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## Creating Learning Environments to Support Students Experiencing Stress: Qualitative Insights from an Extension-Community Partnership

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## **Creating Learning Environments to Support Students Experiencing Stress: Qualitative Insights from an Extension-Community Partnership**

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*For children experiencing chronic stress, succeeding academically in the face of other obstacles can be daunting. Many efforts focused on supporting students fail to address nonacademic aspects of well-being that can impact their ability to succeed. Working to bridge the gap between research and practice, here we describe the results of an Extension-Community partnership that sought to design learning environments to support elementary students' healthy bodies and minds. Project leaders took an ecological systems approach, intervening with students at a local elementary school across multiple contexts. This entailed creating a calming room in the school, building a community garden on the school grounds, and providing wrap-around educational programming for teachers, staff, and families. Interviews were conducted with teachers and school staff (N = 20) to measure their perceptions of the impact of this intervention. Results are presented within the framework of the socio-ecological model, accounting for the multilevel nature of the project impacts. Interview themes revealed the program's success in supporting positive outcomes for students, staff, the school, and the surrounding community. Discussions center around the program's impact on students and on lessons learned that could inform future efforts.*

*Keywords:* calming room, school garden, partnership, elementary students, stress, qualitative interviews

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## Introduction

Exposure to adverse childhood experiences, including chronic stress, can be detrimental for young children, leaving lasting impacts into adulthood (Blair et al., 2011; Evans & Schamberg, 2009; Felitti et al., 1998; Kim et al., 2013). For students who experience chronic stress (e.g., trauma, racism, food insecurity, and community violence), the prospect of succeeding academically in the face of such obstacles can be daunting. Indeed, research consistently shows a pervasive achievement gap for children who experience chronic stress (Pungello et al., 1996; Sirin, 2005; Wagmiller et al., 2006). Even with a multitude of efforts to boost students' academic achievement, the presence of overwhelming opportunity gaps can limit opportunities for success. Contextual factors linked to chronic stress, particularly poverty and racism, can further restrict access to fulfilling educational opportunities and subsequently worsen students' experiences of chronic stress (Alaimo et al., 2001; Evans, 2004).

A number of individual and environmental protective factors can buffer the negative impacts of chronic stress on children, including positive, nurturing relationships with caring adults, such as teachers (Baker 2006; Johnson, 2008), and a child's ability to regulate emotions and behavior (Masten, 2001, 2004; Zhang et al., 2019). Positive experiences in school can serve as a protective factor for children under stress (Liebenberg et al., 2016; Sharkey et al., 2008), though students' experiences of chronic stress can also restrict their educational attainment (e.g., Sirin, 2005).

From a socio-ecological perspective (Bronfenbrenner, 1979), addressing the contextual, economic, and community factors that create barriers to academic success are essential to creating environments that support student wellness and success (Basch, 2011; Lewallen et al., 2015). Leveraging strengths beyond the individual child to support students across multiple contexts can be key in efforts to build resilience (Bryan, 2005; MacDonald & Green, 2001). Indeed, efforts that seek to support student success will inevitably fall short if the chronic stress in students' homes, schools, and communities presents an obstacle too immense to overcome (Delaney-Black et al., 2002; Schraml et al., 2012; Thompson & Massat, 2005).

## The School Environment

How can schools effectively engage students, families, and community members to create learning environments that mitigate the effects of stress and support student well-being? The school environment serves as an ideal place for interventions to support children, as it provides a point of access for large groups of students and is a primary environment in which students spend time. Schools are uniquely suited to support resilience in students experiencing stress and can have impacts above and beyond other protective factors (Sharkey et al., 2008). Creating trauma-sensitive learning spaces that meet the needs of students experiencing chronic stress can provide immersive, holistic supports for these students (Chafouleas et al., 2016). Key features of such spaces are promoting the physical and psychological safety of students (SAMHSA, 2014) and fostering connected relationships between students and teachers/staff (Cole et al., 2013).

Schools also have the unique opportunity to connect interventions to the other contexts that impact students' well-being outside the school environment (e.g., families and communities). Due to the complexity of social and community challenges that create and widen opportunity gaps, creating meaningful change requires multifaceted interventions that actively involve children, families, schools, and surrounding communities (Bryan, 2005); indeed, such active collaboration is key in school-based programs' successful implementation (MacDonald & Green, 2001). Given Extension's presence in communities across the country and expertise in bridging the gap between evidence-based practice and community needs, Extension is uniquely suited to develop and implement such interventions (Fetsch et al., 2012; Olson et al., 2015).

### **Extension-Community Partnership**

In seeking to build a school community to support students experiencing chronic stress, and in seeking to further bridge the gap between community needs and research-based practice, the University of Minnesota Extension Children, Youth, & Family Consortium (Extension CYFC) began a partnership with a local elementary school serving grades Kindergarten through 5<sup>th</sup> grade, with the goal of reducing the many opportunity gaps facing its students. This Extension-Community partnership sought to meet community needs by supporting one elementary school in implementing school-wide, grassroots efforts to support student well-being.

