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The Impact of Trauma-Informed Strategies on Self-Regulation and Sense of Belonging in

Elementary Students

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Abstract

The purpose of this action research was to determine the effects of trauma-informed strategies on self-regulation and sense of belonging in elementary students. The research took place over a six-week period in an upper elementary classroom in a public Montessori school in the Mid-Atlantic. The population included 20 students ages 9-11. The intervention utilized trauma-informed strategies such as mindfulness, yoga, community building, a calm box, and solo time. Data was collected through daily observations, a daily log, pre- and post-intervention questionnaires, and student journals. The repertoire of interventions proved to be beneficial in positively affecting self-regulation among students. Some positive effects were seen on student sense of belonging, particularly in terms of teacher-student relationships, laying the groundwork for continued growth in this area. The success in establishing positive connections and building self-regulation points to the usefulness of this research as initial steps in applying trauma-informed strategies in the classroom. Continued research is needed to determine the effectiveness of further applications of trauma-informed strategies in additional domains, such as academic achievement, social-emotional learning, agency and empowerment, and restorative discipline.

Keywords: trauma-informed, self-regulation, sense of belonging, trauma theory

Self-regulation is an essential component of Montessori education. Beginning in primary at age 3 or 4, Montessori students develop regulatory skills through the use of sensorial and practical life materials, independent work choices, self-directed learning opportunities, student-centered problem solving, ownership of the classroom environment, and peer conflict resolution practices. The process of developing these self-regulatory skills is often envisioned as a steady trajectory. The basics learned in primary are assumed to lead to elementary students exerting greater self-awareness and control through more complex work choices, exploration of individual place within society, planning and execution of field trips, and navigation of increasingly nuanced social conflicts.

Childhood trauma can impact this assent of self-regulatory skills. Trauma can result from both acute experiences as well as ongoing or chronic experiences. Collective trauma can result from the misuse of power in systems of oppression, such as institutionalized practices of racism. Regulatory capacities and relationships with adults are two majorly disrupted areas of development for children who have been traumatized. Trauma-informed classroom strategies can help regulate the body's fight-flight-freeze response and reframe student-teacher interactions to be positive and supportive.

This research will be conducted in a 4th-5th grade bilingual Montessori classroom in a public charter school in an urban setting. Of the 20 students in the classroom, 80% are students of color, the majority of whom are Black or Latinx. Three years ago, the school experienced a school-wide trauma of extensive abuse. While exact numbers are unknown, this trauma has likely had a direct impact on students within the classroom. Additionally, it can be presumed that many of the students of color have experienced racial discrimination both through acts of personal prejudice and institutionalized racism within the school. Examples of institutionalized

racism noted within the school include patterns of exclusionary discipline impacting primarily boys of color and a racial opportunity gap on standardized tests impacting both Black and Latinx students. Many students in the classroom exhibit difficulties with self-regulation and struggle to develop behaviors that are more conducive to focused learning. These disruptive behaviors get in the way of their own and their peers' learning. Understanding these behaviors through the lens of trauma theory facilitates a healing approach in classroom interventions.

This research aims to heal a community of learners impacted by school-based traumatic experiences through trauma-informed strategies that build self-regulation, relationships, and a sense of belonging. Applying an anti-racist lens will simultaneously address trauma caused by institutionalized racism within the school. Teaching students to self-regulate will help in the healing process of dealing with the difficult emotions resulting from trauma and aid in the regulation of the body's distressed reaction to traumatic memories and triggers. It is hoped that with increased ability for self-regulation, a widespread sense of belonging, collective agency, and well-being will be fostered in the classroom.

Theoretical Framework

The guiding framework for this research is trauma theory, as envisioned through feminist and postcolonial perspectives. Trauma theory recharacterizes child misbehavior and mental health as symptoms of trauma (Bloom, 1995; Garo, Allen-Handy, & Lewis, 2018). This framework complicates the division of deviant behavior into "sick" or "bad," either excused from responsibility or full or responsibility and deserving of punishment (Bloom, 1995). Instead, trauma theory sees deviation as a response to injury. Injury emphasizes the interpersonal aspect of trauma, the harm arising from the "failure of the social group...to protect its young" (Bloom, 1995, p. 3). Injury recontextualizes damage as something that happened to the child, and

something the child can heal from, rather than seeing damage as an inherent part of the child's

makeup (Bloom, 1995). A trauma-informed approach to teaching employs this framework by

seeking to heal the effects of trauma through the educational setting.

However, trauma theory suffers a Eurocentric lens, which tends to view trauma as a

singular disruption in an otherwise healthy lived experience. This lens assumes trauma to be

typically absent from a person's life, neglecting to consider how systems of oppression enact

trauma on the daily lives of people of color and other marginalized groups. This view does not

account for the collective trauma of marginalized groups, nor the ongoing trauma experienced in

many intimate settings by women and children. It also depoliticizes and removes the historical

context of trauma by not recognizing the role of white supremacy in causing historical and

ongoing trauma (Pain, 2018). Chronic trauma, a concept developed by feminist psychiatrist

Judith Herman, describes PTSD affiliated with political violence, child abuse, and gender-based

violence, arising from "repeated exposure to violence, close control by the perpetrator and a

limited prospect of escape," (Pain, 2018, p. 388). These particular forms of violence are often

invisible to others and result in feelings of dehumanization, self-hatred, anger, depression, and

altered identity. Herman's conceptualization of chronic trauma is important because it reframes

trauma to include long-term violence that may be part of ongoing, everyday experience, rather

than only resulting from a singular incident causing a rupture in daily life. Her work also

recognized that chronic trauma is more likely to impact socially marginalized groups.

Postcolonial perspectives position trauma as a "collective condition affecting particular

communities" that have experienced social and political violence over a long timeframe (Pain,

2018, p. 389). This perspective recognizes the long-lasting traumatic effects of large-scale social

violence such as slavery, racism, and colonialism, as well as political violence such as segregation, occupation, and genocide.

The behavior manifestations of trauma evident in my classroom arise from multiple sources of trauma experienced by our students. These include more commonly understood definitions of trauma, including abuse, family illness, housing instability, historical trauma, and interpersonal violence. However, the various sources of trauma also require a more critical understanding of what constitutes trauma: the "continuous misuse of structural power" (Pain, 2018, p. 389) students of color face through the ongoing racial discrimination present in the school. Experiences of racialized discipline practices have the potential to be traumatic for children of color by "fostering isolation, alienation, marginalization, psychological harm, and perceptions of danger" (Sanders-Phillips, 2009, p. 176). The experience of continuously seeing predominantly members of one's own racial group removed from the classroom or otherwise disciplined reinforces notions of social inadequacy and inequality, causing psychological distress and trauma in children of color (Sanders-Phillips, 2009). Trauma theory, as explained by Pain, thus helps frame the research to consider the multiple sources of trauma present in the lives of children in my classroom. Specifically, applying a trauma-informed framework in this study is necessary to establish the researcher's understanding of the underlying reasons for student behavior. This framework creates a necessary shift in how misbehavior is understood that will allow the interventions to respond to the developmental needs of children impacted by trauma. It also establishes a reframing of racial discrimination as an ongoing form of trauma in students' lives, thereby positioning the research to consider antiracism in the design and implementation of a trauma-informed practice.

Review of Literature

Because of the widespread prevalence of trauma among children, educators must understand childhood trauma and be trained to recognize manifestations in student behavior (Bloom, Wise, Lively, Almonte, Contreras, & Ginsburg, 2014; Crosby, Howell, & Thomas, 2018; Wolpow, Johnson, Hertel, & Kincaid, 2016). Schools can play an essential role in mitigating the effects of trauma. Strong adult-child relationships, increasing cognitive skills, and the ability to self-regulate are critical adaptive systems that schools can help foster shown to help children resist trauma (Cole, Greenwald O'Brien, Gadd, Ristuccia, Wallace, Gregory, 2005).

Defining Trauma and Its Causes

Trauma is commonly defined as a significant experience that disrupts a person's sense that the world is a good and safe place (Brunzell, Stokes, & Waters, 2016). Wolpow et al. (2016) defined trauma as "the inability of an individual or community to respond in a healthy way (physically, emotionally and/or mentally) to acute or chronic stress" (p. 2). Bloom (1995) described various forms of trauma impacting children, including physical and sexual abuse, major accidents, medical emergencies, exposure to violence, and loss of a parent. Wolpow et al. (2016) additionally described neglect, war, homelessness, and family member drug and alcohol abuse, incarceration, and mental health issues as potentially traumatic childhood experiences. Both Bloom (1995) and Wolpow et al. (2016) noted an additional form of trauma, "sanctuary trauma," which originates from an inadequate or hostile response to a traumatized person's attempt at seeking sanctuary or help. The term "complex trauma" describes the experience of multiple or ongoing sources of trauma (Pain, 2019; Wolpow et al., 2016).

Because racial discrimination and historical trauma are forms of trauma, the approach to a trauma-informed classroom must also be anti-racist. Bloom has characterized trauma as "one of the central organizing experiences in the individual, in the family, and in larger social groups"

(p. 2, 1995). Speaking to the self-perpetuating nature of trauma on social systems, Cariaga referred to trauma as a "byproduct that keeps systems of oppression intact" (2018, p. 25). Sanders-Phillips defined racial discrimination as a "form of violence that can significantly impact child outcomes" (2009, p. 174). She described the historical and present use of violence, legal means, and social norms by white people and institutions to assert racial superiority and power over communities of color. The legacy of slavery and segregation (and re-segregation) has contributed to unequal social and educational opportunities, wealth distribution, and social mobility, as well as exposure to violence for communities of color (Garo et al., 2018). These spatial inequalities place residents of color in segregated sections at higher risk for trauma. An analysis of suspension rates aggregated by race by Garo et al. showed a relationship between discipline disproportionality and a heightened risk for trauma for Black male students, pointing to the need for trauma-informed practices in place of exclusionary discipline (2018).

This institutionalized racism has both structural and personalized effects on physical and mental health and developmental outcomes for children of color. Children of color are often exposed to racial discrimination on both a micro- (interpersonal prejudice, harassment, aggression, etc.) and macro-level (media stereotypes, school discipline policies, social policies, educational resources, etc.). From this multilayered exposure, children of color receive reinforcement of a negative image of their racial identity group. These factors, coupled with experiences of inequality in opportunity, and potential exposure to additional forms of trauma, can contribute to chronic trauma for children of color (Sanders-Phillips, 2009). If not actively addressed, these same forms of racial discrimination are often replicated in the school system, reinforcing the traumatizing experience for children of color.

Trauma-informed practices approach teaching, learning, healing, classroom management, relationship building, and discipline with a trauma-informed lens. Trauma-informed practices are a social justice imperative because they address the root causes of inequities in society and schools, critically recognize systemic inequalities, challenge dominant, biased views of students, and deconstruct oppressive systems within the school (Crosby et al., 2018). For these practices to be truly liberating and healing for all children, antiracism must also be at the core of the approach.

