



# The Impact of a Yoga Curriculum Intervention on Pre-Service Teachers' Perceived Self-Efficacy, Experience, and Value

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## **Abstract**

Over the past decade there has been an increase in K-12 schools integrating yoga and mindfulness as a tool for improving children's overall well-being. However, one of the main barriers to effectively providing such mechanisms in the classroom is teachers' self-efficacy and preparation to implement children's yoga. To address this barrier the present study integrated a yoga curriculum grounded in developmentally appropriate practices for children's yoga as part of a required wellness integration course in a teacher education program. A pre- and post- survey was administered to pre-service classroom teachers (PCTs) to determine the impact of the yoga curriculum intervention on PCTs self-efficacy, experience, and value. Findings revealed that PCTs self-efficacy significantly increased pre- to post-intervention, while experience and value increased at more moderate levels. These findings suggest that PCTs may be more effective, willing, and able to integrate children's yoga into the classroom when provided opportunities to participate in developmentally appropriate yoga practices embedded in teacher preparation coursework.

**Keywords:** yoga, mindfulness, pre-service classroom teachers, teacher education, well-being

## **Introduction**

Yoga is a holistic practice intended for all ages that can improve one's physical and mental health (Belfer & Shurtleff, 2021). It also serves as a mechanism for coping with stress and anxiety (Ferreira-Vorkapic et al., 2015). Research indicates that contemplative practices, such as yoga, have gained momentum and popularity amongst all age groups across the Western world (Francesconi, 2017). Taylor et al. (2018) supports this notion by stating that mind-body awareness programs are being offered within university and K-12 settings to educate students and teachers on mindfulness, posture, and breathing techniques. As a result, the importance and regular practice of physical and mental health balance is acquired. Mindfulness-based interventions such as yoga aim to not only improve behavior and one's flexibility but also to normalize dialogue around mental health (Hosan et al., 2022).

## **Differences between children's and adult yoga**

While yoga is beneficial to one's mental and physical health regardless of age, the planning and practice look different from childhood to adulthood (Davis, 2022; Felver et al., 2020; Tripathi et al., 2017; Weggelaar, 2023). When children participate in a yoga session the activity may only last a total of 5-7 minutes for very young children and 15-30 minutes for elementary-aged children. The goals of children's yoga include improving self-regulation, expanding one's attention span, and increasing engagement levels and creativity (Davis, 2022; Razza et al., 2019). Children's yoga also focuses on safety and developmentally appropriate practices while providing a space for children to verbally and

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non-verbally (e.g., through physical movement) express themselves as individuals in a safe community space. When planning yoga for children, the directions must be clear and concise so they can mirror the teacher, yet the activity must vary enough to be entertaining and exciting to hold children's attention span (Davis, 2022; Weggelaar, 2023). Conversely, adult yoga sessions occur over an hour-long class in a safe quiet environment allowing for adults to focus on their inner-self while working to release and manage the stressors in their life (Wang & Szabo, 2020). However, Kramer-Kostecka et al. (2022) notes that while many adults are interested in yoga due to its focus on mindfulness and spirituality, some can be deterred from yoga due to the stereotypical lanky and thin body type typically associated with it.

### **Yoga and social-emotional skills**

Many schools are beginning to introduce breathing exercises, yoga, and mindfulness practices as holistic interventions for children to manage their stress. Findings reveal that such strategies can improve social-emotional skills (Dewhirst & Goldman, 2018; Tripathi et al., 2017). A systematic review of the literature on yoga and mindfulness practices for preschool children indicated improvements in both self-regulation and executive function (Sun et al., 2021). Similarly, Razza et al. (2019) found that preschool children's self-regulatory skills were strengthened and behavioral regulation increased when yoga was practiced in the classroom. Norton and Griffith (2020) revealed that teachers claimed to have a better rapport with their students and fewer discipline problems when yoga and mindfulness were utilized in the elementary classroom. In alignment with the research on yoga in the elementary classroom, middle school-aged students who participated in a yoga and mindfulness intervention self-reported higher emotional regulation and a decrease in levels of anger, depression, and fatigue (Felver et al., 2020). Wang and Hagins (2016) found similar findings in high school-aged students wherein yoga increased self-regulation, mindfulness, self-esteem, physical conditioning, concentration, and reduced stress. Accordingly, these factors positively impacted students' academic performance and personal well-being.

### **Pre-service teachers' exposure to yoga and mindfulness**

Although there are many known benefits to practicing yoga, classroom teachers may lack the knowledge and self-efficacy needed to effectively facilitate such practices in the classroom (Barcelona et al., 2022). For this reason, teacher investment must begin at the pre-service level with a focus on pre-service teachers' own mindfulness experiences and practices so that they may transfer these experiences and practices into their own classrooms (Hartigan, 2017). When pre-service teachers understand and experience the benefits of yoga, buy-in significantly increases (Klusman et al., 2023; Taylor et al., 2018). In agreement with this notion, Brown (2017) revealed that if a teacher was nervous or viewed mindfulness in an indifferent manner, after five to seven hours of participating in yoga and mindfulness interventions, they tended to view it more positively and started to identify preferred techniques.

It is important to note that there is still a large gap between teachers who wish to learn and implement social-emotional learning strategies, such as yoga, and their training to do so (Stipp, 2019). Pandit and Satish, (2013) share that few studies in teacher education programs aim to combine physical health, cognitive development, and emotional regulation as moving and interacting together. Demonstrating this lack of preparation at the pre-service level, Stipp (2019) revealed that pre-service teachers admitted they were more likely to practice yoga and mindfulness with children who were upset than with those who were calm. This anecdote suggests that techniques should be taught regarding how to utilize yoga and mindfulness with varying student behaviors (Dewhirst & Goldman, 2018; Hartigan, 2017; Rashedi et al., 2021; Stipp, 2019). Ultimately, more training and exposure are needed to provide pre-service teachers with the tools necessary to effectively integrate developmentally appropriate yoga and mindfulness strategies into their classrooms.