Students and families served by the school face a host of barriers to academic success, including poverty, lack of access to healthy foods, traumatic experiences, and mental health needs. At this school, attendance is comprised of 97% students of color (52% Asian, 35% Black, 2% American Indian), 93% low-income students, and 53% English language learners. By targeting the school environment to address the chronic stressors and resulting behavioral dysregulation exhibited by students and building positive connections between the school and its surrounding community, this partnership sought to enhance student well-being and bolster student engagement.

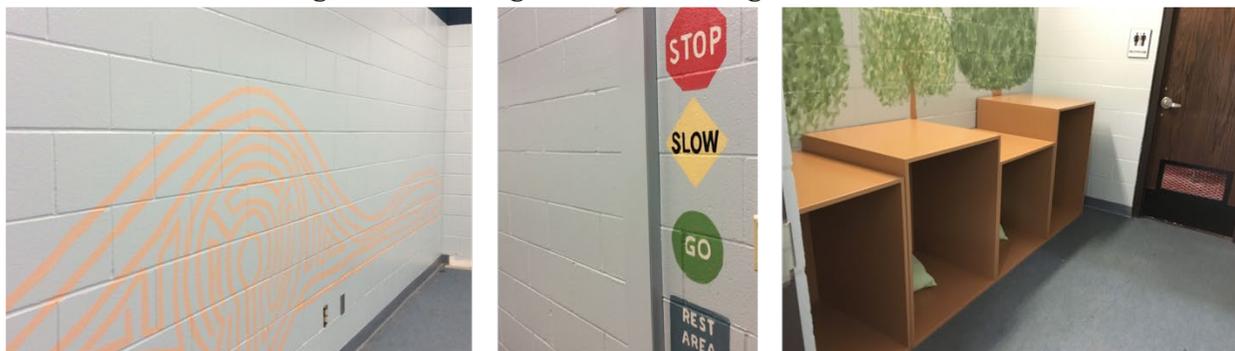
Through this partnership, Extension CYFC project leaders leveraged the strengths of the school, families, and surrounding community to support student success. A key factor in this partnership's successful implementation was buy-in from school staff, particularly the school's principal. Project leaders worked closely with school administrators and staff to identify the largest areas of need that the collaboration should address. These discussions resulted in three initial signature efforts to create learning environments that would support the school's students: creating a calming room in the school to help students regulate emotional or behavioral outbursts, creating a community garden on school grounds to support learning and access to healthy foods, and initiating wrap-around educational programming for teachers and families.

**Calming Room.** A calming room (also called a comfort or sensory room) is a space designed to soothe and relax, often designed with calming colors, relaxing music, and comfortable furniture (Cummings et al., 2010). Though specific evidence reporting the success of calming rooms in schools is more limited, some have reported anecdotal evidence of school-based calming rooms'

success in improving students' behavioral regulation (Morois et al., 2016). Although they differ greatly in context, evidence from residential psychiatric facilities suggests that calming room spaces can support children and youth in learning to self-regulate emotions and behavior (Bobier et al., 2015; Warner et al., 2013). Other research demonstrates significant positive impacts of calming room spaces on children with developmental disabilities (Houghton et al., 1998).

For this project, the calming room was created as a therapeutic space for students to use with the support of a school social worker when they became agitated or emotionally dysregulated. Students could be directed to visit the room by a teacher or staff member, or in some cases, the students themselves asked to visit it if they felt themselves becoming agitated. Extension CYFC partnered with University of Minnesota College of Design faculty and students to design the calming room, taking a minimalist approach to the space. College of Design students facilitated the design and implementation of the calming room through a service-learning project. The design incorporated patterns and images on the walls to foster regulation, such as a labyrinth that students could trace with their hands and a stop/go design that would prompt students to monitor their emotional states. The room also included small cubbies to act as a safe space where students could retreat (see Figure 1).

**Figure 1. Calming Room Wall Designs and Cubbies**



Importantly, the calming room was not a space where children would be left alone or secluded: such seclusion or isolation rooms are harmful and are not recommended for use with students (LeBel et al., 2012). The calming room implemented at this school was specifically designed for students to use with the support of a trained adult, typically a school social worker. Thus, the calming room in this school afforded students a safe and calming space to work with school social workers individually, helping them to learn behavioral regulation strategies and to calm down when feeling agitated – practices regarded as critical in providing trauma-informed support to students (Chafouleas et al., 2016).

