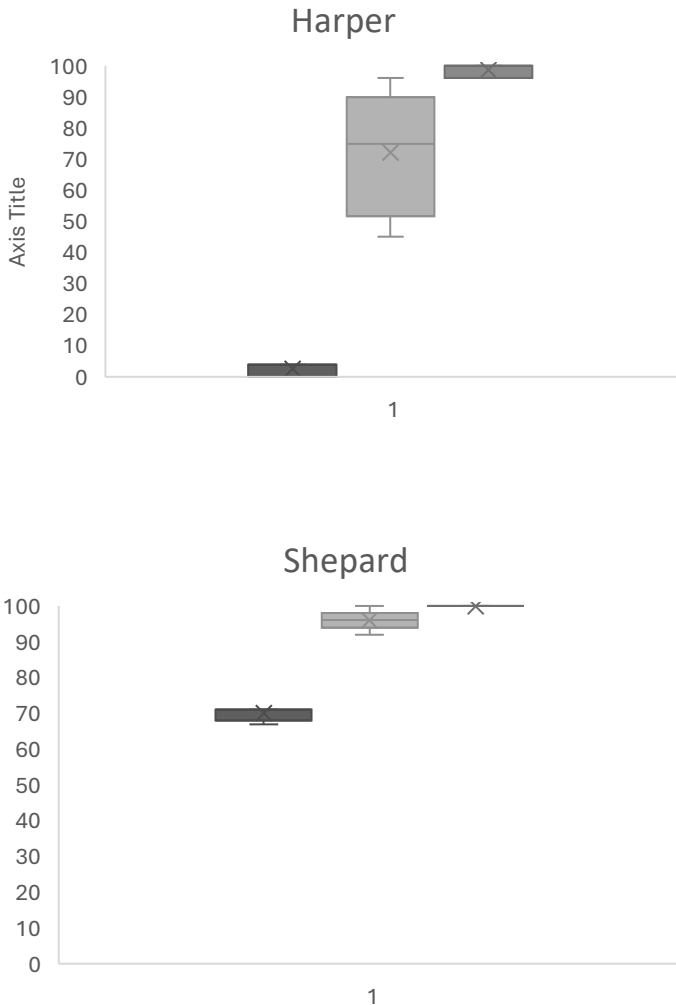


Figure 9

Interquartile Range





The initial data review involved visual analysis across four tiers of comparison, consistent with a multiple-baseline-across-participant design. This analysis supported a functional relation between the intervention and behavior change for all participants. This visual analysis followed Wolfe et al.'s (2019) protocol for multiple-baseline designs, which evaluates stability, phase contrast, immediacy, overlap, consistency, vertical analysis, and staggered treatment. Using dichotomous responses, the protocol yields a score ranging from 0 (no functional relation) to 5 (strong evidence of a functional relation). The final score was 5, indicating the presence of at least three core effects and strong visual evidence of intervention impact (Wolfe et al., 2019). See Table 4 for the visual analysis protocol.

Table 4*Completed and Scored Four-Tiered Visual Analysis Protocol*

Question	Response	Point Value
TIER 1 BASELINE STABILITY: Are there at least 3 data points in baseline for Tier 1 and can you predict the future pattern of the behavior?	Yes	N/A
TIER 1 TREATMENT STABILITY: Are there at least 3 data points in treatment for Tier 1 and can you predict the future pattern of the behavior?	Yes	N/A
TIER 1 PHASE CONTRAST: Project the trend of Tier 1 baseline into the Tier 1 treatment phase. Is the level, trend, or variability of the data in the Tier 1 treatment phase different than what you would predict based on the baseline data for Tier 1?	Yes	0.75
TIER 1 IMMEDIACY: Is there an immediate change from the last 3-5 data points in baseline to the first 3-5 datapoints in treatment for Tier 1?	Yes	0.18
TIER 1 OVERLAP: Do less than 30% of the treatment datapoints overlap with the baseline datapoints for Tier 1?	Yes	0.18
TIER 2 BASELINE STABILITY: Are there at least 3 data points in baseline for Tier 2 and can you predict the future pattern of the behavior?	Yes	N/A
TIER 2 VERTICAL ANALYSIS: Did the baseline data path of Tier 2 change when the treatment began with Tier 1?	No	0
TIER 2 STAGGERED TREATMENT: Was the treatment introduced to Tier 2 AFTER it was introduced to Tier 1?	Yes	N/A
TIER 2 TREATMENT STABILITY: Are there at least 3 data points in treatment for Tier 2 and can you predict the future pattern of the behavior?	Yes	N/A
TIER 2 PHASE CONTRAST: Project the trend of Tier 2 baseline into the treatment phase. Is the level, trend, or variability of the data in the Tier 2 treatment phase different than what you would predict based on the baseline data for Tier 2?	Yes	0.75
TIER 2 IMMEDIACY: Is there an immediate change from the last 3-5 data points in baseline to the first 3-5 datapoints in treatment for Tier 2?	Yes	0.18
TIER 2 OVERLAP: Do less than 30% of the treatment datapoints overlap with the baseline datapoints for Tier 2?	Yes	0.18
CONSISTENCY: Are the data patterns of treatment for Tier 1 and Tier 2 similar in level, trend, or variability?	Yes	0.18
TIER 3 BASELINE STABILITY: Are there at least 3 data points in baseline for Tier 3 and can you predict the future pattern of the behavior?	Yes	N/A

