Stopping the avalanche of trauma in schools through early intervention: a three-phase model proposal

Jayne M. Leh
Education Program, Penn State Berks, Reading, Pennsylvania, USA

Abstract
Purpose – Groups of students were enrolled in a course that sought to produce a three-phase theoretical model over three semesters.
Design/methodology/approach – A design project to comprehensively address school violence was launched at a university in eastern Pennsylvania.
Findings – This article updates the recent and most critical finding of the project by illuminating specific implications of the importance of teacher training and the development toward competence in recognition of children who are emotionally and psychologically injured through proactive measures such as screening for emotional and psychological well-being.
Research limitations/implications – Although the model has not been tested, screening to identify those in need of emotional support and training to support teachers is clear. Screening and training offer important opportunities to help learners build skills toward resilience to soften the effects of trauma.
Practical implications – A view of the “whole child” with regard to academic success could further foster social and emotional development.
Social implications – Early intervention can prevent the onset of symptoms associated with posttraumatic stress and related disorders. This effort alone may significantly reduce the uncomfortable incidences and perhaps ultimate prevention of the violence that is perpetuated among children.
Originality/value – Preliminary research supports a continued conversation regarding effective tools to find children emotionally and psychologically at-risk, which allows teachers an opportunity for timely emotional and psychological interventions.
Keywords Trauma, School violence, Trauma interventions, Trauma response models

Introduction
The statistics on school violence continue to be staggering to the point where many agree that the problem is a national and worldwide urgent priority (Bushman et al., 2016; Dumitriu, 2013). On a daily basis, strikingly high percentages of children become victims of violence, abuse, maltreatment and trauma and are represented in classrooms across the globe (Centers for Disease Control [CDC], 2013). These children, emotionally and psychologically injured, suffer from poor mental health, fear, anxiety and are at-risk for posttraumatic stress (McCoy, 2013), which adversely affects personal development, academic success, social adjustment, psychological and emotional well-being (e.g. suicidality, criminality and self-injury) (Layne et al., 2014; May and Wisco, 2016; Saltzman et al., 2001). Substantial evidence indicates that early exposure to trauma frequently manifests primarily as internalizing behavior (e.g. anxiety, fear and depression), impaired social skills, social isolation and psychological disorders, resulting in expulsions and suspensions (Delaney-Black et al., 2002; Hurt et al., 2001; NEAEP, 2019). This creates a more serious concern because internalizing disorders are most frequently associated with school shooter profiles (Langman, 2009). Because hundreds of children may witness traumatic events (e.g. school shootings, violence or abuse in the home), and are consequently at-risk to develop internalizing disorders, the importance of recognizing this suffering is imperative. Efforts to address the problem of violence have
primarily focused on creating a positive school climate, with soft interventions such as anti-bullying programs and positive behavior support programs (Sugai and Horner, 2009; Turner et al., 2015), tighter security measures (e.g. metal detectors and video monitoring systems) and more efficient crisis response protocol (Crepeau-Hobson et al., 2012); yet the dilemma persists with serious violent victimizations unchanged over recent years (CDC, 2013; Kena et al., 2015).

**Purpose**

In response to the tragedy at the Sandy Hook Elementary School, the Response to School Vulnerability Plan (RSVP) Project was created to develop a comprehensive three-phase theoretical model intended to curtail events and minimize the consequences associated with school violence, and is reported elsewhere (Leh, 2016). This article follows up on that report to highlight and discuss the important implications of teacher training as a way to identify children who may be emotionally and psychologically injured. This article begins by presenting an historical framework of models, policies and methods used to respond to school violence, which will establish a foundation for the methods of the current project model. Next, a discussion of screening is presented as a way to identify children in need of support, which was found to be an overarching critical component of the project model. This discussion is intended to provide the basis for the main focus of this article, which is a rationale of teacher training that is aligned with screening and is presented next. Finally, the project overview, methods and model are briefly described in order to offer a context to support and frame the important discussion of teacher training to identify children who may be emotionally and psychologically injured for early intervention and reflects on how past response efforts previously outlined, interfere with this effort.