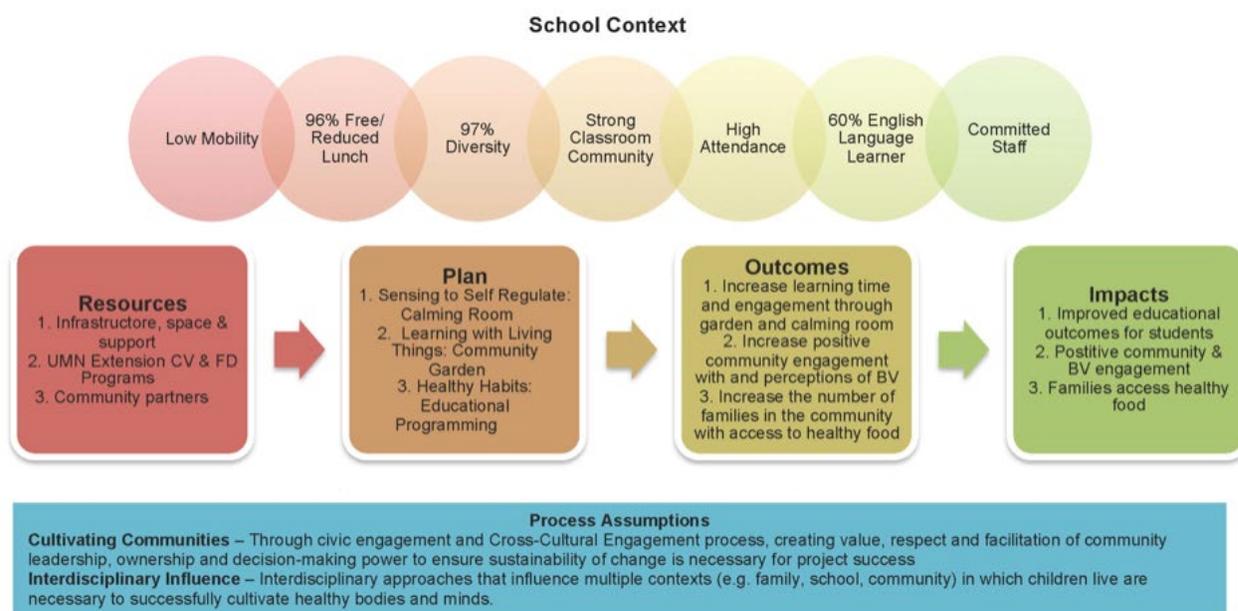
**School Garden.** School gardens are frequently used with the goal of enhancing or supplementing academic instruction (Graham et al., 2005). Previous work has found that experiential learning in school gardens is related to improvements in students' academic achievement and consumption of healthy foods (Blair, 2009; Ratcliffe et al., 2011). Some work

also finds that time spent in garden spaces can support children’s social-emotional development, leading to increased cooperation and feelings of calm (Robinson & Zajicek, 2005; Swank & Shin, 2015). In adults, access to community gardens is related to increases in consumption of fruits and vegetables, social involvement, and social connectedness (Kingsley & Townsend, 2006; Litt et al., 2011). To that end, the school garden was developed both to be used by teachers and students during the school day as an enhancement to traditional classroom learning, as well as by students’ families and members of the surrounding community.

**Wrap-Around Educational Programming.** Wrap-around educational programming included efforts focused on supporting students and their families, such as cooking classes and free food distribution days. Efforts also included programming for the school’s teachers and staff, such as trainings on trauma-sensitive care.

Over time, the partnership flourished and spread in unpredictable ways, resulting in connections with local law enforcement to support more positive relations with the community and mental health providers to provide on-site mental health services to students. In implementing this program, project leaders employed a developmental approach due largely to the fluid nature of the work. Project leaders focused on three primary short-term program outcomes: 1) increasing student learning and engagement through use of the garden and calming room spaces, 2) increasing community engagement and positive perceptions of the school, and 3) increasing access to healthy foods (see Figure 2). For the results presented here, the evaluation team primarily focused on assessing the first outcome via teacher/staff perceptions.

**Figure 2. Original Program Logic Model of Project Plan, Outcomes, and Impacts**



## Methods

The goal of the present evaluation was to assess teacher/staff perceptions of this project's success. Based on the complex, multitiered efforts of this project, program evaluators employed a qualitative approach to assess teacher/staff perceptions of the project's success. A qualitative approach was most appropriate for this evaluation for two primary reasons. First, given the size of the school, it would have been difficult to reach statistical power using quantitative methods. Second, project leaders were specifically interested in answering the evaluation questions using qualitative means, an important consideration in designing a program evaluation (Patton, 2008). Specific questions for this evaluation included:

- 1) To what extent and in what ways did teachers/staff use the garden and calming room?
- 2) What, if any, were perceived impacts on student's ability to regulate their emotions and behavior?
- 3) What, if any, were perceived impacts on instructional time and student engagement?
- 4) What were teacher/staff perceptions of how the implementation of the garden impacted community members' engagement with the school?
- 5) What barriers, if any, did teachers/staff experience in the use of the garden and calming room?
- 6) What recommendations did teachers/staff have for future practices?

It was expected that teachers would report increased student learning time due to the use of the two new spaces and increased positive engagement with parents and the community.

## Participants

All teachers and staff (approximately 50 people) were invited to participate in brief interviews during the school day across three days. Interviewees were recruited via email invitation and were each offered a \$10 Target gift card as compensation for their participation in the evaluation. A total of 20 school staff chose to complete interviews, 16 were female, and four were male. Interviewees included teachers ( $n = 11$ ), behavioral staff, such as school social workers ( $n = 5$ ), and other school staff, such as the school nurse, school librarian, and office staff ( $n = 4$ ).