Effects of Childhood Trauma on Learning

Brain development, social-emotional development, and behavioral manifestations. Trauma can affect neurological and psychological functions, impacting the regulatory capacities of children when faced with healthy stressors (Brunzell et al., 2016). Dysregulation occurs because of a chronic stimulus of the fight-flight-freeze response in traumatized children, leading to changes in the brain's architecture and maladaptive activity (Bloom et al., 2014). Executive functioning is also impacted by trauma. Trauma can manifest as social-emotional deficits, behavioral problems, impulsivity, lack of self-control, and interpersonal deficits (Crosby et al., 2018). Low self-efficacy and feelings of hopelessness can arise from the experience of inequality in opportunity that comes from racial discrimination (Sanders-Phillips, 2009). Traumatized students may also experience dissociation, where the integration of experiences in the brain is compromised (Bloom et al., 2014).

School-related behavior and discipline. Children's responses to triggers of their trauma may result in inappropriate classroom behavior (Cole et al., 2005). Perceived threats can trigger the fight-flight-freeze response, interfering with students' ability to process, organize, and remember new information. It can also disrupt their ability to use reason and language to

communicate. A pattern of this response can cause students to appear disengaged, aggressive, or

oversensitive (Wolpow et al., 2016). Teachers and administrators may misinterpret traumatized

behaviors as defiance or apathy, and apply harsh consequences, which further alienates children

from school (Crosby et al., 2018). Discipline focused on managing behavior rather than

restoring harm tends to be punitive, escalates conflict, and denies the opportunity of children for

reconciliation (Crosby et al., 2018). Traditional disciplinary methods disproportionately affect

students already at risk of trauma (Wolpow et al., 2016) and in particular, students of color

(Crosby et al., 2018), further exacerbating the problem.

   Academic difficulties. Traumatized children may have difficulty in school because their

hyperaroused state can make learning, processing, and recalling information more challenging

(Cole et al., 2005). Trauma-affected students are more likely to have academic difficulties,

including special education referrals, poor concentration, focus, and work habits, and low

achievement on tests (Garo et al., 2018; Wolpow et al., 2016). Chronic stress from trauma and

recurring exposure can cause children to be in a constant state of fear, affecting concentration,

learning, and behavior. Hyperarousal causes children to view everyday actions as threatening and

disrupts their focus from learning (Bloom et al., 2014; Garo et al., 2018).

Trauma-informed Classroom Interventions

   Establishing safety and connection. There is consensus in the literature that establishing

a feeling of safety and connection within the classroom is paramount to healing the disrupted

development of trauma-affected children (Bloom, 1995; Brunzell et al., 2016; Cole et al., 2005;

Crosby et al., 2018; Wolpow et al., 2016). Organization, predictability, consistency, and routine

can all contribute to feelings of safety for children (Brunzell et al., 2016; Wolpow et al., 2016).

A large component of creating a safe learning environment is developing positive student-teacher

connections (Bloom 1995; Brunzell et al., 2016; Crosby et al., 2018). Being able to depend on and trust caring adults will increase opportunities for learning and self-regulating in the classroom.

Trauma can cause children to be mis-attuned, unattuned, or overly-attuned to reading nonverbal cues from others. Teachers can support students by becoming attuned to their needs and responding to underlying emotions of behaviors. Teachers can also teach students how to attune themselves to interpret the cues of others accurately. Building a positive student-teacher relationship can facilitate the development of these skills. As teachers get to know students, they can make themselves available for students to express their emotions, and help students learn to articulate their underlying emotions when misbehavior occurs (Wolpow et al., 2016).

Self-regulation and social-emotional development. A second important approach to healing from trauma is to repair the body's ability to regulate its response to stress and arousal. Self-regulation can be fostered in the classroom environment through both "bottom-up" strategies (regulating the emotions and mind by regulating body rhythms) and "top-down" approaches (teaching children cognitive strategies for regulating the mind, body, and emotions) (Brunzell et al., 2016). Bottom-up self-regulation strategies include yoga, martial arts, theater, creating a safe space in the classroom, and engaging children with goal-directed tasks involving movement (Cole et al., 2005). Cognitive approaches to self-regulation include mindfulness and teaching children to recognize and name feelings and physical states. Mindfulness is a practice that cultivates paying attention to thoughts, feelings, sensations, and the environment. Mindfulness has been shown to increase self-regulation by regulating emotional reactivity and reducing stress when faced with healthy stressors. It has also been linked to improved social

skills and performance on tasks that require sustained concentration ("Research on Mindfulness,"

n.d.).

Teachers can support the development of social-emotional skills in the classroom by first

learning to recognize their own feelings, underlying thoughts, and associated behaviors, then

attuning themselves to notice the connected feelings, thoughts, and behaviors of their students.

Teachers can then share these skills with students by asking questions connected to feelings,

thoughts, and actions about characters in books, or narrating their own feelings in personal

stories shared with the class. Once vocabulary and feeling recognition are developed, affect

modulation (modulating one's emotional state) can be used to calm down or re-energize when

emotions are dysregulated (Wolpow et al., 2016). Brunzell et al. (2016) analyzed several

thematic approaches employed by teachers in a trauma-informed school: rhythm (using body

rhythms to regulate), mindfulness, self-regulation (here referring to direct teaching about the

stress response and coping strategies), and de-escalation (strategies for regulating in elevated

situations). In addition to building regulatory capacities, Brunzell et al. found that using rhythm

in the classroom contributed to improved student-teacher relationships through instances of the

teachers leading the students in co-regulatory exercises, and increased stamina and sustained

concentration (2016).

Student agency and empowerment. Integrating opportunities for student agency and

empowerment into the classroom structure and curriculum is a third domain noted to help

students heal and build resiliency from trauma (Bloom, 1995; Cole et al., 2005; Crosby et al.,

2018; Garo et al., 2018; Wolpow et al., 2016). Brunzell et al. proposed that healing regulatory

capabilities and healing disrupted attachment capabilities is enhanced when combined with

encouraging the growth of existing strengths (Brunzell et al., 2016). Empowerment also comes

through helping children understand their own trauma and triggers (Bloom, 1995; Wolpow et al. 2016). Cole et al. recommended providing opportunities for children to develop agency and control in the classroom to overcome feelings of powerlessness from trauma (Cole et al., 2005). Youth empowerment programs may be effective in building resiliency for children of color by promoting self-efficacy and empowering children to address social issues affecting their lives (Sanders-Phillips, 2009). High academic standards help give the message that children are capable and worthwhile (Cole et al., 2005). Higher-order thinking and making meaning of new learning helps recovery from trauma's impact in the brain by establishing new neuro-connections (Crosby et al., 2018).

Teachers needs and characteristics. The goal of a school embarking on trauma-informed teaching must include the health and wellbeing of all members, including its teachers (Bloom, 1995). Healing traumatized children requires the adults to heal the trauma and negative habits in their own lives, re-learn how to interact with each other, and make the school environment less fragmented (Bloom, 1995). Ongoing critical self-reflection of the adult is a necessary step to ensure the overcoming of biases and assumptions (Bloom, 1995; Garo et al., 2018). Patience, empathy, commitment to learning about individual students, unconditional acceptance, are key characteristics of the teacher in trauma-informed teaching (Brunzell et al., 2016; Wolpow et al., 2016). Teachers must seek to understand the emotions behind student behavior so that they can respond to the emotional need rather than the behavior (Cole et al., 2005; Wolpow et al., 2016).

To support the growth of the teacher, ongoing professional development on trauma is needed (Crosby et al., 2018; Garo et al., 2018). A schoolwide, multidisciplinary team approach to healing, with a shared vision and goals, will create a sustainable culture of support (Bloom,

1995; Crosby et al., 2018; Garo, 2018). Because working with traumatized children can have an emotional toll, compassion fatigue therapy and a culture of support for the adults is also necessary (Crosby et al., 2018; Garo et al., 2018).

        Restorative and healing discipline practices. Responses, including punishments, should always avoid re-traumatization; often, children who behave "badly" are reenacting their adaptive, learned response to trauma in which behaving badly was their only way to reclaim any sense of control. If our responses to their behavior do not feel safe, they will behave with their learned response to danger. The key to healing this bad behavior pattern is to not engage in reenacting the pattern of abuse through harsh discipline, hostility, and pain. If the adult responds consistently with firm but reasonable limits, clear expectations, understanding, compassion, and respect, the child will see that safety holds, and begin to trust the response (Bloom, 1995). Discipline should operate with an understanding of the reason for a child's misbehavior and should respond to the relational and academic needs of the child. They may need to learn that rules can be enforced in a way that is predictable and keeps them safe (Cole et al., 2005). Healing justice, a comprehensive form of Restorative Justice, can be used in lieu of harsh discipline practices (Garo et al., 2018). This framework, borrowed from environmental justice, indicates the restoring of individual and collective wellbeing through the creation of a safe and healthy environment, in this case, that of the school structure and culture. Aspects of this framework recommended by Garo et al. include many strategies already mentioned: a core value of dignity and respect in all student-teacher interactions, critical anti-racist self-reflection of the adults on their assumptions and complicity in both harm and healing, a social justice curriculum, professional development and therapeutic support for adults, and a multidisciplinary team approach (2018).

Conclusions

The interventions implemented throughout this action research were envisioned as the first steps of a longer shift to a trauma-informed classroom and school. Within the scope of this 5-week research, building regulatory capacities and positive connections with adults were the most immediate needs to create a calm, healing environment for my students. The literature supports the idea that regulating the arousal response is necessary to support the brain's readiness to learn. Developing positive student-teacher relationships characterized by compassion, mutual respect, and trust repairs injury caused by previous interpersonal trauma and contributes to a feeling of safety in the classroom. Laying the groundwork for these positive relationships to develop took place within the span of this research.

The interventions used in this study included mindfulness, yoga and movement breaks, community building activities, and structured solo time. This intervention schedule provided routinized opportunities for students to regulate their body rhythms through mindfulness, yoga, and movement. Based on Brunzell et al.'s findings, by emphasizing the bottom-up approach of rhythm, students were able to build their regulatory skills while also benefiting from the bonding that comes from doing these activities side-by-side with teachers and the whole class community. Community building activities were integrated to foster connections among classmates, as well as give agency to students. Structured solo time provided an opportunity to engage in self-chosen activities that are self-soothing. By leading these interventions as both the research and teacher, I was able to foster connectivity between each child and myself.

Methodology

The approach used for this study was an experimental design applying trauma-informed strategies such as mindfulness, yoga, and community building activities to determine if they have

an effect on student self-regulation and sense of belonging. These variables were measured by

the researcher using daily intervention logs (see Appendix E) and daily observation behavior

tally and log (see Appendix D). Additionally, qualitative data were collected from students'

weekly prompted journal responses (see Appendix F). Pre- and post-intervention assessments

were completed by both students and the teacher to gain quantitative data of both student self-

perception and teacher perception of student self-regulation behaviors and sense of belonging

(see Appendices A and B).

The population for this action research study was upper elementary students in a public

Montessori school in the Mid-Atlantic of the United States. The research was conducted in one

4th-5th grade classroom in the 2019-20 school year. The study included 20 students (11 females

and 9 males), of which 16 were children of color, and 4 were white.