TIER 3 VERTICAL ANALYSIS: Did the baseline data path of Tier 3 change when the treatment began with Tier 1 or Tier 2?	No	0
TIER 3 STAGGERED TREATMENT: Was the treatment introduced to Tier 3 AFTER it was introduced to Tier 2?	Yes	N/A
TIER 3 TREATMENT STABILITY: Are there at least 3 data points in treatment for Tier 3 and can you predict the future pattern of the behavior?	Yes	N/A
TIER 3 PHASE CONTRAST: Project the trend of Tier 3 baseline into the Tier 3 treatment phase. Is the level, trend, or variability of the data in the Tier 3 treatment phase different than what you would predict based on the baseline data for Tier 3?	Yes	0.75
TIER 3 IMMEDIACY: Is there an immediate change from the last 3-5 data points in baseline to the first 3-5 datapoints in treatment for Tier 3?	Yes	0.18
TIER 3 OVERLAP: Do less than 30% of the treatment datapoints overlap with the baseline datapoints for Tier 3?	Yes	0.18
CONSISTENCY: Is the data pattern of treatment for Tier 3 similar in level, trend, or variability to the data pattern in Tiers 1 and 2?	Yes	0.18
TIER 4 BASELINE STABILITY: Are there at least 3 data points in baseline for Tier 4 and can you predict the future pattern of the behavior?	Yes	N/A
TIER 4 VERTICAL ANALYSIS: Did the baseline data path of Tier 4 change when the treatment began with Tier 1, 2, or 3?	No	0
TIER 4 STAGGERED TREATMENT: Was the treatment introduced to Tier 4 AFTER it was introduced to Tier 3?	Yes	N/A
TIER 4 TREATMENT STABILITY: Are there at least 3 data points in treatment for Tier 4 and can you predict the future pattern of the behavior?	Yes	N/A
TIER 4 PHASE CONTRAST: Project the trend of Tier 4 baseline into the Tier 4 treatment phase. Is the level, trend, or variability of the data in the Tier 4 treatment phase different than what you would predict based on the baseline data for Tier 4?	Yes	0.75
TIER 4 IMMEDIACY: Is there an immediate change from the last 3-5 data points in baseline to the first 3-5 datapoints in treatment for Tier 4?	Yes	0.18
TIER 4 OVERLAP: Do less than 30% of the treatment datapoints overlap with the baseline datapoints for Tier 4?	Yes	0.18
CONSISTENCY: Is the data pattern of treatment for Tier 4 similar in level, trend, or variability to the data pattern in at least two previous tiers?	Yes	0.18
SCORE		5

Note: Content obtained from Wolfe, K., Barton, E. E., & Meadan, H. (2019). Systematic protocols for the visual analysis of single-case research data. Behavior Analysis in Practice, 12(2), 491–502. <https://doi.org/10.1007/s40617-019-00336-7>

All four participants completed the self-efficacy survey. Post-study self-efficacy ratings were generally high across items. The highest average ratings were observed for establishing rapport, collaborating with others, and ensuring student safety. Lower relative ratings were observed for items related to counseling across socioeconomic differences, supporting student coping during crises, and responding to disrespectful or harassing behavior. Because a pre-intervention self-efficacy measure was not collected, these data should be interpreted descriptively rather than as evidence of change over time. and Table 5 for the results of the School Counselor Self-Efficacy Survey.