## Data Collection

Semi-structured interviews were conducted with teachers and staff by the first two authors, with one serving as the primary interviewer and the other serving as the note-taker. In these interviews, teachers and staff were asked to reflect on how the calming room and school garden changed the school's atmosphere and impacted students. Interview questions were developed by the evaluation team in collaboration with Extension CYFC program staff, with teachers/staff answering one set of questions related to the calming room and another related to the garden (see Table 1). Interviews lasted roughly 15 to 20 minutes in length and were conducted in-person

during the school day. Interviews were audio-recorded and were subsequently transcribed by an independent service.

**Table 1. Teacher and Staff Interview Questions**

Question Category	Interview Questions
Calming Room	<ol style="list-style-type: none"> <li>1. Were you able to use the calming room with students?               <ol style="list-style-type: none"> <li>a. IF YES: How often do students visit the calming room? What is the approximate duration of their visit? What do students typically do in the calming room? What were some of the challenges or barriers you encountered in using the calming room?</li> <li>b. IF NO: Do you have any plans to use the calming room in the future? What barriers have prevented you from using the calming room?</li> </ol> </li> <li>2. To what degree has the calming room been effective in addressing behavioral challenges faced by students? How has the use of the calming room affected how you intervene with students?</li> <li>3. In what ways has using the calming room affected student engagement in classroom learning?               <ol style="list-style-type: none"> <li>a. For the individual using the calming room?</li> <li>b. For the other students in the class?</li> </ol> </li> <li>4. What, if any, behavioral changes or patterns have you witnessed in students who use the calming room?</li> <li>5. What other factors aside from the calming room have affected how students are learning to regulate their emotions and behaviors?</li> <li>6. What suggestions do you have for future calming room practices?</li> </ol>
School Garden	<ol style="list-style-type: none"> <li>1. Were you able to use the garden in your classroom lessons?               <ol style="list-style-type: none"> <li>a. IF YES: How did you integrate the garden into your classroom?</li> <li>b. IF NO: Do you have any plans to use the garden in the future? What barriers have prevented you from using the garden?</li> </ol> </li> <li>2. What were some of the successes you experienced while implementing the garden into your curriculum?</li> <li>3. What were some of the challenges or barriers you encountered in using the garden?</li> <li>4. How did your students respond to the idea of learning in the garden? What was the enthusiasm of students for gardens in general prior to using the garden and after using the garden?</li> <li>5. Have you used the garden as a calming or therapeutic space with students when they are having emotional or behavioral issues?               <ol style="list-style-type: none"> <li>a. IF YES: To what extent has the garden been effective in addressing behavioral challenges faced by students? What, if any, behavioral changes or patterns have you witnessed in students who use the garden?</li> </ol> </li> <li>6. To what degree did you see parents, family members, or others from the community involved in the garden?</li> <li>7. What suggestions do you have for future community garden projects in schools?</li> </ol>

## Data Analysis

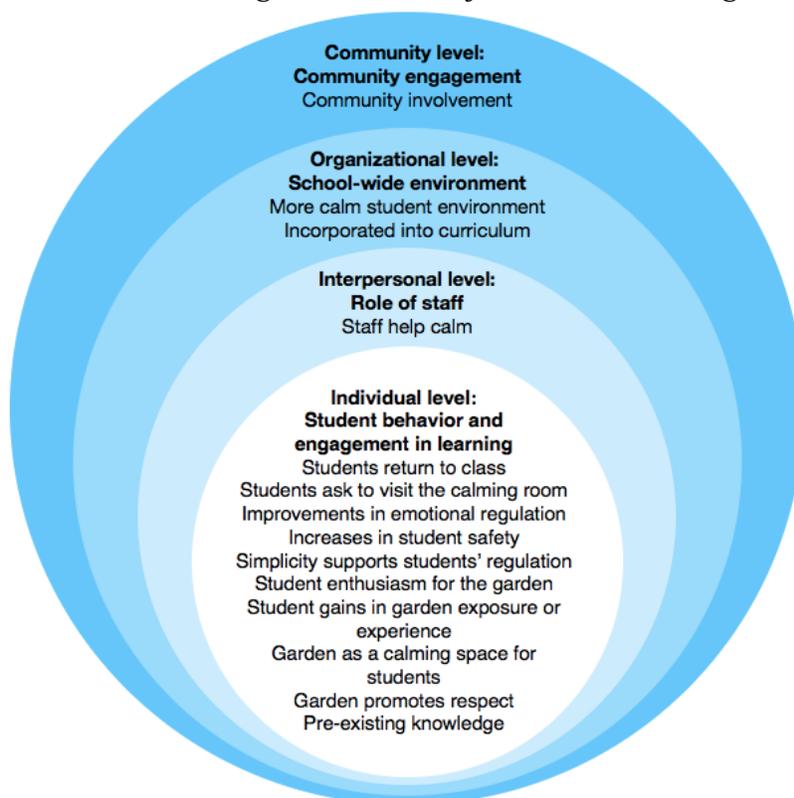
Detailed records of interviews were maintained through notes, audio recordings, and transcripts. Interview transcripts were then analyzed for themes using NVivo qualitative research software, using an iterative approach akin to consensual qualitative research (Hill et al., 2005). Two coders (the first and second author) established inter-rater reliability and strict coding procedures: coders first independently reviewed a subset of interviews (25% of the sample) for major themes that repeatedly arose across multiple interviews. Next, coders discussed these themes, established coding procedures, and reached a consensus for themes to be coded moving forward. Once coders reached consensus and agreed upon major themes for this subset of interviews, coders analyzed all the interview transcripts for the established themes.