The student pre- and post-intervention questionnaire (see Appendix A) was administered

to collect data on students' perception of their self-regulation skills and sense of belonging in the

classroom. Students were instructed to mark the questionnaire with their first and last initials to

maintain confidentiality. The questionnaire contained a rating scale on behaviors and attitudes.

The researcher explained the importance of honesty and assured students that there were no

consequences or rewards for any particular responses. The questionnaire was completed by

students prior to the start of the intervention and at the conclusion. I also completed a related pre-

and post-intervention questionnaire (see Appendix B) to collect the teacher's perception on self-

regulation skills and sense of belonging for each student prior to and at the conclusion of the

intervention period.

The researcher presented trauma-informed strategies to the students on a nearly daily

basis over a six-week time period. The strategies presented followed an intervention schedule

designed by the researcher (see Appendix C): a new mindfulness lesson was presented each

Monday to the entire class; yoga lessons were offered every Tuesday and Thursday morning; and

community building activities were presented in the afternoons twice a week (see Appendix G).

The mindfulness lessons were sourced from the Mindful Schools curriculum. Yoga lessons were

constructed utilizing a children's yoga deck (a collection of cards showing a child in a yoga pose

on the front, with detailed steps for completing the pose on the back) and the researcher's

background knowledge of yoga. Community building activities were designed to build both

student identity formation as well as community collaboration and connectedness. Morning

interventions (mindfulness and yoga) were presented at 8:30 am. Community building activities

were presented around 3:00 pm.

　　　The researcher collected observational data of the class from about 9:30-10:00 am using a

daily observation behavior tally and log (see Appendix D) to collect quantitative and qualitative

data on observed self-regulation behaviors. The tally listed behaviors grouped as either

exhibiting self-regulatory (focused work, purposeful movement, verbal, and redirecting others)

or disruptive behaviors (distracted, movement, physical, verbal, and playing), allowing the

researcher to gather quantitative data of frequency of each behavior type. The log portion of the

data tool allowed for descriptive data concerning observed behaviors. The collection of this data

was occasionally interrupted by students who needed immediate attention for classroom needs

such as answering an academic question or intervening in a conflict. A few days of observation

throughout the intervention period were missed due to the researcher's teaching duties and

absences of the researcher's co-teacher which made observations without interruption difficult

for the researcher on those days. Additional data were collected daily using an intervention log

(see Appendix E) to obtain a mix of qualitative and quantitative data describing the day's

interventions and students' responses. Students were also given weekly journal prompts (see

Appendix F) to collect qualitative data detailing students' responses to and perceptions of the

interventions, their ability to self-regulate, and their sense of belonging. Additional journal

prompts were added during weeks three, four, and five (see italicized questions in Appendix F).

These questions were added to seek input on the classroom activity related to the interventions

observed in those weeks.

To analyze the data collected through the daily behavior observation tally and log, a

graph was created to compare the rates of each specific behavior over the course of the

intervention period to determine whether the intervention was effective in fostering self-

regulatory behaviors. A second graph collated the behaviors by category (disruptive or

regulatory) to compare overall trends within each category throughout the intervention period.

The log component of this tool provided a possible explanation for the variation in the tallies

over time. The narrative component of the daily intervention log was coded to rate different

response behaviors for each specific intervention throughout the research period. The weekly

prompted journal responses were coded with the themes of self-regulatory skills and sense of

belonging to determine students' attitudes and perceptions of their progress, challenges, and

responses to the interventions. The pre- and post-intervention questionnaires of each student

were compared to assess whether the intervention was effective for individual students in

developing self-regulation skills and sense of belonging. This data was also analyzed to compare

overall trends among specific regulatory skills and sense of belonging features included in the

questionnaire for both pre- and post-intervention.

Analysis of Data

Baseline data was collected in the week prior to the start of the intervention period. Baseline data on perceived ability to self-regulate and sense of belonging was collected for each individual child through a student self-regulation questionnaire (see Appendix A) and related teacher questionnaire (see Appendix B). Daily observations were made to record the frequency of behaviors categorized as either disruptive or regulated and overall level of disruption and regulation during the observation (see Appendix D). A line for notes allowed the researcher to log additional details of the context and nature of behaviors tallied. The observations took place around 9:30-10:00 am for 20 minutes for three of the four mornings that week. Monday was missed due to Labor Day, and Wednesdays were not included in any week's observational data due to specials classes being held on those days.

To analyze the tallied observational data, each type of behavior was totaled within each category, and behaviors from each category (disruptive and regulated) were then totaled daily. Types of disruptive behaviors measured included: distracted, movement, physical disruption, verbal disruption, and playing. Types of regulated behaviors recorded included: focused work, purposeful movement, verbal, and redirecting others.

The student self-regulation questionnaire data were analyzed by thematically grouping the questions into categories, then averaging the responses for each question in each category. Categories for the questions include: participating in classroom activities, noticing behaviors and emotions, self-regulation skills, and sense of belonging. Data from the pre-intervention student surveys were then compared to the data from the post-intervention student surveys for each individual student. Comparisons between both pre- and post-intervention data were also made for averages among all students in each category. Data from the teacher pre- and post-intervention questionnaires were analyzed in the same way.

The data from the daily intervention logs (Appendix E) collected throughout the intervention period were analyzed by first sorting each log by intervention type: mindfulness, yoga, and community-building activity. The rating scale of 1-10 (delivery, student engagement, and overall success) for each log was analyzed quantitatively. An additional data item was included in the yoga intervention to show the number of student participants during each instance. The narrative portion of the logs (description of student engagement and responsiveness) was coded for any keywords or phrases that demonstrated a positive or negative change in student self-regulation or sense of belonging, or a positive or negative response to the intervention. Positive changes in student self-regulation were coded as "self-regulation skills," and positive changes in sense of belonging were coded as "sense of belonging." The weekly prompted student journals were analyzed to note any positive changes in student self-regulation and sense of belonging. Positive changes were coded with the categories of "self-regulation skills" or "sense of belonging." Student journals were also coded to note any keywords or phrases that indicated causes of distraction and dysregulation, preferred and disliked strategies and positive and negative responses to interventions.

Findings

The purpose of this study was to determine the effects of trauma-informed strategies on students' ability for self-regulation and sense of belonging in the classroom. Dysregulated and disruptive student behavior indicated the need for an intervention to build self-regulation. Past experiences of trauma presented the need for the intervention to consider the disrupted relationships and need for a feeling of safety and belonging within the classroom environment. The research design was qualitative and utilized observation, logs, student journal responses, and

questionnaires to gather information on students' ability to self-regulate and their sense of belonging.

The subjects for this study were 4th and 5th-grade students in an upper elementary classroom in a public Montessori school in the Mid-Atlantic. Twenty students comprised the study, 11 were female and 9 were male. The bilingual model of the classroom was led by two teachers, one leading the subjects taught in each language.

The question posed in this research contained two parts. The first part asked what the effect of trauma-informed interventions would be on the self-regulation of students. The second part asked what the effect of the interventions would be on their sense of belonging. A pre- and post-intervention questionnaire were given to each student. Students were asked to rate themselves on a list of statements related to classroom participation, noticing emotions and behavior, self-regulation skills, and sense of belonging using a numerical scale. The scale used the values 1 = never, 2 = kind of, 3 = sometimes, 4 = most of the time, and 5= all the time. For example, one statement read, "I find it easy to listen, learn and participate." Another statement read, "I feel sad at school and it gets in the way of my learning." A pre- and post-intervention questionnaire was completed by the researcher to collect the teacher's perspective on each student's self-regulation skills and sense of belonging. Additional data were collected using an observation tally and log, which recorded both disruptive and regulated behaviors observed daily throughout the week prior to the start of the intervention.
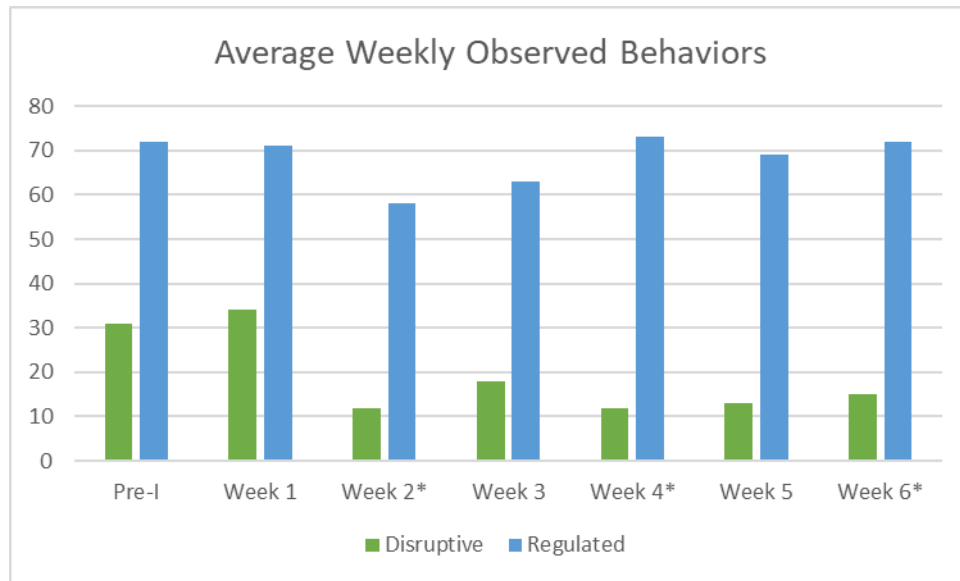
Observational Data

Observational data is displayed in Table 1, showing total instances of disruptive and regulated behaviors recorded each day of the week prior to the implementation of the intervention.

Table 1
Disruptive and Regulated Behaviors Observed (Pre-Intervention)

Day of Study	Disruptive Behaviors	Regulated Behaviors
Day 1	21	81
Day 2	23	78
Day3	49	58
Average daily behaviors:	31	72

Observational data for the subsequent five weeks is displayed in a graph that shows the average number of totaled behaviors observed each week.


Figure 1: Average weekly observed behaviors. Daily behaviors within the categories of disruptive and regulated averaged to show weekly averages. *Only two observational days.

Average regulated behaviors (focused work, purposeful movement, verbal, and redirecting others) hovered between an average of 60-70 daily observed behaviors each week. The lowest recorded week was week two, however only two days of observation were completed that week. Week three shows the next lowest average of regulated behaviors. According to the log notes during this week, ten of the twenty students were unfocused at the beginning of the week and spent their time wandering or socializing. On that Wednesday (September 26) assigned seats were introduced to limit wandering and socializing. Self-regulation tools of yoga and the calm-

box were also re-introduced that day, resulting in more regulated behaviors the remainder of the

week (see Figure 2 below).