Table 5

Results of the School Counselor Self-Efficacy Survey

Self-Efficacy Statements	Average Score	Minimum Score	Maximum Score
Recognize situations that impact (both negatively and positively) student learning and achievement.	4.25	4	5
Consult and collaborate with teachers, staff, administrators, and parents to promote student success.	4.75	4	5
Establish rapport with a student for individual counseling.	4.75	4	5
Conduct interventions with parents, guardians, and families to resolve problems that impact students' effectiveness and success.	4.25	4	5
Teach students to apply problem-solving skills toward their academic, personal, and career success.	4.25	4	5
Model and teach conflict resolution skills.	4.5	4	5
Ensure a safe environment for all students in my school.	4.75	4	5
Change situations in which an individual or group treats others in a disrespectful or harassing manner.	4	4	4
Teach students to use effective communication skills with peers, faculty, employers, family, etc.	4.5	4	5
Guide students in techniques to cope with peer pressure.	4.25	4	5
I can find some ways of connecting and communicating with any student in my school.	4.5	4	5
Teach, develop and/or support students' coping mechanisms for dealing with crises in their lives – e.g., peer suicide, parent's death, abuse, etc.	4	3	5

Counsel effectively with students and families from different social/economic statuses.	3.75	3	4
Understand the viewpoints and experiences of students and parents who are from different cultural backgrounds than myself.	4.25	4	5
Help students identify and attain attitudes, behaviors, and skills which lead to successful learning.	4	4	4
Select and implement applicable strategies to assess school-wide issues.	4.25	4	5

Interobserver Agreement

Interobserver agreement (IOA) was calculated using the total-agreement method, defined as $\text{Agreements} \div (\text{Agreements} + \text{Disagreements}) \times 100$. Across 16 double-coded sessions (4 baseline, 8 intervention, and 4 maintenance), representing approximately 20% of all sessions across phases. Observers agreed on 14 sessions and disagreed on 2, yielding a total-agreement IOA of 87.5%. This level of agreement generally indicates strong consistency in rubric scoring across observers, supporting the credibility of the implementation data used to evaluate the intervention's effects.

Tau-U

Tau-U effect size estimates were calculated to quantify changes from baseline to intervention for each counselor. Tau-U was computed by subtracting the number of improving pairs from the number of worsening pairs and dividing by the total number of non-tied pairs. Common interpretive guidelines indicate that values of .80 or greater denote a very large effect (Parker et al., 2011). For all four participants, Tau-U was 1.0, indicating that all intervention data points exceeded baseline data points and that there were no overlapping or worsening pairs. This pattern indicates a very large effect size and is consistent with strong, systematic improvements in implementation fidelity following the introduction of the micro-training package.

In summary, to address the research question: Is there a functional relation between micro-training and the increased implementation fidelity with which each counselor employs a trauma-informed ABA intervention? —A functional relation was established, as evidenced by consistent patterns in visual analysis and confirmed by Tau-U effect size estimates.

Social Validity

Open-ended social validity responses were analyzed using an inductive content analysis (Elo & Kyngäs, 2008). The principal researcher reviewed all participant responses multiple times, assigned initial codes to recurring words, phrases, and ideas, and grouped similar codes into broader categories to identify common response patterns. Given the small sample size, the qualitative analysis was intended to provide a descriptive summary of participants' perspectives rather than a formal theory. Themes were finalized by reviewing the coded responses for consistency with the original written comments and will be discussed further in relation to the second research question.

Research Question 2: Were the micro-training and its effects socially valid for participants?

After quantitative data collection was completed, participants were asked to evaluate their experience using trauma-informed ABA interventions in their school counseling practice (Anderson et al., 2022). These questions focused on participants' perceptions of the interventions' helpfulness, effectiveness, relevance, and practicality. Participants also described perceived changes in their own practice, which were explored further through questionnaire data. The social validity measures were developed using Wolf's (1978) framework, which emphasizes that intervention goals, procedures, and outcomes should be socially meaningful and acceptable.