## Results

Interview themes were analyzed in two groups based on the subject area of the interview: the calming room or the garden. From the teacher/staff interviews, a total of seven themes were identified related to the calming room: (a) the role of staff in helping students calm themselves, (b) students returning to class, (c) improvements in the school environment, (d) students asking to go to the calming room, (e) improved emotional regulation, (f) increases in student safety, and (g) the importance of simplicity in the calming room itself. Overall, teachers and staff reported the calming room as useful and beneficial to supporting students, as well as the broader school community.

A total of 10 themes were identified related to the school garden: (a) student enthusiasm for the garden, (b) getting garden exposure or experience, (c) community involvement in the garden, (d) a need for more resources, (e) using the garden as a calming space, (f) the role of the garden in promoting respect, (g) teachers incorporating the garden into their curriculum, (h) lack of time as a barrier to using the garden more, (i) lack of knowledge as a barrier, and (j) students bringing existing knowledge to their garden experience. Broadly, teachers and staff reported that the school garden was a beneficial addition to the school environment.

Given this project's focus on intervening with students across multiple levels (i.e., the students, school staff, school environment, and surrounding community), results are presented here within the framework of the socio-ecological model (Bronfenbrenner, 1979). This model demonstrates how child development is influenced by many levels of the environment (see Figure 3). Presenting evaluation results within this framework acknowledges both the multilevel nature of the intervention and the many contextual factors that worked together to impact and improve student well-being.

**Figure 3. Qualitative Themes Arranged within Bronfenbrenner's Ecological Systems Model**

The individual level of themes relates to the students, particularly with regard to changes in their behavior and their engagement in learning. The interpersonal level incorporates the role that staff play in intervening with students. The organizational level describes changes to the school-wide environment as a result of the program. The community level touches on outcomes related to community engagement. Finally, though not a part of the ecological systems framework, themes that touch on challenges and barriers to success are discussed.

### **Student Behavior and Engagement in Learning**

This first level of change contains those themes that relate to impacts on individual students. For the calming room, the space helped students get back to class sooner, regulate their emotions, and increase student safety. The calming room was a place that students asked to go when they needed help calming down, and its simplicity helped facilitate that process. In the garden, students showed great enthusiasm for the space, where they gained experience in the gardening process. The garden helped promote students' respect for each other and was also used by some staff as a calming space.

**Students Return to Class.** Many teachers and staff reported that the use of the calming room supported students in getting back to class. After returning from the calming room, students were better regulated and ready to engage in the classroom. One teacher said, "I've noticed that kids

seem to calm down and come back a little bit more relaxed and ready to work.” One staff member noted that having the calming room space also supported creating a calmer learning environment for other students, saying,

Having a space to take the students to in order for them to calm down...also helps the rest of the class so the learning can continue for the other 27 students...It's been a lot better than trying to deal with it all in the classroom.

**Students Ask to Visit the Calming Room.** A marked aspect of the calming room is that students asked to go to the room when they felt they needed to use it. One staff member noted that “They know it's a good space that they can go to, and some of them have even said, you know, ‘I need a break, can I go to that room?’ They know the calming room is there.” Another teacher said,

I know that students are being a little more proactive. They're asking to go to the calming room if they kind of starting to get... a little agitated or escalating behavior, and they're asking to go there before like: ‘I just need a break can I go there?’

**Improvements in Emotional Regulation.** Many teachers and staff described how the calming room was successful in its designed purpose to support students in their emotional regulation. One teacher said, “They like their quiet and the calmness of the room. That really settles them down a lot, and the fact that they're away from everybody.” One staff member mentioned the importance of the new space in supporting emotional regulation. They said, “Before it was there... we would take them to a room and just calm them down, but... it didn't have the same calming effect.”

**Increases in Student Safety.** Teachers and staff reported that the calming room space promoted student safety. They referred to the space itself as being physically safe for students. One teacher said, “Especially compared to the way it was before the renovation; it's safer now...Because it's a safer space, we don't have to keep them safe once they're in there.” Teachers and staff also reported that students considered the space safe for them to retreat to, with one teacher remarking, “It's a safe space. The kids know it's a safe space.” Another important finding is that because the students considered the calming room safe and asked to visit it, they required fewer physical escorts during the school day, also increasing student safety. One teacher said, “I've seen one student go from being restrained to [being] able to walk in there.”