Disruptive behaviors decreased after the first week of the intervention and stayed

consistently low (between 12 and 18 average observed behaviors) throughout the rest of the

intervention period. A display of totaled daily behaviors can be seen in the figure below.
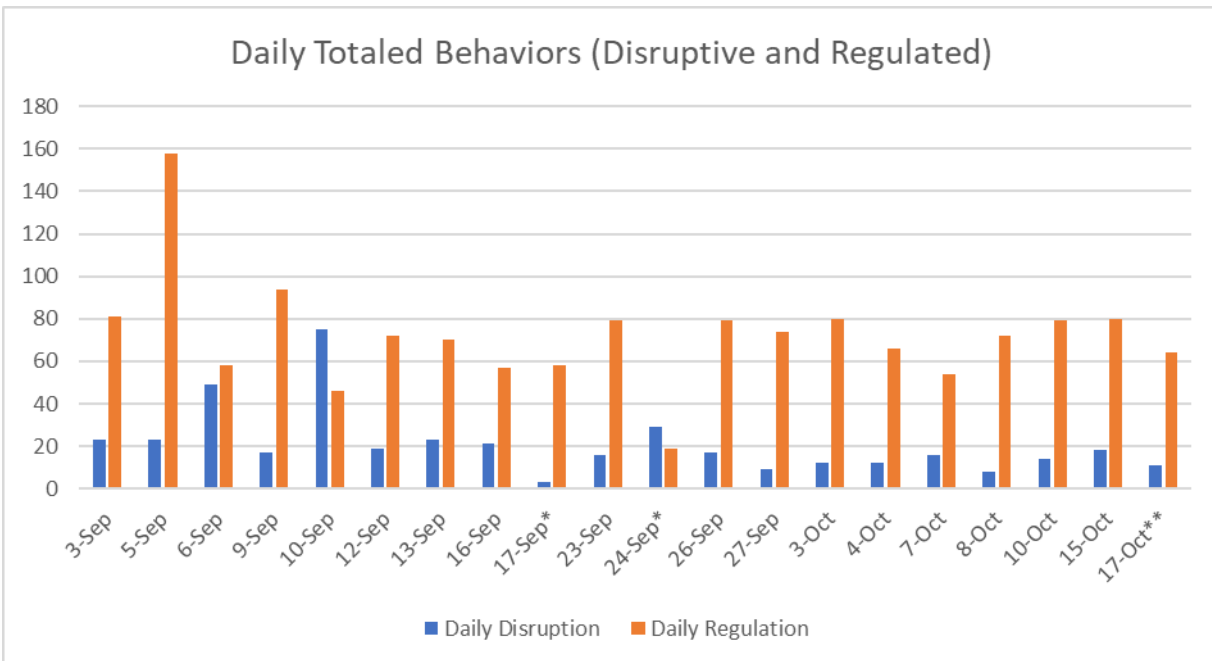
Figure 2: Daily totaled observed behaviors. Daily behaviors within the categories of disruptive
and regulated totaled. *10-minute observations. **15-minute observations.

Prior to the intervention (September 3-6) and during the first week of the intervention

(September 9-13), the regulated behaviors varied widely throughout the week (by 100 behaviors

pre-intervention, and by 48 in week one). Likewise, in week three (September 23-27), the

observations show a wide variation in recorded regulated behaviors (a span of 60). During

weeks four, five, and six, however, the regulated behaviors more consistently ranged within a

span of 20 observed regulated behaviors per day. The evening out of the consistency of

regulated behaviors indicates the intervention positively impacted students' self-regulation

toward the end of the intervention period.

        Figure 3 below shows the specific types of disruptive behaviors that were observed each
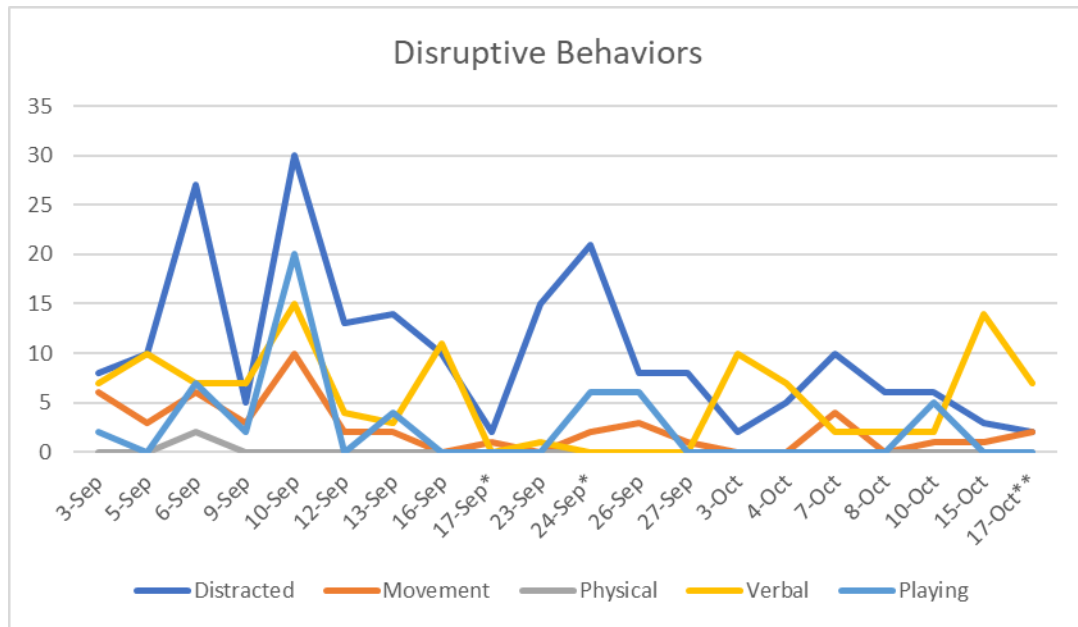
day.

Figure 3: Disruptive behaviors. Daily behaviors observed broken down by type of disruptive
behavior. *10-minute observations. **15-minute observations.

The most prevalent type of disruptive behavior throughout the observation period was distracted

behavior. Often this appeared as students being distracted by watching their peers or distracting

themselves with classroom materials. The next most prominent type was verbal disruption,

which appeared most often as students over-socializing. The behavior was considered disruptive

if the socializing led to students neglecting their work for more than a minute.

Pre- and Post-Intervention Questionnaires

        The averaged responses from the pre- and post-intervention questionnaires are shown in

the figures below, grouped by the themes of participating in classroom activities, noticing

behaviors and emotions, self-regulation skills, and sense of belonging. The rating scale used the

values 1 = never, 2 = kind of, 3 = sometimes, 4 = most of the time, and 5= all the time.
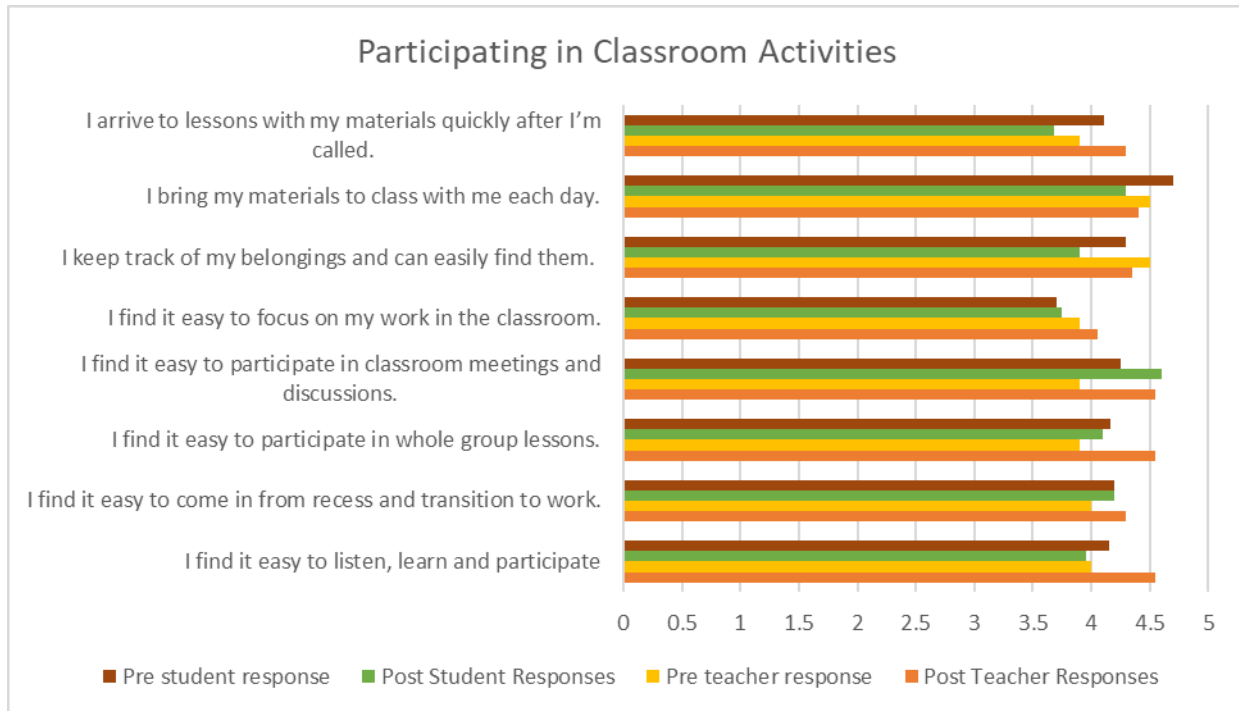
Figure 4: Participating in Classroom Activities. Pre- and post-intervention responses averaged
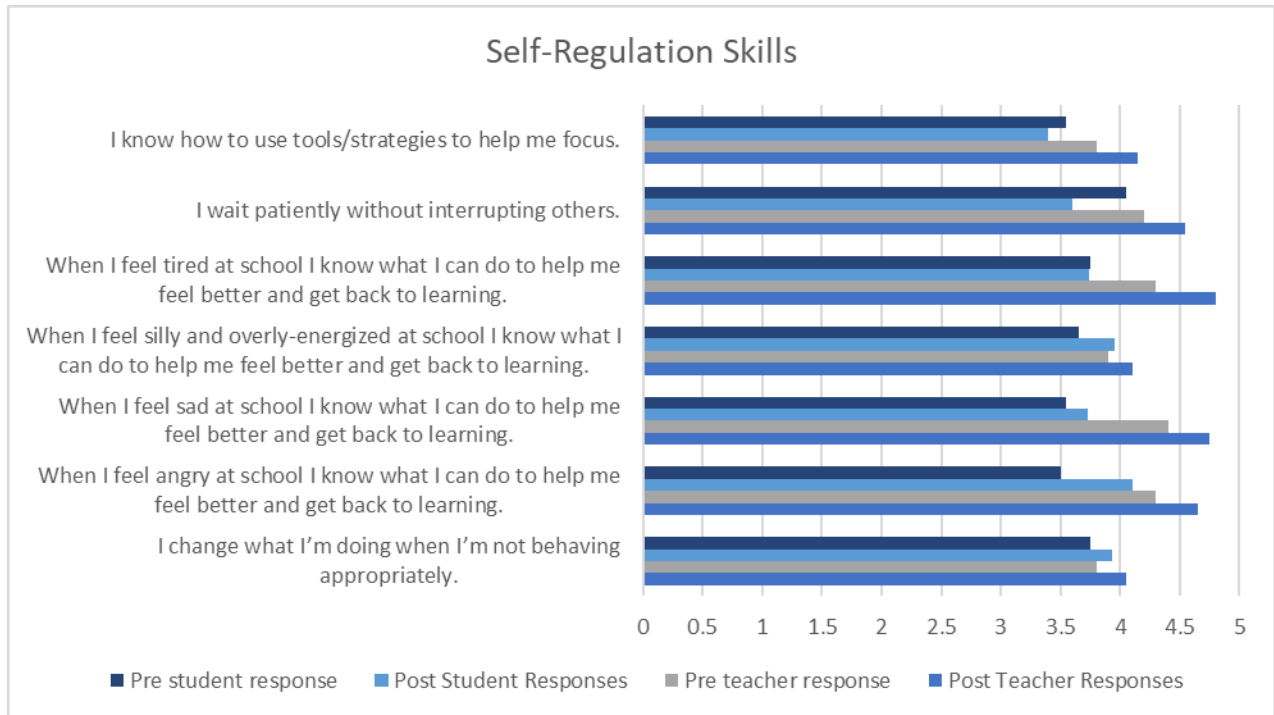from both student and teacher questionnaires.