**Historical response to combat school violence**

School violence is one of the major issues in the US schools today buoyed by ongoing aggressive acts such as bullying and replication fears of several high-profile school shootings such as Columbine, Sandy Hook, Parkland, Marjory Stoneman Douglas and Robb Elementary School. As a society, we have responded in various ways, with varying success. Tightening and increasing physical safety and security measures has created a fortress-type feel to our schools (e.g. metal detectors, armed teachers, active shooter drills, bullet-proof glass, armed security guards, etc.) (e.g. Diliberti et al., 2019; Marjory Stoneman Douglas High School Public Safety Commission, 2019). Interestingly, data do not conclusively indicate that such actions allay fears or reduce assaults. Rather, some evidence suggests these measures are sending the wrong message to children. For example, zero tolerance policies and life-like drills that simulate active shooter events are associated with increased fears in children, a decreased sense of safety and higher suspension rates (e.g. Huang and Cornell, 2021; Perumean-Chaney and Sutton, 2013; Schildkaut and Grogan, 2019).

Highlighting age-appropriate considerations, Schonfeld et al. (2020) assert more research is needed in crisis preparedness that considers student’s unique individual needs (Schonfeld et al., 2020).

Zero tolerance discipline, a response to infractions that may approximate a potential rule violation, which results in fully imposed punitive consequences without regard for situational circumstances (Cornell et al., 2021), is used widely and rarely associated with any benefits (Huang and Cornell, 2021). The early research on zero tolerance had suggested some benefits to reduce bullying and in-school fighting; however, the effects do not widely generalize to diverse populations, more serious issues and across grade levels (e.g. Curran, 2016, 2019). Instead, the data suggest an association with reduced feelings of safety, academic failure, increased misbehavior and increased suspension rates, with Black students at greater risk for
suspension (Curran, 2019; Huang and Cornell, 2021; Noltemeyer et al., 2015). For example, with almost all middle schools in Virginia represented in a recent study by Huang and Cornell (2021), 73.8% of the 10,990 middle school teachers believed that zero tolerance was an effective practice. This is disturbing given further results of their study also indicated greater out-of-school suspension rates and reduced feelings of safety were associated with zero tolerance practices in those same schools. The authors raise this as a critical concern “because teachers play a central role in school discipline, identifying student misbehavior . . .” (Huang and Cornell, 2021, p. 391). Because trauma can manifest as problem behaviors, this raises grave concerns about the inappropriate role of zero tolerance practices with those suffering from trauma and more importantly, teachers’ abilities to discern the nature of the behavior to respond proactively with supportive interventions.

To this point, Stratford et al. (2020) reviewed 91 publications that addressed trauma interventions in schools and issued a call for greater rigor with whole-school approaches to support students using research-based programs and “avoid programs, practices, and policies that may inadvertently traumatize students or exacerbate symptoms among students who have already experienced trauma” (Stratford et al., 2020, p. 473). Consequently, a greater focus has fallen on the teacher training and screening methods, which are critical so schools can briskly respond where needed with research proven interventions for students who suffer from the effects of trauma. Methods with proven success to identify and intervene with children who struggle emotionally include multi-tiered systems of support (MTSS) and positive behavior support (PBS), also referred to as school-wide positive behavior support (SWPBS).

**Screening and teacher preparation recognizing trauma**

A dialogue among the experts in the field has many advocating for a more holistic view of school responsibility to support children that goes beyond just academics and employs screening to identify children at-risk for emotional and psychological traumas (e.g. Gregory and Park, 2022; Stratford et al., 2020). Universal, school-wide screening has research support as an early identification strategy for children at-risk in academic areas (e.g. reading or mathematics) and behavioral areas. The SWPBS and response to intervention (RtI) offer a three-tier system (Sugai and Horner, 2009) to remediate the problems associated with children suffering from trauma. Using this MTSS framework, if identified, diagnostic testing follows with the intention of intervening to promote academic success and pro-social behavior (Eppler-Wolff and Martin, 2021; Raviv et al., 2022). The levels of support outlined in both the SWPBS and RtI framework allow children an opportunity to receive support along varying levels of intensity and in varying frequency based on individual need (Sugai and Horner, 2009). In the theory, this framework of support should allow early intervention for all children.

The SWPBS offers a strong foundational framework for schools who are intent upon improving the overall school environment, promoting a prosocial atmosphere, reducing problem behavior and increasing desired behavior (e.g. Noltemeyer et al., 2019). The SWPBS is a complex approach that is designed with prevention in mind and boasts convincing evidence of effectiveness in decreasing externalizing behavior, improving behavior and increasing academics for children with problem behavior (Horner et al., 2010). However, knowing the concerns associated with internalizing disorders, questions have been raised regarding the effectiveness of the SWPBS to address and remediate internalizing behaviors (McIntosh et al., 2014).