The questionnaire used a 5-point Likert-type scale with response options ranging from 1 (strongly disagree) to 5 (strongly agree). The interview items are presented in Table 6.

Table 6

Social Validity Interview Items

Post-Interview Questions
1-Strongly disagree 2-Disagree 3-Neutral 4-Agree 5-Strongly agree
1. The PowerPoint presentation effectively improved the trauma-informed ABA practices that I implemented. 2. The in-person coaching sessions effectively improved the rate of trauma-informed ABA practices that I used. 3. The in-person coaching sessions were more effective than the PowerPoint training in enhancing my skills in using trauma-informed ABA practices during social skills groups. 4. The content presented in the training was relevant to my trauma-informed practice needs. 5. The in-person coaching sessions provided practical, hands-on learning opportunities.

In addition to Likert-type ratings, the social validity measure included several open-ended questions that allowed participants to describe their experiences in their own words. Content analysis (Schreier et al., 2019), a qualitative data analysis method, was used to examine all written responses. The researcher read each response multiple times, assigned preliminary codes to recurring words, phrases, and ideas, and then grouped similar codes into broader categories to identify common themes in participants' experiences. Given the small number of participants, the analysis was intended to provide a descriptive summary of perceived strengths and needs

rather than to develop a formal theory. The qualitative social validity questions are presented in Table 7.

Table 7

Qualitative Social Validity Questions

Qualitative Questions
1. Describe the most valuable aspects of the PowerPoint training presentation. How did these compare to the most valuable aspects of the in-person coaching sessions? 2. How did the content relevance of the PowerPoint presentation compare to that of the in-person coaching sessions? 3. How would you describe the quality and usefulness of feedback received during the in-person coaching sessions? 4. How would you describe the quality and usefulness of the intervention package (PowerPoint training and coaching sessions)?

All four participants completed the social validity survey. Three main themes emerged from the qualitative analysis. The first theme highlighted the PowerPoint training as an important source of foundational knowledge. Participants indicated that the presentation helped them better understand trauma, its effects on student behavior and learning, and the rationale for using trauma-informed ABA strategies. Shepard shared that he “was able to learn what trauma is and the impact it has on student’s development cognitively, mentally, and emotionally,” describing the session as “a great reminder of the impact trauma has on a student’s behavior, learning, and thought process” and noting that “the slides were thoughtfully created and easy to follow, increasing my ability to understand.” Harper commented that “the PowerPoint presentation gave me a strong starting point by introducing practical tools and strategies I could draw from,” while Campbell emphasized that “this is very useful and something that all educators should be informed about,” given that students often “come to us with heavy trauma, most that we don’t

know about.” Together, these comments underscore that the didactic component successfully established a clear, accessible foundation for trauma-informed practice.

The second theme emphasized the value of in-person coaching, modeling, and feedback for applying strategies in real settings. Participants reported that the micro-training sessions helped them translate the PowerPoint concepts into concrete skills during social skills groups and other counseling contexts. Finley stated, “I felt the in-person coaching sessions were much more valuable. The PowerPoint seemed a little long for the intended teaching purpose, and I was able to gain much more information and insight from the in-person coaching sessions.” Shepard explained that the coaching sessions provided opportunities to ask questions, observe modeled techniques, and receive immediate feedback on implementation. These responses suggest that, while the PowerPoint was viewed as a useful introduction, the interactive coaching was perceived as the most powerful driver of behavior change.

A third theme reflected participants’ overall judgments of the intervention package’s acceptability and practicality. Across responses, counselors characterized the combined PowerPoint and coaching as relevant to their trauma-related needs, aligned with their school counseling roles, and manageable within their schedules. Finley noted, “The intervention package was useful. I was hesitant to implement some of the strategies, but after implementing them, I was able to see their benefits,” highlighting both initial reservations and subsequent endorsement. Participants described the package as effective, useful, and worth the time required, and some expressed that strategies drawn from the training were something “all educators should be informed about,” reinforcing the perceived value and potential for broader dissemination.