**Simplicity Supports Students' Regulation.** A few teachers and staff reflected on how the simplistic design of the calming room helped to support students' regulation. The room's simplistic design was inherent in its success because when a student is agitated, they need to “get away from the stimuli,” as one teacher said. One school staff member reported that “[students] try to find something to break and there's nothing to break, which is great.” One staff member

described the relationship between emotional regulation and a simplistic space, saying, “Less is more, so the more things in the room, the more distractions, the more heightened alertness.”

**Student Enthusiasm for the Garden.** Many teachers and staff noted that students were excited about using the garden, engaged in the process, and eager to participate in gardening activities. Though some were hesitant initially, their interest grew once they were able to actively participate in the garden. One teacher said,

When it started last year, there was some excitement, but not as much until after we actually got up there and started doing things. Like when we were talking about it in the classroom, it was sort of this idea for them. But once they realized they actually get to do something, their interest and enthusiasm just skyrocketed.

One teacher even noted that students specifically requested to participate in the garden: “They asked me. Like, I’m so busy teaching them, then getting sidetracked, and they’re like, ‘Can we do something with the garden?’”

**Student Gains in Garden Exposure or Experience.** The presence of the garden in the school allowed students to gain experience in gardening. One teacher remarked, “A lot of the kids knew about gardens, but they had never worked on one, partaken in one, seen one.” Teachers and staff described the variety of activities students have performed in the garden, including watering, planting, pulling weeds, and digging. One staff member said, “It was wonderful to see the students; they’re just such eager beavers...[They’re] digging dirt, picking it up, moving it, working together, seeing things grow.” Even younger students were able to gain garden exposure. One teacher commented, “Some of the kids were in preschool...and we were actually able to like pick some of the flowers and bring them in so we can have them in the classroom as well.”

**Garden as a Calming Space for Students.** In addition to the calming room, several staff mentioned using the garden as a calming or therapeutic space with students. One staff member noted, “When some students are escalated, I go, ‘Let’s go sit on the front steps’ and we’ll sit on the front steps, we’ll talk about the garden. We’ll walk through the garden; it is a nice calming activity.” The garden also acted as a space for children to relieve excess pent-up energy. One teacher said,

We brought them out to the garden, and they’re able to lift dirt. I mean, that’s amazing what that does to release that stress, so they were moving dirt, they were lifting dirt....For the kids that were dysregulated to go out and to lift some of those heavy objects....Just to lift the shovel and lift the dirt or get that motion going, how much tension that relieved for them.

Others reported that students who struggled to focus in traditional classroom settings were able to effectively engage in the garden. One teacher said, “It’s really neat. I think it’s able to take kids who can’t really focus well...and then, depending on the teacher, they can bring them in smaller groups and really focus their attention.”

**Garden Promotes Respect.** A few teachers and staff noted that the garden elicited increases in cooperation, feelings of community, teamwork, peacefulness, and respect among students. One teacher reflected, “What I’ve also noticed is that the kids respect it. It’s not torn up. They don’t go through it; they don’t step on it. They literally walk around it. They’re paying attention to it.” Students also respected each other when they were in the garden. One teacher noted, “I’ve seen a lot of cooperation increases and students that cannot work together in the classroom can work together outside, so the different environment really helps there.”

**Pre-existing Knowledge.** A few teachers and staff noted that some students had pre-existing knowledge of or experience with gardens. One teacher commented, “One of our kids actually has a farm, so he has gone to his farm and taken pictures, and he’s very interested in what we’re doing here.” Some students were even able to share their knowledge with teachers and staff. One teacher said, “Some of our kids that have gardens, it was like, ‘Oh, we can show our staff members what to do.’”

### **Role of Staff**

School staff played a key role in the success of the project in supporting student well-being, specifically in the use of the calming room. Beyond the room itself, staff played a key role in facilitating students’ regulation.

**Staff Help Calm.** Although the calming room had important aspects that supported students, school staff were an important component to helping students calm down. The calming room was an instrument that improved the way the staff were able to support students. One staff member said, “[The room] gets them back on task again. When they’re ready, we can tell, and then the student’s able to talk....We [are] able to process with them a little bit and see what’s going on.” Staff also supported students in staying calm outside of the calming room. One teacher noted, “The social workers in our building have been training the entire staff on trauma and how that affects students, and what [we] can help students do to self-regulate when they’re in the classroom.” Beyond just the implementation of the calming room, the role that staff played in working with students was a key component of the calming room’s success.

### **School-Wide Environment**

The intervention resulted in positive changes to the school environment, specifically that it is calmer overall. Teachers also incorporated the garden into their class curriculum, indicating that the program enhanced learning opportunities for students.

**More Calm School Environment.** Teachers and staff reported that the calming room not only benefited the students who used it but also improved the overall school environment, even beyond the classroom. One teacher commented that they saw less “chaotic movement throughout the building.” Another teacher noted that “it seems to be a lot calmer in the building” now. One staff member reported a noticeable change in the overall school environment from previous years, saying,

When I first started working in this building, there was a lot of chaotic movement... within the classrooms, between classrooms and the hallways, and there was a lot of running. A lot of distraction behavior happening in the hallways, especially in addition in the classrooms, and that’s really calmed down since then.