Burke et al. (2014, 2016) have dedicated substantial efforts investigating the efficacy of a universal behavioral screening tool that reflected the SWPBS program behavioral expectations (e.g. research-validated interventions based on the individual needs that are
driven by the data) to predict problem behaviors. Their results are interesting in that the screening items successfully predicted externalizing behaviors. Unfortunately, the tool has not demonstrated robust results in predicting internalizing behaviors (Burke et al., 2014, 2016). These findings are encouraging in terms of efforts that address externalizing behaviors and are a valuable start to perhaps what may become a comprehensive-screening protocol (Burke et al., 2014; Cornell, 2018). However, because children of trauma may suffer from internalizing disorders (e.g. anxiety, fear and depression), grave concerns still exist because screening tools for internalizing behaviors remain elusive (McIntosh et al., 2014). The concern is so great that McIntosh et al. (2014) issued a call for research to investigate a framework similar to the SWPBS that would screen for internalizing behaviors. They acknowledge the value of teaching social and emotional skills in conjunction with cognitive-behavioral therapy and social and emotional learning (two intervention methods with reported success to address internalizing problems). In addition, integrating screening and intervention within an RtI framework could provide an opportunity to intervene in several areas (Collier-Meek et al., 2013). For example, King et al. (2015) successfully used a three-tier RtI framework with 517 third grade students to identify the classes of children at-risk both academically and behaviorally. The study demonstrated support for the use of a brief-screening tool that was quick and easy in terms of implementation and reliable in predicting later academic achievement. McIntosh stresses the need to continue investigations that develop reliable tools for screening and to continue dedicated efforts to determine the reliability of additional measures (e.g. office discipline referrals) to identify learners with internalizing problems.

Teacher training
Screening procedures and referrals from teachers offer unique opportunities for early intervention to address deficits in emotional and psychological wellness and build protective factors toward resiliency and promote healing for those who suffer from the effects of trauma (Berkowitz et al., 2011; Gartland et al., 2011; Prince-Embury et al., 2015). Unfortunately, school-wide screening for behavioral problems is not a common practice, and school-wide screening for emotional and psychological issues are even less common (Bruhn et al., 2014). Bruhn et al. (2014) surveyed 13,720 school district administrators across the US sampling each of the 50 states. Of the 454 viable survey responses, “only 57 (12.6%) respondents indicated their school or district used school-wide emotional and behavioral screening (SEBS) tools, contrasted to 397 (87.4%) that reported they did not use SEBS” (p. 620). Sadly, more common responses to student emotional distress manifesting as undesirable behavior include instituting tighter security and ineffective practices such as zero tolerance, law enforcement responses and restorative discipline methods. This is enormously disturbing given the passionate pleas for action following the tragedy at Sandy Hook and multiple more recent school shootings. This unequivocally suggests that children are being neglected for services that they need and strongly points to the importance of training for pre-service teachers, novice teachers and veteran teachers to identify the characteristics of children who may be emotionally and psychologically injured due to trauma.

Unfortunately, general education teachers are rarely trained to identify the characteristics of internalizing disorders and have problems doing so, unless the child demonstrates extreme and severe anxiety (Kalberg et al., 2011; Layne et al., 2006). For example, Kalberg et al. (2011) investigated 24 teachers’ abilities to rate the problem behaviors of 73 high school students as externalizing or internalizing along several risk categories (e.g. cooperation skills and social skills). Although teachers were able to reliably differentiate between social skills of typical students and those identified with externalizing behaviors, they were not as successful in identifying certain risk categories, and found it very difficult to do so. In addition, teachers
adversely associated academics with risk and rated students at-risk as less competent regardless that all students were determined to be average in assessment scores (Kalberg et al., 2011). This suggests that teachers make academic assumptions of student ability and may expect (and possibly accept) less academic success from these learners based on their label, while ignoring the real underlying causes of academic decline. Teachers must be made aware of characteristics associated with all risk categories to avoid drawing incorrect conclusions that would prevent an immediate and appropriate response. Training would alert and inform teachers about risk and provide an opportunity to interpret and understand behavior that may otherwise be viewed as problem behavior; however, an additional complicating factor is the lack of teacher curricula to respond to student needs. For example, in a review of 32 school-based interventions, programming for kindergarten-aged children was completely lacking (Capurso et al., 2022). Screening is helpful because children could be referred to the school guidance counselor; however, the importance of teacher training is critical given that teachers must know what to look for in terms of behavioral characteristics to avoid inadvertently neglecting or misidentifying children.