Quantitative ratings were consistent with these themes. As shown in Table 8, average scores on the social validity items ranged from 4.25 to 5.0, indicating strong agreement that the training was effective and relevant. Participants reported that the PowerPoint presentation effectively improved the trauma-informed ABA practices they implemented ($M = 4.25$), that in-person coaching sessions effectively increased the rate of trauma-informed ABA practices they used ($M = 5.0$), and that coaching was more effective than the PowerPoint alone in enhancing their skills during social skills groups ($M = 4.5$). They rated the content as highly relevant to their trauma-informed practice needs ($M = 5.0$) and endorsed the in-person coaching sessions as providing practical, hands-on learning opportunities ($M = 4.75$).

Table 8

Social Validity Likert Scale Results

Social Validity Survey Statements	Average Score	Minimum Score	Maximum Score
The PowerPoint presentation effectively improved the trauma-informed ABA practices that I implemented.	4.25	4	5
The in-person coaching sessions effectively improved the rate of trauma-informed ABA practices that I used.	5	5	5
The in-person coaching sessions were more effective than the PowerPoint training in enhancing my skills in using trauma-informed ABA practices during social skills groups.	4.5	4	5
The content presented in the training was relevant to my trauma-informed practice needs.	5	5	5
The in-person coaching sessions provided practical, hands-on learning opportunities.	4.75	4	5

Using these qualitative and quantitative data to answer the research question—Were the micro-training and its effects socially valid for participants? —the intervention and its effects were found to be socially valid. Participants rated the procedures favorably and described the

coaching and materials as useful, relevant, and supportive of their professional practice.

Although overall feedback was positive, a few comments suggested that ongoing coaching or additional opportunities to practice in more complex situations (e.g., crisis responses or intense behavioral episodes) would be helpful, indicating that participants viewed the intervention as a strong starting point rather than a complete endpoint for professional learning.

It is essential to note that student outcomes were not assessed in this study. Student behavior, social-emotional functioning, and academic performance were not designated as formal dependent variables, and no systematic data collection occurred to track changes at the student level over time. Consequently, the results only reflect counselors' implementation fidelity, self-efficacy, and perceptions of the intervention, not its direct impact on students. Any potential effects on student outcomes are therefore speculative and should be considered as avenues for future research rather than confirmed findings of this study.

In summary, Chapter 4 presented evidence of increased implementation following intervention, strong short-term maintenance, high interobserver agreement, and favorable social validity outcomes. Chapter 5 interprets these findings in relation to the research questions, prior literature, implications for practice, and study limitations.

CHAPTER 5

Discussion

This study examined whether a micro-training model was associated with increased implementation of trauma-informed ABA practices by school counselors during grade-level social skills groups in Title I, high-needs elementary schools. A nonconcurrent multiple-baseline design across participants was used to evaluate the functional relation between the intervention and counselor implementation. The study also examined the social validity of the intervention and explored which components participants perceived as most helpful.

This design was selected because it was well-suited to evaluating change in counselor implementation over time while allowing staggered introduction of the intervention across participants. School counselors are often positioned to support students affected by trauma across multiple levels of school-based service delivery, yet may have limited time for extended professional development. Accordingly, the micro-teaching model was designed to provide individualized support while minimizing additional burden on participants.

The design allowed the study to be conducted across four Title I, high-needs elementary schools serving large populations of students from low-income backgrounds, a group at increased risk for trauma exposure and related support needs (Wade et al., 2014). To minimize participants' time commitment and preserve typical group routines, in-person micro-training was delivered between sessions.

Behavior Skills Training

This intervention package adapted components of BST to determine whether school counselors could acquire and implement trauma-informed ABA practices within a school setting using brief, targeted training. Overall, participants increased their implementation of trauma-

informed ABA practices following training. The observational data suggest that repeated practice, modeling, and feedback were likely important components of this improvement.

This study contributes to a growing yet limited body of research by exploring a practical way to enhance school counselors' adoption of trauma-informed ABA practices in school settings (Fye et al., 2022; Maynard et al., 2019). Greater consistency in the application of trauma-informed approaches by school counselors can improve relationships, foster emotional safety, and support students' social-emotional growth (ASCA, 2016; Fye et al., 2022). These results also highlight current professional standards requiring school counselors to develop skills in trauma-informed practices and associated social–emotional supports, as outlined in national position statements and state mandates for ongoing training on trauma and its effects on learning (ASCA, 2016; ASCA, 2024). As counselor training programs aim to systematically incorporate trauma-related content into preservice education, professional development initiatives like this intervention can serve as a valuable supplement to help school-based counselors build capacity for implementing trauma-informed practices effectively and sustainably in their daily work.