The first three statements in this domain refer to student organizational skills. The student

questionnaire shows a decrease in these skills, while the teacher questionnaire shows an

improvement. The discrepancy could be due to the students becoming more aware of their

shortcomings, arriving at a more accurate assessment in the post questionnaire. It could also be

due to the fact that teachers do not always perceive the management of personal belongings of

every child, resulting in a less accurate depiction of each child's habits. The rest of the

statements show an over-estimation of student ability on the part of the teacher. The one

statement that shows a perception of growth from both the students and teacher is, "I find it easy

to participate in classroom meetings and discussions." The two perspectives may be more

aligned here because participation in a classroom discussion is visible to both students and the

teacher. The growth may be indicative of an increased sense of belonging among students. The

lowest overall area in this domain was the student's ability to focus on their work in the

classroom. Possible contributing factors to this distraction may be seen in Figure 5 below.
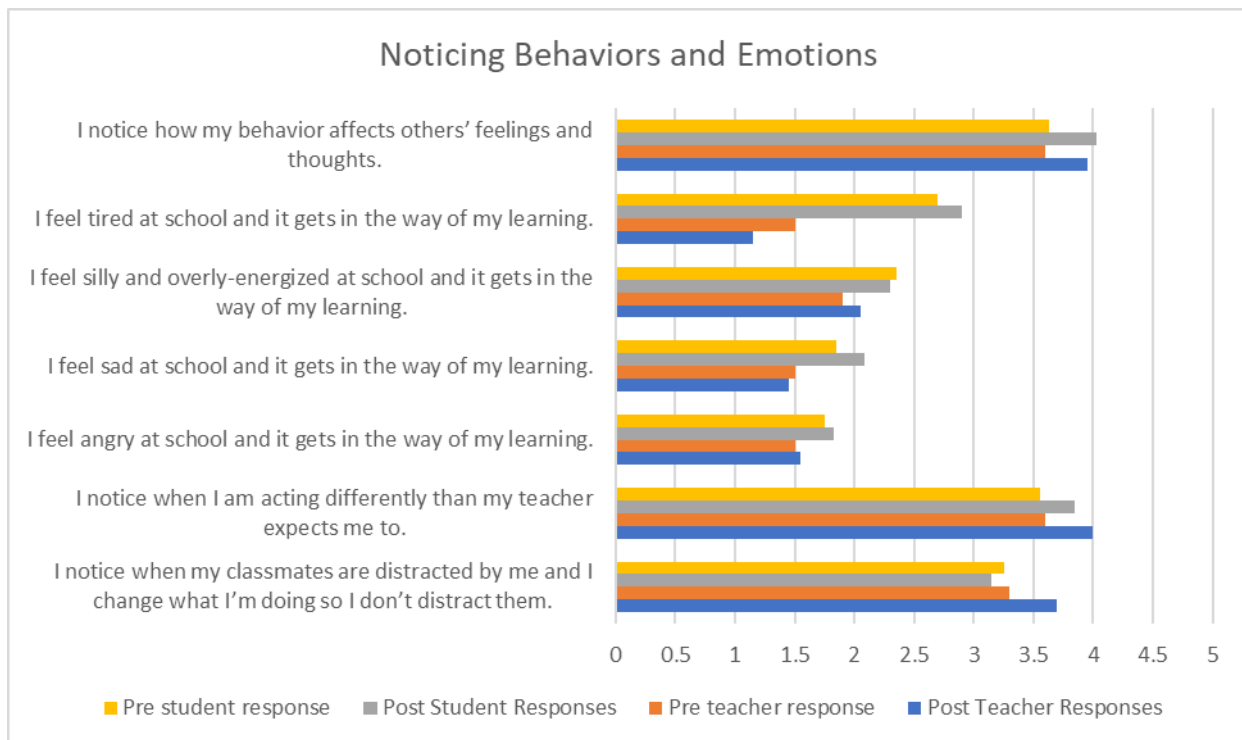
Figure 5: Noticing Behaviors and Emotions. Pre- and post-intervention responses averaged
from both student and teacher questionnaires.

Again, in this domain, the teacher has under-estimated the difficulties students experience

in maintaining focus on their work in the classroom, particularly in the case of feeling tired or

sad. Students generally rated themselves as less able to notice when their behaviors were not

meeting teacher expectations or were distracting their classmates than the teacher did. However,

student and teacher perspectives show an overall increase in student ability to notice how

behaviors affect others' thoughts and feelings or were not meeting teacher expectations.

Figure 6: Self-Regulation Skills. Pre- and post-intervention responses averaged from both student and teacher questionnaires.

The domain of self-regulation skills, seen in Figure 6 above, also shows the teacher over-estimating students' abilities in all areas except the statement that "I change what I'm doing when I'm not behaving appropriately." This is likely the easiest observable self-regulation skill since the others refer to a student's ability to change internal feelings rather than behavior. Except for feeling tired, students indicated growth in their ability to self-regulate when faced with disruptive feelings such as silliness, sadness, or anger.
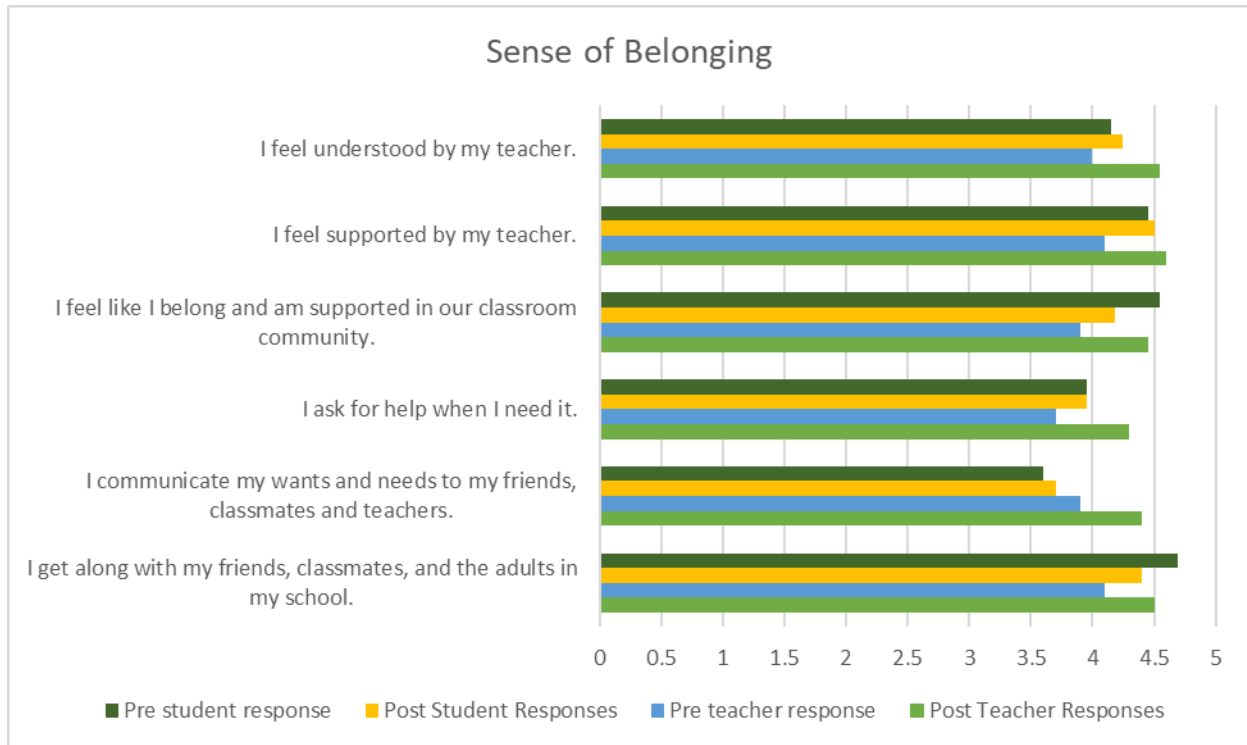
Figure 7: Sense of Belonging. Pre- and post-intervention responses averaged from both student and teacher questionnaires.

This domain indicates limited growth in students sense of belonging from the student perspective. Feeling understood and supported by the teacher and being able to communicate wants and needs showed slight increases, while the other areas stayed the same or decreased. Except for asking for help and communicating wants and needs, however, the overall ratings of both the pre- and post- questionnaire are relatively high, with a rating of 4 (most of the time) or higher. This indicates that students sense of belonging in the classroom is generally well developed, except in the area of asking for help, wants, or needs. Getting along with and feeling supported by classmates may be an area in which students need continued support.
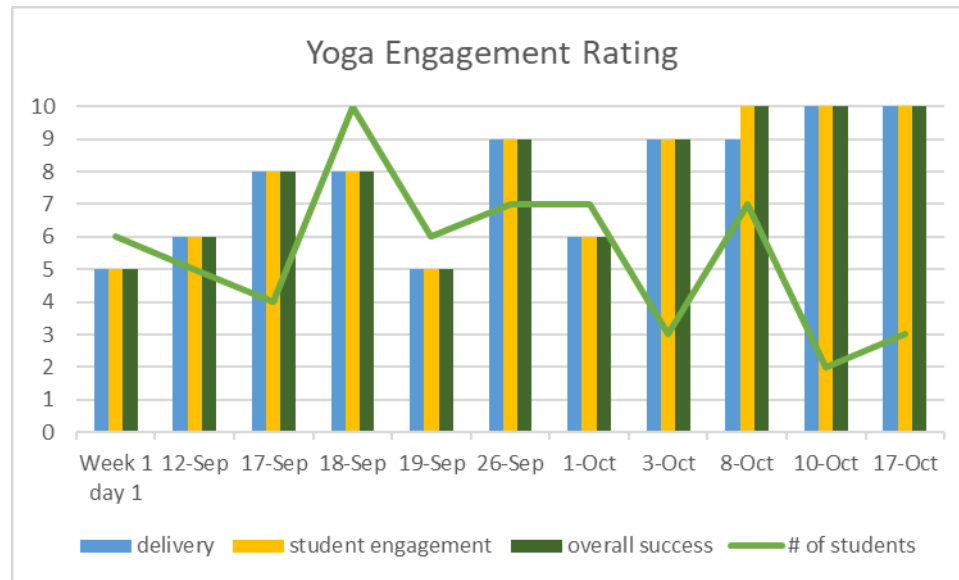
Daily Intervention Logs

Mindfulness. The rating scale portion of the log (delivery, student engagement, overall success) was analyzed for variance over time but provided very little information since the rating

changed very little. The log portion revealed students gained and enhanced self-regulation skills

throughout the practice. After being introduced to the idea of mindful bodies (still and quiet) and

mindful listening, the log notes recorded for week one show that students "held still/quiet for 25

seconds the first two tries, then held [still] 1 minute." Week two's notes state that the one-minute

mindfulness breathing activity "seemed to go really quickly because we were all quiet and

focused." Building on this skill, week three notes that after reviewing mindfulness anchor tools,

such as breath and sound, then learning to send kind thoughts to self and others, students

"seemed to engage in overall practice pretty easily."