In a study with 453 second through fifth grade students, Layne et al. (2006) found that teachers were able to identify the most highly anxious students in their classes, which was confirmed through student self-reports. However, similar to Kalberg et al.’s (2011) findings, the teachers experienced great difficulty in identifying certain risk categories. For example, it is very important to note that they were unsuccessful in identifying children scoring in the harm avoidance sale on the Multidimensional Anxiety Scale for Children (MASC). This is important because these behaviors (vigilance of threats to safety and avoidance of risky situations) are most frequently related to children of trauma (American Psychiatric Association, 2013) and associated with generalized anxiety disorder. Because of this, children suffering from the effects of trauma are in grave danger of being overlooked by teachers for intervention and support. As such, their emotional and psychological needs will remain unmet, putting them at-risk for multiple traumas (Jaycox et al., 2010). This is a serious issue according to Layne et al. (2014), who analyzed data of 14,088 children and adolescents associated with the National Child Traumatic Stress Network Core Data Set. They found that in neglecting to treat children of trauma between 13 and 18 years old, youth were more likely to engage in more serious high-risk behavior later in life (e.g. suicidality, criminality and self-injury) (Layne et al., 2014). It is even more disturbing to learn that “the most frequently reported adverse events among adolescents were traumatic loss/bereavement/separation and various types of intrafamilial trauma” (Layne et al., 2014, p. S44). Sadly, none of these events are on par with the devastating trauma inflicted through school shootings, which seem to be the only disastrous events that ignite discussions about the insidious nature of child victimization. In short, we need to be concerned about child trauma because the problem is more serious than the periodic discussions that arise after a school shooting. With that being said however, analyzing the dynamics of school shootings with the intent of identifying the next school shooter does not seem possible (Cornell, 2020). Rather, identifying children who suffer from the effects of trauma allows us an opportunity to create a framework of response to the overall problem and develop a plan to respond accurately, effectively and comprehensively.

For example, bullying interventions in isolation will not solve the problem of school shootings because although school shooters frequently have a history of being bullied, demonstrate poor self-regulation skills and would benefit from anti-bullying programs to develop prosocial skills, not every child who is bullied will become a school shooter. Moreover, complicating factors in predictive actions include the role of resilience in each child’s history, the lack of homogeneity of perpetrators and that school shootings are rather rare events, making identification of perpetrators and event predictability impossible (Briggs and Pollard, 2019; Cornell, 2020; Rozel, 2019).
In summary, teachers who are untrained to identify children who have been emotionally or psychologically injured due to the effects of trauma will very likely overlook students in need of treatment or respond inappropriately. In doing so, children already suffering from trauma are further endangered for compounded traumas exacerbating the deleterious effects of trauma beyond simple cognitive delays, impaired social skills, social isolation and internalizing behaviors (e.g. anxiety depression) (Mychailyszyn et al., 2010; Suomalainen et al., 2011).

Discussions that refuse to deviate from anti-bullying programs, tighter security measures and emergency response procedures are only maneuvering around the tip of the iceberg in terms of school violence. Although valuable, in isolation they are insufficient in addressing the depth and breadth of the complex dynamics of school violence. For example, to adequately respond to the issue of school shootings, one must consider how to prepare for the eventual event, how to respond during the emergent event and how to recover from the event, which, taken together, incorporates many components. Complex world problems such as these are called ill-structured problems because of the dynamic, changing and multidimensional issues associated with them (Dewey, 1938; Harwood, 2021; Jonassen, 1997). These problems pose a challenge for researchers and students in research methods courses. Many methods are reported in the literature for teaching higher education research methods courses. However, of 89 studies evaluated in a recent literature synthesis by Earley (2014), none of the studies reported what students learned about the process of doing research after taking the course. This may be related to the methodology used and the need to conceptualize the investigation as an ill-defined problem. Because school shootings consist of interrelated components functioning in relationships that continually morph as situations change, this project was conceptualized as a dynamic operating system and analyzed through an ill-defined problem structuring paradigm using a solutions-oriented lens (Ackerman, 2012; Harwood, 2019, 2023).

Harwood (2023) reported the success of using the viability planning (VIPLAN) methodology in students’ abilities to engage in complex problem situations within the context of a graduate research methods course in Business. First introduced by Espejo (1988), the VIPLAN methodology is a holistic paradigm of engaging students in complex problem-based situations through six activities using a Cybernetic Loop and a Learning Loop to link activities so the changing dynamics can be better organized and analyzed to find solutions. The project description follows:

**Response to School Vulnerability Plan (RSVP) Project overview**
A project to address the issue of school violence through the development of a three-phase model was created. During the model development, components were identified that would be instrumental in eradicating school violence as they applied to each of the phases. Therefore, the purpose was to identify various components with research support to respond to children scarred by prior victimizations, focus on the proactive methods that encouraged preparation, efficiency and early intervention toward recovery. The methods used to create the model, and the model descriptions are presented next.