This study also suggests that trauma-informed ABA may provide a useful framework for supporting changes in educator behavior, particularly by shifting emphasis from compliance-oriented responses toward practices grounded in safety, predictability, and empowerment (Rajaraman et al., 2021). Although the present study did not directly measure educators' well-being or retention, the findings suggest that trauma-informed ABA may support more reflective and supportive responses from school counselors. Further research is needed to examine whether these practices influence educator stress, retention, or broader workforce outcomes.

Implications for Practice

Participant engagement with micro-training sessions varied, with no participant requiring more than 60 minutes of additional training time across the six-week study period. Participants also reported that the time investment was manageable relative to the perceived benefits of participation. These findings suggest that the intervention package, particularly the micro-training format, may be feasible to implement in public school settings, as it appeared to make a meaningful difference in counselor implementation. One of the clearest takeaways from the study is that the micro-training seemed to matter. Across participants, visual analysis supported a functional relation between the intervention and increased use of trauma-informed ABA practices. All four counselors improved after the intervention began, although the degree of change was not the same for everyone. This is probably the strongest evidence in the study for the intervention's usefulness. In addition, participants maintained relatively high levels of trauma-informed ABA implementation during the maintenance phase in the absence of continued training, modeling, or feedback. Although this finding is promising, longer-term follow-up would be needed before concluding that ongoing support is unnecessary.

It is also important to acknowledge that the counselors did not all begin in the same place, and these differing baseline levels matter when interpreting the pattern of change across phases. Finley, Campbell, and Harper demonstrated very low baseline implementation, whereas Shepard started at a much higher level, leaving him with comparatively less room for observable growth. In this context, Shepard's smaller phase contrast is plausibly interpreted as a ceiling effect—performance approaching the top of the measurement scale—rather than evidence of a weaker response to the intervention (Andrade, 2021). It is also noteworthy that Shepard was the only counselor who was already implementing a social-emotional curriculum at baseline, which may partly account for his stronger initial performance. Together, these differences suggest that

prior instructional experience and existing curricular structures may shape the extent to which individual counselors derive additional benefit from training, a pattern that aligns with broader findings indicating that initial status and context can moderate intervention effects.

Another important pattern is that all participants showed an increase once the intervention began. This clear, immediate shift in performance across cases is consistent with the expectation that the independent variable produced the change, because the improvement co-occurred with the onset of the intervention rather than emerging gradually over time. In single-case experimental logic, such immediacy of effect reduces the likelihood that maturation, repeated measurement, or other time-related factors alone account for the observed gains, thereby strengthening the internal validity of the findings.

Further implications for practice are evident in the data sources themselves. Maintenance data were encouraging. Scores remained high, ranging from 92% to 100%, with minimal variability across sessions during that phase, suggesting that counselors sustained their use of the targeted practices with reasonable consistency. For some participants, maintenance levels even exceeded their mean intervention scores, suggesting they continued to refine and consolidate their skills after formal training ended. At the same time, the maintenance phase covered only a limited number of sessions, so these findings are best interpreted as evidence of promising short-term maintenance rather than definitive support for the long-term durability of effects.

The self-efficacy data were informative, but their interpretive power is limited. Because there was no pre-intervention measure, the ratings cannot be used to draw conclusions about growth over time or the training's impact. Instead, they serve as a snapshot of participants' confidence in specific practice domains at the conclusion of the study. The highest confidence ratings clustered around rapport-building, collaboration with others, and maintaining safety,

suggesting that participants felt strongest in relationship-focused and safety-oriented aspects of their roles. In contrast, lower ratings in counseling across socioeconomic groups, support for crisis coping, and responsiveness to disrespectful or harassing behavior highlight areas in which counselors felt less prepared. These domains may represent especially valuable targets for future professional development or coaching.

Further, the social validity results were clearly positive and warrant emphasis as a key part of the findings. Participants rated the overall intervention package favorably, with in-person coaching emerging as the most valued component for both perceived effectiveness and practical relevance. Hands-on learning opportunities also received strong ratings, reinforcing the idea that active practice and feedback were critical for skill acquisition. In written comments, participants described the PowerPoint content as useful for establishing a foundational understanding, while the coaching sessions and performance feedback were highlighted as especially helpful for translating that knowledge into day-to-day practice. Taken together, these responses suggest that the package was experienced as relevant, feasible, and a worthwhile investment of their time, supporting its acceptability and potential for real-world implementation.