     The log from an impromptu mindfulness lesson in week four shows the usefulness of

mindfulness as a tool for self-regulating when faced with escalated emotions and conflict.

During clean up that day, students had been chasing each other around, and several arguments

had broken out, with insults and conflicts escalating throughout the room. In response to this

disruptive cleanup time, I changed the plan from leading a community game to mindfulness

instead. The log notes that as mindful breathing was implemented, "kids got quiet and still."

This same implementation, however, shows the limitations of mindfulness in building a sense of

belonging. To address the widespread conflict in the classroom, after first calming down with

mindful breathing, I asked students to send kind thoughts to someone with whom they had a

conflict. The students erupted with a refusal to participate, with statements such as "oh no!" and

"I'm choosing someone else!"

     Yoga. Each day of the yoga intervention was rated using a rating scale of 1-10, with 1

being the lowest. The results of this data can be seen in the figure below.

Figure 8: Yoga Engagement Rating. Daily intervention log ratings for yoga intervention.

The graph above indicates that as students become more familiar with the routine of morning

yoga lessons, the delivery, student engagement, and overall success improved. This trend holds

true regardless of fluctuations in the number of participants. September 19 and October 1 stand

out with lower ratings on an otherwise upward trend of success. The log for September 19

shows that in this particular yoga lesson, one of the male participants reacted strongly to seeing a

female student do a particular yoga pose he found sexually suggestive. The log further details

how this reaction disrupted the overall lesson as the male student continued reacting strongly

after a few reminders to control his behavior, and I ended up pausing from leading the yoga

poses in order to deal with the misbehavior. Engagement, deliver, and success was compromised

not only by the misbehavior but also by my need as the teacher to step out of my role of leading

the lesson to correct the misbehavior. October 1 is unique in that it was one of two sessions that

were taught in the afternoon instead of first thing in the morning. The log notes indicate that

students were very energetic both prior to and during the yoga lesson and that the initiation of the

lesson was disrupted by the presence of an extra adult in the classroom engaging students in an extracurricular activity.

The analysis of the log portion of the yoga intervention log shows initial student disruption at the beginning of lessons improved into an ability to self-regulate by the end of the lesson. The notes also show that children who struggled to regulate during yoga lessons early in the intervention developed consistent regulatory abilities in the later yoga lessons. For example, in week two, a child "started purposefully falling over" during the lesson. The other students did not respond to his misbehavior, and by the end of the lesson, he had "returned to doing poses in seriousness." That same student in week three again began to be silly during the lesson, but "calmed down again" when redirected. By week five, this student, along with two other male students who had shown some difficulty with regulation, "participated and behaved themselves" and "showed more maturity and discipline" in the lesson. This student also "exhibited self-control, a high level of engagement" during week six's yoga lesson, in which he started the lesson by saying, "I'm having a bad day" and ended with appearing "very calm and centered." Based on these observations, the practice of yoga can increase self-regulation.

Another emerging theme in the logs is an increased sense of belonging demonstrated through self-advocacy and student leadership. By the second lesson, students had requested free time at the end of the sessions for free movement. During week three, students began asking if they could help choose the poses for the lesson. During subsequent weeks students worked collaboratively at the beginning of lessons to choose and design the yoga sequences themselves. Students who rarely worked together and often demonstrated difficulty in social situations in the classroom cooperated successfully in choosing the yoga poses for our lessons.

Community building. Community building activities were also rated each day using a 1-10 scale, with 1 being the lowest. The results of this data are displayed in chronological order by the name of each activity in the figure below.
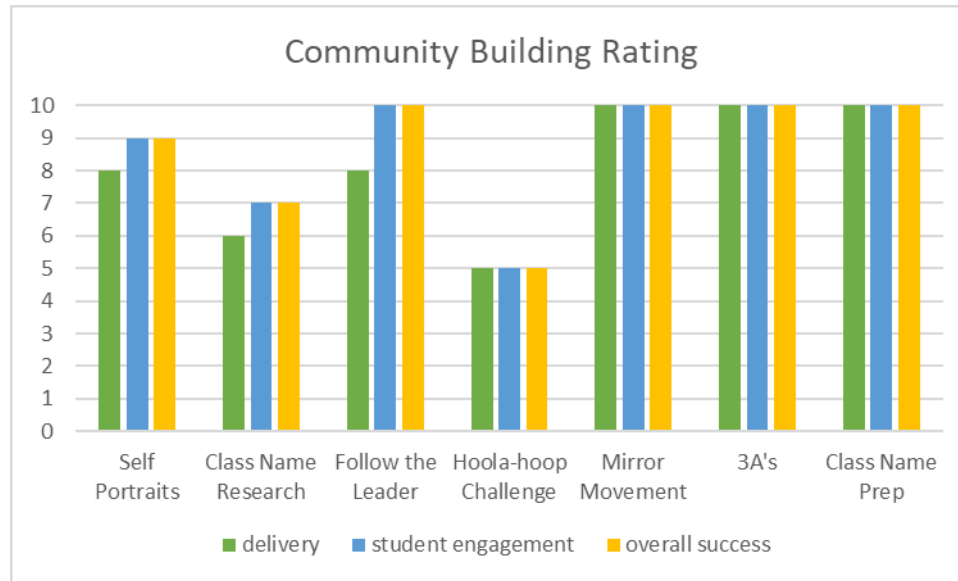
Figure 9: Community Building Rating. Daily intervention log ratings for community building intervention.

Consistently high levels of success are seen in the last three activities of the intervention period. Particularly notable is the increase in ratings between the Class Name Research and the Class Name Prep. Both activities involved the same small groupings of students. The initial activity – the research – was the first instance these groups formed to begin their project. The log notes show that some students were initially resistant to working with the students chosen for their small groups and expressed displeasure, some asking to switch groups. By the final activity – Class Name Prep – the groups had worked together throughout the six weeks to finish their project. In this final activity, the log notes state the students "efficiently got together, discussed, and decided" on the final details of their presentation.

The rest of the community building activities were well-received and successful as well, except for the hoola-hoop challenge. This activity asked children to break into small groups of 4-5 and work together to lower a hoola-hoop to the ground using only their index fingers. The challenge proved too easy, resulting in boredom in some groups. Another group erupted in conflict when they had to wait for one participant to finish tying her shoe before joining. When compared to the other activities, this activity stands out as being less immediately satisfying, requiring more group coordination for a less satisfying result. The other two game-based activities (Follow the Leader and Mirror Movement) were designed to be immediately rewarding and elicited much greater enthusiasm. Students were able to make quick decisions, work cooperatively, and navigate socially in both these activities.

The 3A's activity consisted of students sharing in a circle on a voluntary basis one of three A's: an appreciation, apology, or aha moment. This activity was also well-received, with many students offering heartfelt and specific appreciations and apologies to members of the class.

Student Journal Prompts

The weekly prompted student journal responses were coded for words or phrases that referred to causes of dysregulation or distraction in the classroom.

Causes of Dysregulation or Distraction

physical discomfort
5.9%

emotions
14.7%

unprepared
2.9%

wanting to move
5.9%

conflicts or teasing
14.7%

5.9%

14.7%

5.9%

14.7%

17.6%

38.2%

too much work/ not understanding
17.6%
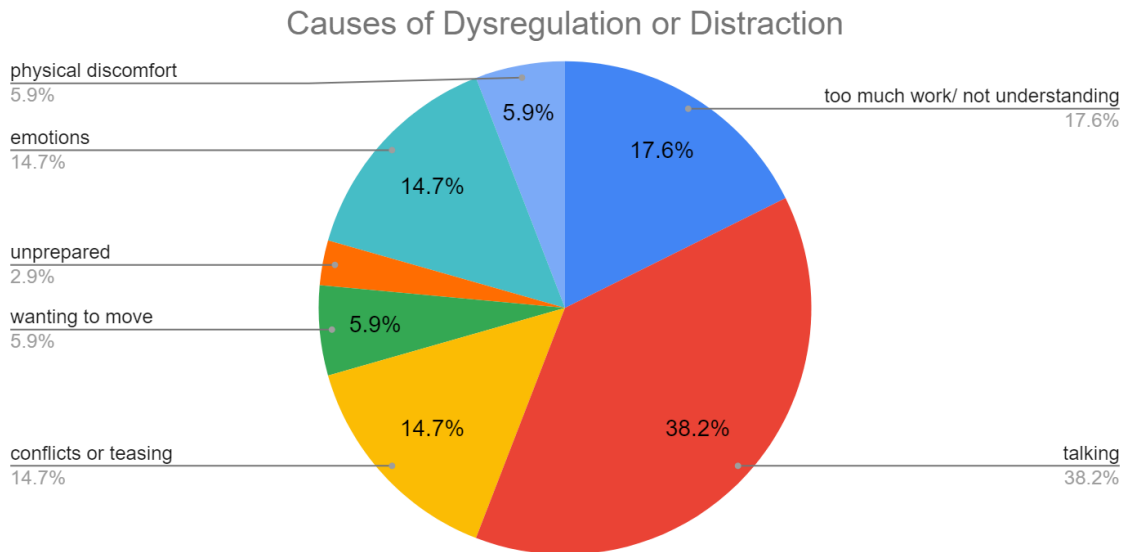
talking
38.2%

Figure 10: Causes of Dysregulation or Distraction. Student prompted journal responses analyzed thematically.

The leading cause of distraction in the classroom was talking, which was also noted as the second highest type of disruptive behavior in the daily observation tally. The next two most mentioned categories, too much work/not understanding and emotions, are less easily observable phenomenon which requires self-regulation skills such as those mentioned in Figure 6. Conflicts and teasing, tied with emotions for third-highest factor leading to dysregulation, is tied to student sense of belonging and affirms the findings from Figure 7 that students still struggle with feeling supported and getting along with their classmates.