**Methods**
The research process methodology for this project used the VIPLAN Methodology (Harwood, 2021). This project took place at an undergraduate institution using mixed disciplines to ensure the complexity of the issue of school violence were properly analyzed from the perspective of students in their designated field (e.g. Education, Applied Psychology [AP], Business and Information Sciences Technology [IST]). Scholarly outcomes were presented to
experts in their designated field from across the USA at a bi-monthly meeting who volunteered to serve on the Project Advisory Board. For example, the Education and AP undergraduate team results were presented to the advisory board twice each semester. The business team, who oversaw the creation and functioning of the working model organized the advisory board meetings, prepared materials and conducted the functional aspects of the meeting. The IST team managed the technological connectivity of the meetings, joining members across multiple time zones virtually. The stages of the activities as they relate to the VIPLAN methodology and this project are detailed in the procedures section.

Participant recruitment
The author created an undergraduate course to develop the Response to School Vulnerability Plan (RSVP) Project and the three-phase model. Student interest was solicited from four disciplines (Applied Psychology [AP], Education, Business, and Information Sciences and Technology [IST]) due to the cross-disciplinary nature of the project. The author announced the project opportunity in the upper-level classes in applied psychology research methods, special education, IST and business management. Students with a 3.0 grade point average in their discipline who expressed an interest within two weeks of the announcement and were at least 4th semester standing were invited to join the project team. Student teams were limited to no more than five per team to manage the overall nature of the project and that each team was small enough to support full group participation. Education students were recruited from a 400-level Special Education class, AP students were recruited from a 400-level Research Methods class and Business students were recruited from two 400-level courses: Project Management and Strategic Project Planning. To ensure multidisciplinary insight for student support, professionals from across the USA with expertise in various areas of school violence were invited to serve on a 22-member advisory board. The author invited experts from the areas of school shootings, police services, forensics, psychology (child psychology, school psychology), social work, clergy, crisis intervention, education (teachers and administrators) and special education and parenting to serve on the board. The board acted as consultants to students in developing the model and guiding the project development.

Procedures
Development of the model extended over three 16-week semesters. Students each enrolled in a one-to-three credit independent study each semester for the research project. The method for engaging in the research project employed the VIPLAN methodology as a problem structuring process to engage in a real-world problem using a problem-solving, solutions-oriented approach. In general, four disciplines were identified to participate in creating the model (Education, Applied Psychology [AP], Business and Information Sciences and Technology [IST]). Each team’s activities and responsibilities were domain specific. Activities toward project completion progressed using the VIPLAN framework activities. For example, teams first focused on creating a rich picture by researching their specific problem and the multiple ways it could be viewed (e.g. the Education and AP teams investigated school violence, the Business team investigated project development, IST investigated web page development, dissemination of research and the logistics of the Advisory Board meetings using the virtual communication systems). Next, teams focused on the questions to guide the project and stakeholders and created themes to investigate (i.e. Education and AP examined school personnel and perpetrators, the Business team researched members for the advisory board and facilitated invitations, IST examined digital connectivity, hardware and software platforms for members to connect across the USA).
These phases were revisited over and over throughout the three semesters of the project analysis to refine outcomes. Students from AP and Education conducted a search of school shootings. The search criteria included shootings between 1999 and 2014, involved more than three deaths or more than three witnesses, and took place on the school grounds. Their historical review resulted in 63 school shootings. The AP and Education teams reviewed the profiles of the school shooters (personalities and characteristics), researched the circumstances of the shootings, emergency response procedures and follow-up care (if any) for the victims. They analyzed and synthesized 82 documents (i.e. empirical studies, policy papers and government reports) associated with school safety. For example, this included programs designed to eliminate school violence (e.g. positive behavior support (Skiba et al., 2006; Sugai and Horner, 2009), three-tier response to behavior (Sugai and Horner, 2006) and efficacy of therapeutic interventions for post-traumatic stress disorder (PTSD) (e.g. cognitive behavioral therapy) after trauma. A 90-min time frame was mutually agreed upon by all students in the Education and AP teams as part of their independent study class time credit (obligations for the independent study also included presence at two bi-monthly board meetings per semester). During regular class time, the professor, who is the author, facilitated local advisory board members to present in their various areas of expertise to inform students on areas such as FBI emergency response procedures, school shooters and their profiles, school district policies on behavior and emergency response. A review of each of the readings assigned for the week was included in class time and focused on their individual conclusions and insight into presented information. Students then had team discussion times to formulate team thoughts on overall findings and to identify further questions for investigation. For example, they researched the role of social-cognitive skills (e.g. resiliency, coping skills, screening to identify children at-risk for violence and suicide and emergency response procedures), among other topics and then worked as teams to create summaries in each area. The two teams compiled their findings into weekly team reports, which included recommendations for the model (e.g. components to include in each phase) and were discussed in class meetings with all team members including Business and IST and the Business professor and author, to keep the entire team informed on the direction of the model and components determined to be critical to consider when responding to school violence. During these group meetings, the Business team presented their recommendations for the project direction with the guidance of the professor from the 400-level classes from which they were recruited. The Education and AP teams offered critiques of programs currently employed in schools with regards to preventing school violence (e.g. anti-bullying programs). They then created one summary of their work to present at the bi-monthly advisory board meeting for the intent of soliciting feedback from the board experts, who offered their recommendations regarding components for the model.