**Incorporated Garden into Curriculum.** A few teachers recounted how they incorporated the garden into their class’s curriculum, enhancing students’ learning opportunities. Teachers used the garden space with their students across several different content areas, making connections to science, math, and social studies. One teacher said, “I remember we did the writing like a scientist and observed – went out and observed all the plants and [wrote about] them.” The garden also facilitated teachers introducing new vocabulary to students. One teacher said, “The kids have learned some new vocabulary words around the context of gardening, but not just words that relate to gardening, but to other things in general.”

### Community Engagement

This final level of change falls at the community level, noting the program’s success in engaging community members, parents, and guardians in the school garden.

**Community Involvement in the Garden.** The garden was utilized by community members, including parents of the school’s students and those who live in the surrounding area. Teachers and staff reported that community members picked produce to take home and also cared for the garden (e.g., watering, weeding). Several teachers and staff reported that students mentioned planning to visit the garden with their families during the summer months when school was not in session. One teacher said, “I’ve heard kids this year say, ‘I’m going to be here all summer. I’m going to come and check out the garden all summer.’” One staff member even noted that using the garden with parents helped facilitate conversations, despite language barriers, noting,

The most difficult job that I had in this school is the language barrier because I can’t work with most of our families because of the language barrier, but when you’re in the garden, you don’t need words, and that’s been really a neat experience. They learn a word or two here and there, and a lot of them have been able to practice their English, and it’s been nice that way.

Notably, several teachers and staff commented that a select few community members, in particular, were most prominent in caring for the garden during the summer months. One teacher said, “Last year, there was one parent that was heavily involved in any kind of upkeep in maintaining the garden, watering, weeding, and those kinds of things.”

### **Barriers and Challenges**

Several barriers and challenges were also noted throughout the course of the interviews with teachers and staff, particularly in relation to the school garden.

**Need for More Resources.** Several school staff and teachers mentioned a need for more resources in the garden itself. A desire for more space was a common request. One teacher commented that “Not everybody can be there at the same time. When you’ve got one bed for a grade level, and there’s four classes in a grade level, it’s a challenge. Everybody wants to plant, and not everybody can.” Concerns were also raised about the amount and quality of tools available. One teacher said, “More is better because sometimes we find ourselves like...do we have enough equipment? And then sometimes it’s the quality of the equipment, like our broom broke this morning. So, the kid that had the broom was like, ‘oh no, I can’t do anything.’”

**Time as a Barrier.** Several teachers and staff noted that a lack of time was a barrier in preventing their use of the garden. One teacher commented, “We have another month [left in the school year]....When you actually get something coming out of the ground, I mean, that’s got to be pretty exciting....I hope they can actually see some results. I wish they can, but I don’t know when everything comes up.”

**Knowledge as a Barrier.** A few teachers and staff also noted that their own lack of knowledge surrounding gardening acted as a barrier in using the garden, noting that having specific direction about what to do in the garden might help overcome this. One teacher said, “I’m not a gardener, so...planting and what not isn’t really my forte, and I didn’t know. I would really need some direction like ‘plant this here and here’s how to do it.’”

### **Discussion**

Through this Extension-Community partnership, Extension CYFC project leaders created learning environments that teachers and staff described as supporting student well-being and increasing community connections to the school. Using a socio-ecological perspective (Bronfenbrenner, 1979), positive program outcomes were discovered at the individual, interpersonal, organizational, and community levels.

At the individual level, teachers and staff noted positive changes in individual students’ emotional regulation, enthusiasm for the garden, and time spent in the classroom. Akin to prior findings, teachers and staff reported the calming room as being successful in promoting

improved regulation in young people (Morais et al., 2016; Warner et al., 2013). Teachers and staff also stated that many students recognized the use of the calming room and asked to visit it when they felt themselves becoming agitated, which suggests that students learned to use the space as a strategy to help themselves calm down when they started to feel out of control. Teachers and staff also reported that the calming room supported students in getting back to class, which increased their own time in the classroom and potentially created a less disruptive learning environment for other students.

Teachers and staff successfully integrated the school garden into emotion regulation work for students, aligning with previous work demonstrating the success of gardening spaces on affect (Swank & Shin, 2015). Similarly, in alignment with previous research, teachers and staff reported that students demonstrated a higher level of cooperation with one another while working in the garden (Robinson & Zajicek, 2005). Students not only gained exposure to new topics and skills through the school garden, but as noted by teachers and staff, also learned cooperation, respect, and emotion regulation, providing positive school experiences which may act as protective factors against adversity (Liebenberg et al., 2016; Sharkey et al., 2008).

At the interpersonal level, teachers and staff played an integral role in supporting student emotional regulation both inside and outside the calming room. At the organizational and community levels, teachers and staff reported that the implementation of the calming room and school garden not only benefited individual students in their learning engagement and behavioral regulation but also improved the overall school environment and promoted community involvement.