Figure 11 details student preference for specific strategies and tools utilized throughout the intervention.
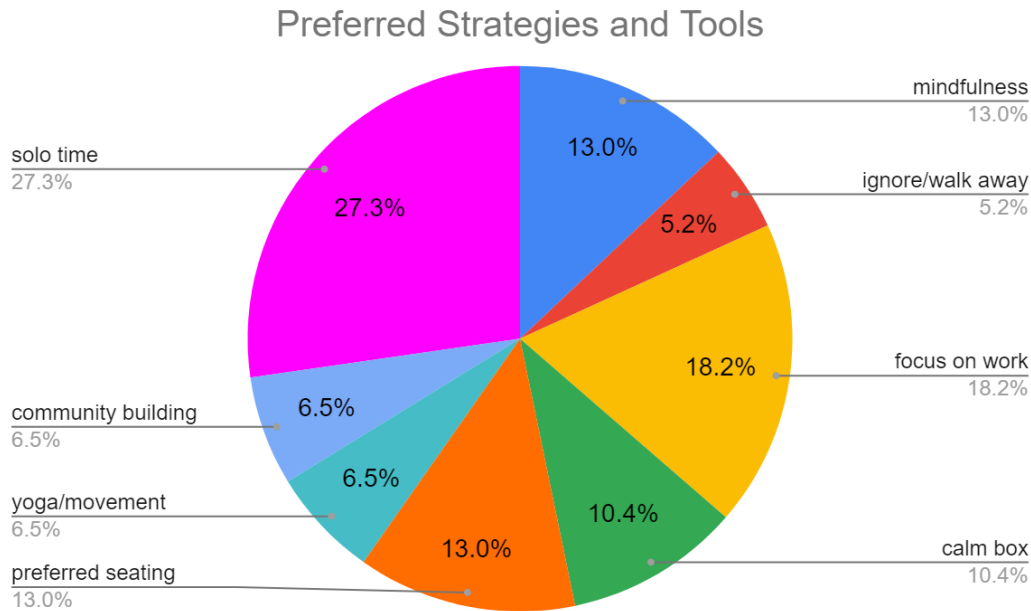
Figure 11: Preferred Strategies or Tools. Student prompted journal responses analyzed thematically.

Solo time is a long-practiced classroom activity that was not initially planned as part of the

intervention but was often referenced as a favorite activity for self-calming. Solo time is a

weekly activity that consists of the entire class putting away work and choosing independent,

relaxing activities such as art, knitting, puzzles, or reading. Each child works alone and silently

on this relaxing activity while soft music plays in the room. Many students not only mentioned it

as their favorite but requested that we do more of it. Focusing on work was the second most

mentioned activity for self-regulation, which conforms with the Montessori principle that

discipline is found through engagement with the material. Mindfulness is tied for third-most

mentioned preferred activity, but often it was mentioned outside the context of a formal practice,

for instance, taking deep breaths or closing one's eyes.

When asked to name their least favorite activity (Figure 12) many mentioned mindfulness, stating it was "too hard and I can't really focus" and that it made them feel tired or have a headache.
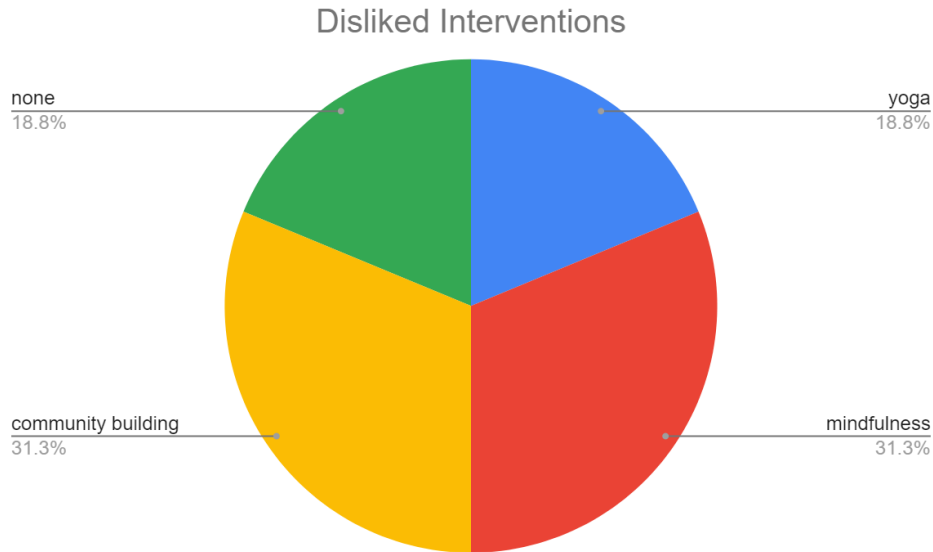
Figure 12: Disliked Interventions. Students prompted journal responses analyzed thematically.

Community building was also mentioned the most as a disliked intervention, with community meetings being specifically named. Students mentioned they disliked missing work time and were bothered by students talking out during meetings.

When asked how they feel during mindfulness, yoga, and when choosing their own self-calming strategy, students mostly reported positive reactions (see Figure 13 below).

Student Responses to Interventions
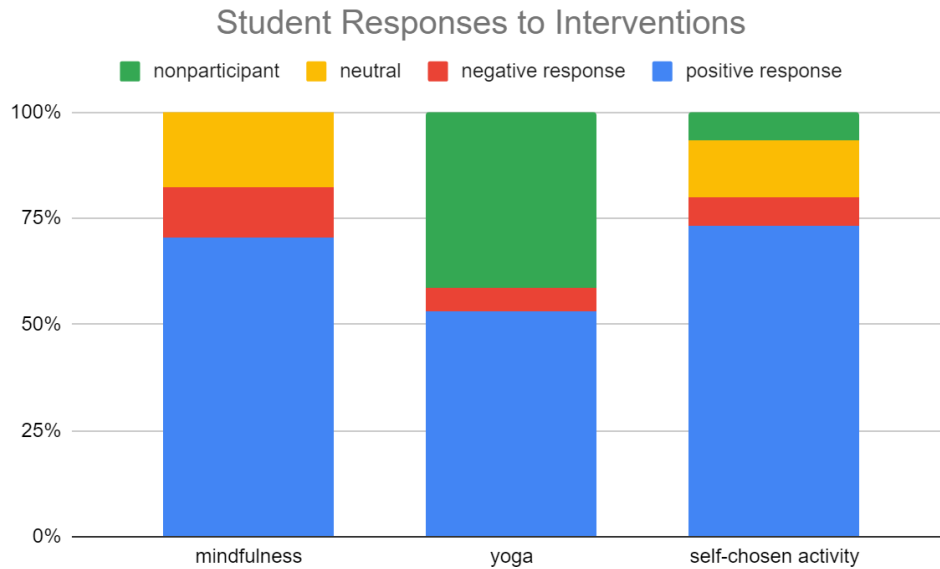
Figure 13: Student Responses to Interventions. Student prompted journal responses analyzed thematically.

When students were able to choose their own self-calming strategy, they reported the highest

positive responses and few negative responses. Yoga had the least negative responses but also

the most nonparticipants. Despite being mentioned as a least favorite activity, most students

reported positive or neutral responses to mindfulness.

Conclusions and Recommendations

This study aimed to understand how trauma-informed strategies affected student self-

regulation and sense of belonging. The underlying goal of the researcher was to initiate a

trauma-informed practice that would continue as a means of support for students healing from

trauma. Given the complex traumas my students have endured, a deep re-envisioning of student-

teacher relationships, classroom management, discipline, and curriculum from a trauma-

informed lens is needed schoolwide. Ultimately for the students' trauma to be healed, the

underlying and ongoing causes and effects must be addressed by the school as a whole adopting

an anti-racist, trauma-informed practice.

Observational data indicated that as the length of time increased in which students were exposed to the intervention schedule, self-regulation both increased and stabilized. Meanwhile, disruptive behaviors (distraction, movement, verbal, physical, and playing) decreased, apart from verbal disruption (mainly in the form of socialization). These results point to the positive impact the intervention had on the overall self-regulation of the students.

Questionnaire responses indicated that students' ability to participate in classroom discussions and meetings improved. Students' ability to notice how behaviors affect others and noticing when they are not meeting teacher expectations also improved. Students also indicated a growth in their ability to self-regulate when faced with disruptive feelings such as silliness, sadness, or anger. Results also showed that students sense of belonging was generally high, except in the areas of asking for help and communicating wants and needs. Getting along with and feeling supported in the community remained relatively high (averaging a "most of the time" rating) but showed a slight decrease throughout the intervention, pointing to an area of needed growth.

Among the interventions, mindfulness contributed to an increase in self-regulation skills. Yoga greatly improved self-regulation and sense of belonging among children who participated. This was well-demonstrated through an increase in self-controlled behavior during yoga lessons and student ownership and collaboration in designing and leading the yoga sequences. The results of these two interventions coincide with the findings by Brunzell et al. (2016), who found that incorporating both "bottom-up" and "top-down" approaches to regulating the mind, body, and emotions were effective in repairing children's ability to self-regulate. Community building activities were well received by students and featured cooperative decision-making, collaborative

work, and social integration of all students. This part of the intervention proved promising for developing students' sense of belonging.

Talking was noted as the greatest cause of distraction, followed by too much or not understanding the work. Emotions and conflicts and teasing followed as the next greatest causes of distraction in the classroom. Talking, too much/not understanding work, and emotions involve self-regulation skills. Talking, and conflicts and teasing are social situations that call for skills in social navigation and a strong sense of belonging.

Students are still in need of support to increase their sense of belonging and ability to navigate social obstacles in the classroom, as indicated by the findings of the questionnaires and student journal logs. The most beneficial independent self-regulation interventions included mindfulness, carefully selected seating, and the calm box. Although not widespread in popularity, those who used yoga seemed to benefit immensely from it, both in my observations and in student feedback. It should be kept as an option for those who benefit from it. Using work to regulate and focus was very popular but is not considered an intervention as it is the main activity of the learning environment. However, it should be noted that this outcome relates to the role that high academic standards and making meaning of new learning have in recovery from trauma, as discussed in the literature (Cole et al., 2005; Crosby et al., 2018). The frequent and widespread use of independently selected self-regulation interventions by students shows promise for the design used in this study to provide opportunities for children to respond in healthy ways to stress in the classroom, thereby building resilience to trauma (Bloom, 1995).

The teacher implemented classroom routines and activities that proved beneficial for self-regulation and sense of belonging were solo time, mindfulness, yoga lessons, community building, and seating arrangements. Predictability, consistency, and routine are key factors that

contribute to feelings of safety for children (Brunzell et al., 2016; Wolpow et al., 2016). The consistency and predictability of the interventions contributed to an overall sense of safety, a first step in creating a trauma-informed environment conducive to learning. The impact of this predictability was noted when a student remarked she had been "looking forward to it" on a day yoga was missed due to a change in schedule. Students found great benefit in solo time, mentioning its ability to calm and soothe them, as well as enjoying the peace and quiet that settled on the room at large. Positive student-teacher relationships also contribute to feelings of safety in the classroom (Bloom 1995; Brunzell et al., 2016; Crosby et al., 2018). The results show that the interventions had a slightly positive impact on this critical connection, indicating their effectiveness as initial steps in fostering student-teacher relationships. The increased positive connectivity between students and teacher are supported by the findings of Brunzell et al. (2016), who found that teachers leading students in co-regulatory exercises not only built self-regulation but also improved student-teacher relationships.