The Business and IST team functioned independently of one another. For example, the Business team designed the project framework for the development of the entire model, schematically and procedurally that included a vision over five years of research and development to pilot components determined to be most critical. This team also conducted the advisory board meetings and were responsible for printing the materials for those who attended in person, inviting those connecting from a distance by using Adobe Connect, preparing the board room with refreshments, name plates for seating and a printed color project directory of all members (including biographies and contact information of the more than 22-members) from more than 14 disciplines associated with school violence. The Information Sciences and Technology (IST) team designed a platform for the project in which to store data and were responsible for facilitating connectivity for the advisory board meetings, videotaping and storing images on the project website. The professor from the 400-level classes from which the team had been recruited attended whole group team meetings.
IST students met with instructional technology campus support personnel and a professor in the discipline as needed. During large group meetings, the professors collaborated on feedback to teams, specific to their domain, while considering the project model and team conclusions.

This process reflects the activities outlined in the VIPLAN methodology Learning Loop and Cybernetic domain (feedback loop), to further understanding by organizing, analyzing and implementing, in a circular reiterative process (Harwood, 2023). Grade criteria varied by discipline (as responsibilities were domain specific).

Results

Criteria for evaluation

Originally proposed as parallel criteria to internal validity, external validity, reliability and objectivity, Lincoln and Guba (1986) offered the following four dimensions as a lens with which to assess qualitative research: inquiry or evaluation to establish truth value or credibility (i.e. internal validity), applicability or generalizability to establish transferability (i.e. external validity), consistency or replicability to establish dependability (i.e. reliability) and neutrality to establish confirmability (i.e. objectivity). Lincoln and Guba determined that naturalistic research outside the controls of a laboratory setting, as is the case in qualitative research, can be held subject to the rigor of process and procedure. Use of the criteria has demonstrated success in complex social real-world problems (e.g. Enworo, 2022). Using these criteria in the context of qualitative research, scientific rigor or what Lincoln and Guba called "trustworthiness," we can establish grounds for the findings. Therefore, results of this study will be reported as they relate to Lincoln and Guba's criterion (Lincoln and Guba, 1986). The process and procedure according to each criterion element will be presented next.

Credibility. For this criterion, prolonged engagement was employed (i.e. 48 weeks [three semesters]) and debriefing. Debriefing served multiple functions. Regarding internal consistency, debriefings were used to rule out responses to school violence that demonstrated a lack of support in the research literature and identify methods with empirically supported success. Strategies with support were noted as undergraduates reviewed research literature, conducted interviews with administrators and participated in expert presentations. Group discussions provided all students an opportunity to review their individual findings and come to a consensus, which were confirmed through feedback from experts in the field (e.g. the advisory board members), consequently ruling out confounding variables.

Applicability. To address generalizability, efforts were made to achieve saturation in the review of relevant literature. For example, an ongoing search was conducted each semester in areas of school shootings (using criterion previously outlined) such as policies, procedures and research in each relevant component of the model (e.g. bullying, resiliency, emergency response, etc.). This was repeated each semester until new results were exhausted in the third year.

Consistency. To establish that conclusions could be replicated, teams evaluated actual school shooting events as reported through news reports and journal articles (using criterion previously reported), government reports and policy briefs (e.g. FBI), literature reviews and websites that compiled relevant information to school violence (e.g. schoolshooters.info). Team reports facilitated a thorough evaluation of each of these sources, which ensured a relevant, adequate and constant focus on the research model.

Neutrality. To eliminate bias, results and reports were triangulated across groups and the advisory board. For example, individuals reviewed sources, then met in small groups, then the large group and then finally met with the advisory board. In other words, results were evaluated multiple times through iterations of the debriefing process (e.g. small groups, large
groups and team findings ultimately shared with the advisory board). Sharing results with a larger and broader audience and ultimately with experts in the field resulted in transparency and greater ability to identify incorrect conclusions or assumptions.