However, the findings do not indicate that the intervention reversed trauma-related brain changes, improved educator retention, disrupted the school-to-prison pipeline, eliminated the need for ongoing coaching, directly improved student mental health, generalized seamlessly to all school contexts, or established trauma-informed ABA as a fully validated approach in public schools. This information was not a primary focus of the present study and was not systematically examined; however, it provides important contextual insight that may be valuable for interpreting the findings and informing future work. Still, informal observations during social skills groups suggested that students were often calmer, more engaged, and more responsive to

prompts during intervention and maintenance than during baseline. Participants also reported feeling more confident and better prepared to work with students in the upper grades by the end of the study. While these are meaningful possibilities, they represent hypotheses for future investigation rather than outcomes that can be inferred from this single study. Because outcomes were not systematically measured as student-level dependent variables, they should be interpreted cautiously.

Limitations and Implications for Future Research

This study had several limitations. First, it was conducted during the third quarter of the school year, which restricted the number of available social skills group sessions. In this district, grade-level social skills groups occur less frequently after spring break because school counselors shift their attention to state testing and end-of-year responsibilities. As a result, most data collection had to be completed before spring break, limiting opportunities for repeated practices and reducing the number of maintenance observations. Future studies conducted earlier in the school year and over a longer duration may provide stronger evidence regarding maintenance and generalization.

The six-week duration also limited the number of available observations and intervention opportunities. During this time, counselors were balancing state testing responsibilities, assemblies, school events, team meetings, and other typical duties of working in a Title I high-needs school. These competing demands may have reduced the amount of time participants could devote to preparing for and practicing trauma-informed ABA strategies. Although participants reported valuing the intervention and indicated that earlier implementation would have been helpful, these perceptions should not be interpreted as evidence of long-term motivation or future implementation beyond the study context.

Another limitation was that social skills groups could not be video recorded for privacy reasons, so all sessions had to be observed in person. This restriction reduced scheduling flexibility and limited the number of observations that could be completed, particularly during baseline and maintenance. Future studies could address this challenge by assigning dedicated observers to specific participants and initiating data collection earlier in the school year.

Participants were aware that their behavior was being observed and analyzed, which introduces reactivity. The presence of an observer may have influenced counselor behavior and affected implementation data. Although the researcher attempted to reduce reactivity through habituation, it is not possible to determine the extent to which observation influenced participant performance. Therefore, the maintenance data should not be interpreted as ruling out reactivity.

Finally, the initial training and all follow-up micro-training sessions were conducted by the primary researcher. As a result, the extent to which similar outcomes would occur when the intervention is delivered by other personnel remains unknown. The researcher's rapport with participants may have also influenced implementation and social validity outcomes. Future studies should examine whether comparable results are obtained when the intervention is delivered by other trainers and with other school-based personnel, such as classroom teachers. Additional research is also needed to establish the psychometric and applied validity of the trauma-informed ABA rubric and feedback form using larger samples and more extensive validation procedures.

Conclusion

This study examined whether micro-training was functionally related to increased implementation of trauma-informed ABA practices by school counselors in Title I high-needs schools during grade-level social skills groups. A nonconcurrent multiple-baseline design across

participants was used to evaluate change over time while minimizing participant burden. All four participants demonstrated increased implementation of trauma-informed ABA practices following the introduction of micro-training. Participants completed between 0 and 5 micro-training sessions, each lasting no more than 15 minutes, and no participant required more than 60 min of additional training time during the six-week study. Maintenance scores ranged from 92% to 100%, suggesting that high levels of implementation were sustained across the short maintenance period. These findings suggest that integrating trauma-informed practices into public school settings may be a practical and ethically important approach for supporting students who require behavioral and social-emotional intervention. By emphasizing principles such as safety, trust, choice, collaboration, empowerment, and cultural responsiveness, schools may foster environments that better support both students and staff. The present findings also suggest that micro-training may offer a feasible way to support implementation without requiring extensive additional time from school counselors.

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