Based on the findings, my next course of action is to continue the interventions, but possibly change mindfulness to an optional guided activity to allow students to opt-out. Although the results indicated improved self-regulation connected to mindfulness, it was the least preferred activity among students, with some commenting that it was difficult to focus during the practice and made them feel more tired. I plan also to support the further development of a sense of belonging through continued use of community building activities, classroom meetings, and guided support in conflict resolution. As the relationships I have with students continue to develop, I will be better equipped to support students in learning to express their emotions, recognize emotional cues in others, and articulate their needs in social situations. These are the critical next steps discussed by Wolpow et al. (2016) in building a trauma-informed teaching

practice. Supporting this continued development of sense of belonging and social-emotional skills may also lead to increased opportunities for student agency and empowerment in the classroom, another domain shown to be critical in healing from trauma (Bloom, 1995; Cole et al., 2005; Crosby et al., 2018; Garo et al., 2018; Wolpow et al., 2016).

Suggested research to follow this study could include the effects of trauma-informed, restorative justice practices on conflicts and misbehavior, the effects of trauma-informed practices on academic habits and outcomes, the effects of supportive, high academic expectations on trauma recovery, and the effects of antiracist school policies, practices, and curriculum on disrupting and healing trauma.

Classroom teachers and administrators would benefit from adopting a repertoire of trauma-informed strategies for self-regulation, including mindfulness, yoga, movement breaks, a calm box, and solo time. Focusing on building positive student-teacher relationships to influence self-regulation and sense of belonging positively is also recommended. Additionally, as children commonly experience trauma, professional development on trauma for all school staff will help build knowledge and skills for trauma-informed practices throughout the school. This school-wide approach may also help address the root causes of trauma within the school stemming from institutionalized practices of racial discrimination and punitive disciplinary practices, which may retraumatize students of color and other marginalized groups (Sanders-Philips, 2009). Establishing a schoolwide approach could also benefit individual classrooms and teachers by providing common goals and a culture of support for adults within the school (Bloom, 1995; Crosby et al., 2018; Garo, 2018).

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Appendix A
Pre- and Post-Intervention Student Questionnaire

Self-Regulation Student Questionnaire
Participant: **Pre-survey/Post-survey (circle one)**
                                                           Date completed:

        I would like to know how you rate yourself on these classroom skills. Please answer each question honestly. It is important to be honest in your answers because I will use the information you provide to help me plan how to better support you in the classroom. Thanks for helping me with this important project!

| | 1-Never | 2-Kind of | 3-Sometimes | 4-Most of the time | 5-All the time |

Skill	1	2	3	4	5
I find it easy to listen, learn and participate					
I notice when my classmates are distracted by me and I change what I'm doing so I don't distract them.					
I notice when I am acting differently than my teacher expects me to.					
I change what I'm doing when I'm not behaving appropriately.					
I find it easy to come in from recess and transition to work.					
I find it easy to participate in whole group lessons.					
I find it easy to participate in classroom meetings and discussions.					
I feel angry at school and it gets in the way of my learning.					
When I feel angry at school I know what I can do to help me feel better and get back to learning.					
I feel sad at school and it gets in the way of my learning.					
When I feel sad at school I know what I can do to help me feel better and get back to learning.					
I feel silly and overly-energized at school and it gets in the way of my learning.					

THE IMPACT OF TRAUMA-INFORMED STRATEGIES

1-Never   2-Kind of   3-Sometimes   4-Most of the time   5-All the time

Skill	1	2	3	4	5
When I feel silly and overly-energized at school I know what I can do to help me feel better and get back to learning.					
I feel tired at school and it gets in the way of my learning.					
When I feel tired at school I know what I can do to help me feel better and get back to learning.					
I get along with my friends, classmates, and the adults in my school.					
I communicate my wants and needs to my friends, classmates and teachers.					
I ask for help when I need it.					
I wait patiently without interrupting others.					
I notice how my behavior affects others' feelings and thoughts.					
I know how to use tools/strategies to help me focus.					
I find it easy to focus on my work in the classroom.					
I keep track of my belongings and can easily find them.					
I bring my materials to class with me each day.					
I arrive to lessons with my materials quickly after I'm called.					
I feel like I belong and am supported in our classroom community.					
I feel supported by my teacher.					
I feel understood by my teacher.					

Appendix B
Pre- and Post-Intervention Teacher Questionnaire

Self-Regulation Teacher Questionnaire

Participant: **Pre-survey /Post-survey (circle one)**
Date completed:

1-Never   2-Kind of   3-Sometimes   4-Most of the time   5-All the time

Skill	1	2	3	4	5
Appears to easily listen, learn and participate					
Notices when classmates are distracted by her/him and changes behavior to not distract them.					
Notices when she/he are acting differently than expected.					
Changes behavior when not acting appropriately.					
Easily comes in from recess and transitions to work.					
Easily participates in whole group lessons.					
Easily participates in classroom meetings and discussions.					
Appears angry at school and it gets in the way of learning.					
When angry at school knows what to do to feel better and get back to learning.					
Appears sad at school and it gets in the way of learning.					
When sad at school knows what to do to feel better and get back to learning.					
Acts silly and overly-energized at school and it gets in the way of learning.					
When silly and overly-energized at school knows what to do to feel better and get back to learning.					
Appears tired at school and it gets in the way of learning.					
When tired at school know what to do to feel better and get back to learning.					
Gets along with friends, classmates, and the adults in school.					
Communicates wants and needs to friends, classmates and teachers.					
Asks for help when needed.					

THE IMPACT OF TRAUMA-INFORMED STRATEGIES

	1	2	3	4	5
1-Never 2-Kind of 3-Sometimes 4-Most of the time 5-All the time					
Skill	**1**	**2**	**3**	**4**	**5**
Waits patiently without interrupting others.					
Notices how behavior affects others' feelings and thoughts.					
Uses tools/strategies to help focus.					
Easily focuses on work in the classroom.					
Keeps track of belongings and can easily find them.					
Brings materials to class each day.					
Arrives to lessons with materials quickly after called.					
Shows signs of belonging and being supported in our classroom community.					
Appears to feel supported by teachers.					
Appears to feel understood by teachers.					
I have a positive relationship with this child.					
I find it easy to teach this child.					
I am able to meet this child's needs in the classroom.					

Appendix C
Intervention Schedule

Interventions	Data collection

Daily Schedule	Monday	Tuesday	Wednesday	Thursday	Friday
8:30	Mindfulness (10-15 min)	Yoga (10 min)	Community Meeting	Yoga (10 min)	Student Journaling
9:00	Montessori Work Cycle	Montessori Work Cycle	Specials	Montessori Work Cycle	Montessori Work Cycle
					Solo Time (20-30 min)
11:00	**Lunch/Recess**	**Lunch/Recess**	**Lunch/Recess**	**Lunch/Recess**	**Lunch/Recess**
12:20	Montessori Work Cycle	Montessori Work Cycle	Montessori Work Cycle	Montessori Work Cycle	Specials
2:45		Community Building (15 min)		Community Building (15 min)	Community Game (10 min)

Appendix D
Daily Observation Tally & Log

Behavior Observation Tally Log

Date:_____ **Time:** _____**#of Children present:** _____ **Children Absent:** _____

Weather:_____ **Special Circumstances:**_____

	Disruptive behaviors: Behaviors that disrupt either the student's own learning and/or the learning of peers.						Regulated Behaviors: Behaviors that facilitate student's own learning and/or the learning of others.				
	Distracted	Movement	Physical Disruption	Verbal Disruption	Playing		Focused Work	Purposeful Movement	Respecting Work Space	Verbal	Redirecting Others
0 min											
5 min											
10 min											
15 min											
20 min											
25 min											
30 min											

Overall level of disruption: 1 2 3 4 5 6 7 8 9 10
Overall level of regulation: 1 2 3 4 5 6 7 8 9 10

Notes: _____

Appendix E
Daily Intervention Log

Daily Intervention Log

Date: _____ Time of Intervention: _____

Intervention: _____

# of Students Participated: _____ Students absent: _____

Description of implementation: _____

_____

_____

Rate the following aspects of the intervention 1-10, with 1 being the lowest.

Delivery	1	2	3	4	5	6	7	8	9	10
Student engagement	1	2	3	4	5	6	7	8	9	10
Overall success	1	2	3	4	5	6	7	8	9	10

Description of student engagement and responsiveness: _____

_____

_____

_____

_____

_____

Ideas for next time: _____

_____

Appendix F
Weekly Journal Prompts

Student Reflection Journal Prompts

Week 1
- When I felt frustrated this week I . . .
- Something I did to calm myself was . . .

Week 2
- I felt unfocused and unable to complete work this week when . . .
- I felt focused and productive in class this week when . . .
- A strategy or tool I used to help myself focus was . . .

Week 3
- I used a self-calming strategy or movement break when . . .
- Afterwards I felt . . .
- *I felt most grounded and connected this week when…*

Week 4
- When I practice mindfulness in class I feel . . .
- When I practice yoga in class I feel . . .
- *When I use a self-calming strategy of my choice I feel…*

Week 5
- My favorite classroom activity for calming and connecting is . . . because . . .
- My least favorite classroom activity is . . . because . . .
- *An activity I would like us to do more of in class is…*

Appendix G
Resources for Interventions

What follows is a description of how I found or designed each intervention included in my research. This resource is intended to help other teachers who would like to implement the same or similar interventions.

Mindfulness

The mindfulness curriculum used in this research came from Mindful Schools. Interested educators can access their online course, Mindfulness Educator Essentials, to receive training and access to the curriculum at https://www.mindfulschools.org/training/mindful-educator-essentials/.

Yoga

The yoga cards used in my intervention are the Yoga Pretzels deck published by Yoga Ed. Each yoga lesson was constructed by choosing one card from each category of poses (balance, stand, forward bend, back bend, twist & stretch). Yoga Ed. offers online trainings, curricula, and materials for purchase on their website, www.yogaed.com.

Community Building

Self-Portraits. This activity comes from a series of anti-bias community building and identity development lessons presented by anti-bias educator Britt Hawthorne. Her work can be accessed at https://www.patreon.com/britthawthorne.

Class Name Research and Presentation. Researching, discussing, and collaboratively deciding on a class name is an old tradition at my school for newly formed communities. Each new community then presents their chosen name to the entire school community. This activity builds problem-solving, collaboration, and ownership of the class.

Follow the Leader, Mirror Movement, Hoola-Hoop Challenge. These movement games are popular team-building activities that the researcher learned from various trainings and workshops. These and more can be found easily by searching the web for team-building or community-building games.

3A's: This activity was created by Aukeem Ballard, a teacher at Summit Public Schools in Redwood City, CA, and shared by Edutopia.org. A video showing his strategy can be found at https://www.edutopia.org/video/60-second-strategy-appreciation-apology-aha.