After three semesters of project development (48 weeks) under this established rigor, the resulting theoretical model consisted of three interlocking phases with multiple components (see Figure 1), which is discussed in depth elsewhere (Leh, 2016). Briefly, each phase comprehensively houses multiple components with proven research support such as individualized intervention strategies with therapeutic supports to prevent the perpetuation of violence and offer evidence of integrity through data collection and analysis. The proposed components are sustained through community foundations to ensure seamless service delivery to individuals who require intervention but who frequently are unidentified. Phase I consists of school-wide screening to identify deficiencies in socioemotional skills, protective factors toward resiliency and emotional and psychological wellness in preparation for violence. Phase II consists of emergency response, Phase III consists of programming to identify and minimize posttraumatic stress after traumatic events and individualized therapeutic interventions by community professionals. Despite the evidence to support early intervention, long-term recovery, screening for emotional and psychological deficits and community involvement to support a comprehensive service program, the findings indicated that such programs were extremely limited (Berkowitz et al., 2011; Brock et al., 2006; Crepeau-Hobson et al., 2012). This suggests the value of the model, which is presented next.

Response to school vulnerability plan (RSVP) project model

Phase I reflected the need to prepare for the inevitable occurrence of violence, and is characterized by school-wide screening for social, emotional and psychological deficits,
progress monitoring, individualized interventions and most importantly teacher training to identify children who are victims of trauma. The research literature suggested the importance of building skills toward resilience and protective factors against trauma (e.g. Durlak et al., 2011; McCoy, 2013; Mohammad et al., 2014). Therefore, the model components include programming to teach coping skills, social and emotional skills and the use of assessment measures with empirical backing to gauge a student’s psychological well-being (Eppler-Wolff and Martin, 2021).

Phase III offers components toward long-term healing given the destructive nature of PTSD and contains similar components as Phase I, except that Phase III also found screening to be critical for recovery after a traumatic event. Phase II focuses on a response to mass violence using best practices according to the research literature. Phase II includes emergency response procedures and policies that employ the National Incident Management System (NIMS) and practices that are recommended in the Incident Command System (ICS). These procedures, when predictably mandated in each school district would allow consistency for first responders to limit confusion when arriving on the scene. A hierarchy of reporting was recommended that is predictable to ensure immediate and reliable responses across the country. Phase II does not hold aspects of teacher training as do Phases I and III.

In summary, the recommended components provide for (1) early intervention to minimize and prevent the effects of posttraumatic stress symptoms, (2) programs implemented in the classroom to develop social-emotional learning (SEL), coping skills, and positive behavior support (PBS) in Phase I and Phase III and (3) National Incident Management System (NIMS) practices (Brock et al., 2006) in Phase II. The most important component; however, to ultimately prevent future perpetration according to the model, is the critical nature of identifying children injured due to the effects of trauma at an early stage (i.e. screening and teacher training).

Discussion
To advance the assault against the persistent threat of school shootings, we must acknowledge that the solution lies in the promising approaches in prevention research, which includes threat assessment to avert school shootings (Cornell, 2020, 2021; Langman and Straub, 2019), MTSS, PBS, to support the prosocial development of children and a school-wide response that includes training (Cohen, 2021). Building positive relationships and instilling proactive programs with empirical support provide us an opportunity to alter the trajectory of disaster that has plagued children suffering from trauma for decades (Eppler-Wolff and Martin, 2021).

Regardless that children are frequently exposed to violence, which adversely affects them emotionally and psychologically, relatively little has been done to effectively alter the frequency or catastrophic nature of school violence (U.S. Department of Education National Center for Education Statistics, 2015). Although screening to identify children for early intervention invites a definitive direction for a realistic solution, research indicates that screening tools lack robust reports of effectiveness with internalizing behaviors; to make matters worse, the teachers are unable to identify certain categories of internalizing behaviors (Kalberg et al., 2011). This suggests the urgent need for appropriate screening tools, but most importantly, the need for teacher training to reliably identify children who are victims of trauma. Although the model has not been tested, the findings point to screening to identify those in need of emotional support and training to support teachers.

Creating experiences enabling university students to research real-world problems is valuable for undergraduate learning (Earley, 2014). In fact, complex problem-solving, creative and analytical thinking remain the most important skills in the workplace (WEF, 2023). As such, the university courses should consider working these skills into courses in
preparation to enter the workforce. Considering school shootings are a complex world problem, further research into models of response is warranted and university classrooms provide the perfect setting to unfold the dynamics of the problem in a controlled, educational forum.