These results demonstrate the multilevel positive impacts of this partnership. By taking a socio-ecological approach (Bronfenbrenner, 1979) and intervening with children across multiple levels, the program was successful in supporting positive school experiences for children and creating a more supportive school learning environment. Interviews with teachers and staff suggested that the partnership was broadly successful in supporting positive school experiences for children. Though this was not measured as part of the present study, previous research demonstrates that such experiences can promote resilience in children experiencing stress (Liebenberg et al., 2016; Sharkey et al., 2008). Interviews also suggested that the partnership supported other conditions that can serve as protective factors for children, such as more positive interactions with teachers and school staff (Baker, 2006; Johnson, 2008) and improved emotional and behavioral regulation (Masten, 2001, 2004; Zhang et al., 2019). Taken together, these findings suggest that the project was successful in supporting resilience in the school's students.

Beyond the evaluation results presented above, there is also anecdotal evidence that the partnership supported students' and families' access to healthy foods. Apart from the teacher and staff, several key community partners were also interviewed. While not part of a formal analysis, their comments add insight into the impact of this partnership. One staff member involved in the

cooking classes that were offered with both parents and children noted, “[Parents] absolutely love it....They really like to be involved and to be engaged.” Similarly, a local police officer who helped with the garden during the summer noted that the garden provided community members with fresh vegetables and allowed her to make positive community connections. She said,

I’m one of the officers that reach out a lot to the community to get involved....I’d stop in [the garden] and pull some weeds every once in a while...[or to gather] kids and parents throughout the community, telling them about the garden, ‘cause they weren’t aware of this garden here, and bringing them here, either giving them a ride or meeting them here. I’d give them brown paper bags that I carry with me...and say, you know, ‘Pick the vegetables and the fruits. Just fill up your bag.’ And that’s what they did. I told them, ‘You’re welcome to come back throughout the summer and keep picking...’ It seems like every interaction I had was very beneficial.

The wrap-around programming and partnerships at the school have supported parents and guardians in becoming more involved in the school community.

### **Implications**

The results described here have a number of implications. First, these results support the potential impact of school-based intervention efforts that address multiple aspects of child development. According to teacher and staff reports, this partnership was successful in supporting children’s well-being and increasing school-community connections. Other schools facing similar challenges may also benefit from creating trauma-sensitive learning spaces outside of the traditional classroom environment to meet diverse learning needs. Additionally, teachers and staff reported benefiting from opportunities to work with students in environments outside of the traditional classroom.

Future research should examine how the creation of physical spaces to promote other types of learning opportunities for students and teachers may shift the overall school climate in a way that can create more supportive learning environments. Addressing nonacademic aspects of well-being can remove barriers that may prevent children from succeeding academically, further supporting their resilience.

Second, this partnership sought to enact change across multiple levels to best support students, yielding perceived outcomes with students themselves, their teachers, the school environment, and the broader community. These broad impacts speak to the benefits of targeted, multilevel interventions that support students across multiple domains. Administrators and policymakers should direct resources toward similarly targeted, in-depth interventions to effect change across multiple levels.

Finally, the success of this partnership likely lies in large part with the fact that the areas of need were largely driven by the school, not by Extension CYFC. In implementing the calming room, garden, and wrap-around programming, the partnership addressed those areas of need identified by those most familiar with the school and its students, building upon the strengths of the school, families, and communities. Equipping the schools with the resources needed to meet the diverse needs of their students is critical in best supporting students.

### **Limitations**

While the data presented here provide compelling evidence of the impact of this partnership from the perspective of teachers and staff, the perspectives of parents, students, and community members are largely lacking. Unfortunately, time and financial demands prevented the evaluation team from expanding formal data collection efforts beyond teachers and school staff. It should be noted that informal parent interviews were also conducted as part of the internal evaluation of this program; however, those data are not included here due to concerns over parents' understanding of the questions (i.e., translators were used, and the evaluation team discovered that some questions were confusing or misphrased when translated) and the lower level of methodological rigor with which those interviews were conducted (i.e., without recording/formal transcription). In the future, similar efforts would benefit by formally collecting evaluation data with other groups of stakeholders (e.g., parents, community members, students themselves).

Additional limitations concern the reliability of the data collected from teachers and staff. Although a structured internal reliability process was followed with this data, strategies typically used to externally validate qualitative interviews were not used (e.g., triangulation of sources, member checks). A further benefit of collecting data from additional program stakeholders is that this would have provided the opportunity to triangulate findings across multiple sources. Future work would benefit from incorporating multiple data sources and member checks of coded themes in analyzing community-based program impacts.

### **Conclusion**

This work describes the interplay between three main activities: (a) the creation of a calming room for students to regulate emotional or behavioral outbursts; (b) the creation of a community garden for use by students, staff, and the surrounding community; and (c) wrap-around educational programming for teaching staff and families. Results suggest that the activities carried out at the school with Extension CYFC created impacts across multiple levels. The partnership developed engaging, creative learning environments that supported student well-being to reduce barriers to academic success. As one school administrator noted, "Between the trauma work, [the mental health services], and the grant, it's just been really powerful for our kids."

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