The heuristic for researching the real-world problem of school shootings used here as originally set forth by Espejo (1988) and detailed by Harwood (2021), provided a foundation for a solid framework with which to investigate and creatively problem-solve the issue of response methods to ameliorate the effects of school shootings. Harwood (2023) replicated the VIPLAN methodology with undergraduates in a research methods course in the discipline of Business using a similar method over five years. Results of this project suggest the viability of the cross-disciplinary application to investigate responses to real-world problems such as school shootings. However, in order to do this, we must acknowledge all issues contributing to school violence and broaden our view of the problem. Working from a comprehensive model that plans to prepare for the inevitable nature of violence with careful programming as a way to respond efficiently during the event and facilitate healing with research-based interventions after the trauma may serve to prevent future events. This area deserves further research.

Screening and identification tools offer important opportunities for teachers to help learners build skills toward resilience to soften the effects of trauma (Berkowitz et al., 2011). Through early intervention, we have the opportunity to prevent the onset of symptoms associated with posttraumatic stress and related disorders (Mohammad et al., 2014). This effort alone will significantly reduce the uncomfortable incidences and offer insurance toward prevention of the violence that is perpetuated among the children. However, without teacher training and reliable screening tools, children remain at-risk for repeated traumatization and misidentification (Kalberg et al., 2011).

**Conclusion**

The trauma associated with violence becomes a part of the fabric of each child’s life. Neglecting to properly frame emotional responses to trauma may adversely affect the child’s future in many ways (Layne et al., 2014). By identifying children who may be suffering emotionally and psychologically with an intent to offer support and healing, we will be offering hope and healing to all, including perpetrators who share many of the characteristics as children of trauma (e.g. Booth et al., 2011; Langman, 2009). Given the importance of training to identify traumatized children, it is with great urgency that teacher preparation programs and in-service trainings immediately begin to pay greater attention to how teachers are prepared for today’s classrooms, with a focus on trauma, the effects of violence on behavior and academic achievement and methods to support children in need that are proactive and use programs that are proactive (e.g. Cornell et al., 2012; Cornell, 2018, 2021). Comprehensive protocol to resolve school threats without the severe consequences of harsh practices such as zero tolerance offer renewed hope for identifying the underpinnings of the ongoing assaults through screening and addressing potentially devastating issues with healing in mind (Kingston et al., 2018). With this mindset, we are reaching children who might otherwise be a statistic through expulsion, offering them and their families a brighter future.

Screening to identify emotionally and psychologically at-risk children for the purposes of healing offers hope that we may be able to address skill deficiencies that contribute to poor emotional and psychological health before a disaster occurs. Because schools are the only institution in a community where all children are represented, this venue is highly recommended for screening purposes. Given that teachers and administrators serve on the frontlines, they are best suited to identify children in need of support; however, the vast majority of school personnel are not trained to identify children in need of emotional and
psychological interventions (Bruhn et al., 2014). As such, an undetermined number of children may be overlooked every day in traditional classrooms and denied the opportunity for early intervention. Although schools focus primarily on academics, teachers and administrators should view the “whole child” when considering academic success. If we expect change in the prevalence of school violence, we must begin to train teachers to identify children who are victims of trauma so as to offer the necessary services to change the trajectory of behavior and improve the educational environment for all. This means that we must change how we view behavior as well as how and with whom we intervene. Promoting the success of the “whole child” to foster social and emotional development and psychological well-being must become a priority.

The information presented here can be viewed as an important discussion that intertwines screening and teacher training with the intent of providing early intervention to halt the recurrence of school violence and promote a new and fresh direction for the research community as we examine the complex nature of facilitating healing and well-being in schools. Preliminary research supports a continued conversation regarding effective tools to find children emotionally and psychologically at-risk, which allows teachers an opportunity for timely emotional and psychological intervention (Kilgus et al., 2015; King et al., 2015). If we are serious about ending school violence, we must begin on the frontlines by equipping teachers with knowledge and training to recognize all aspects of children at-risk in terms of academic achievement, emotional wellness and psychological well-being. Such knowledge can benefit the prevention of violence and efforts to curtail the avalanche of emotional and psychological injuries triggered by the lack of early intervention.

References

American Psychiatric Association (2013), Diagnostic and Statistical Manual of Mental Disorders, 5th ed., Author, Washington, DC.


Preventing trauma: early school intervention


Preventing trauma: early school intervention


**Corresponding author**
Jayne M. Leh can be contacted at: jml53@psu.edu