### **Building yoga into a pre-service teacher education course**

While the literature reveals the plentiful benefits of yoga for people of all ages, it is still a novel concept for implementation in teacher preparation programs and schools. Additionally, there is minimal literature revealing the impact of knowledge and training on developmentally appropriate yoga practices imparted within the teacher education setting. However, as teachers choose to leave the field at an alarming rate across the United States (Schonert-Reichl, 2017), an intensifying movement for implementing research-based social and emotional wellness interventions in education has emerged (Diliberti et al., 2021). While administrators, policymakers, and teachers acknowledge the critical need for social-emotional learning (SEL), they face logistical challenges and barriers to implementing SEL such as a lack of resources, training, and teacher self-efficacy (Durlak et al., 2011).

### **Theoretical framework**

Some of the aforementioned challenges may be addressed by providing pre-service classroom teachers (PCTs) with many opportunities to practice pedagogical approaches to children's yoga during their undergraduate coursework (Schonert-Reichl, 2017). The ability to practice during coursework in teacher preparation is also known as practice-based teacher education (PBTE). Grounded in the notion that the focus of pre-service teacher learning should have more of an emphasis on the act of teaching as opposed to more traditional theoretical topics and content, PBTE purports that this approach supports exposure to the realities of the classroom (Forzani, 2014). An innate facet of this approach is the idea of practice-based learning, which connects theory and practice through a reflective process. Thus, pre-service teachers are permitted opportunities to practice, make mistakes, reflect on the connections or disconnections experienced within the context of teaching theories and methods enacted and then repeat this cyclical process. Ultimately, the goal of employing this theory into practice is to develop pre-service teachers who have the capacity to create, evaluate, redesign and strengthen their own practices over time. In the case of the present study, PCTs were provided many opportunities to teach children's yoga after learning about developmentally appropriate practices through a yoga curriculum integration. This connects directly to the concepts of self-efficacy and experience that were evaluated in the survey and acknowledged as critical in the aforementioned literature. Through these opportunities within the present study, it is the hope that when PCTs are exposed to practices that include wellness integration they establish values, beliefs, and instructional patterns that prioritize wellness during daily instruction. (Webster et al., 2019).

Therefore, the present study addressed the implementation of yoga into a required wellness integration course in a teacher education program for elementary, special education, and early childhood education majors to address the following questions:

1. What are PCTs' perceptions and beliefs about teaching children's yoga before and after a yoga curriculum intervention?
2. What are PCTs' perceptions about their self-efficacy to implement children's yoga in the classroom before and after a yoga curriculum intervention?
3. What are PCTs' experiences with learning about children's yoga?

### **Methodology**

#### **Procedures**

This study employed a quantitative approach to answer the research questions via a pre- and post-survey. Participants were PCTs enrolled in one section of a teacher education course, EDWP 341 (Wellness Integration for the Elementary Classroom), at a university in the southeastern United States (see Appendix A). Therefore, a convenience sample was utilized, as only one section of the course is offered each semester. Before implementation, Institutional Review Board approval was received

(protocol #22x-301), and consent and photo/video release forms were collected from the PCTs. After consent was acquired, PCTs completed a paper copy of a pre-yoga survey (see Appendix B) at the beginning of a class session (September 2022) before the yoga intervention began. The survey asked for demographic information from the PCTs. All of the participants were female (100%), and the ethnicity was 14% African American and 86% White. All participants were elementary education majors. When asked how far along in their major PCTs were, 36% identified as being in their first, second, or third semester, 50% identified as having four semesters or more, and 14% identified as being in student teaching during their final year of the program. All participants were asked to identify themselves anonymously on the survey by writing the first 2 letters of their birth month and the last 4 digits of their telephone number at the top of the survey. This assisted with matching responses from pre- to post-survey. Once the pre-survey was completed all PCTs participated in a yoga curriculum intervention from September-December 2022 within EDWP 341 that included discussion board posts and interactive videos on foundational yoga concepts and skills for their own practice and for teaching children (i.e., mind, body, breath, space and time, flow), participation in class sessions on children's yoga and SEL, the body and brain connection within the physical development (e.g., anatomy and physiology of children) portion of the class, the importance of children's yoga in relation to safety and developmentally appropriate practices, and components of a children's integrated yoga lesson. At the end of the semester, students created and taught a mini yoga lesson (7-10 minutes) to their peers (see Appendix C). Lastly, all PCTs completed the post-yoga survey during the final week of class in December 2022.

### **Data collection**

#### ***Yoga survey***

A survey adapted from Neal (2013) with a strong reliability of ( $a = .88$ ) was completed by PCTs before and after instruction on children's yoga in EDWP 341 to determine PCTs perceptions through the three sub-scales of self-efficacy regarding children's yoga (5 survey items), experience with factors related to children's yoga and SEL (3 survey items), and value of children's yoga and SEL (4 survey items) (see Appendix B). While the survey indicated internal consistency in Neal et al.'s study, reliability in the survey is not fully indicated. However, in a study by Wilcox (2009) it was noted that a trial of the survey was administered. Results were utilized to refine the survey and resulted in a few minor word changes. The survey consisted of 12 multiple-choice, Likert-type questions, with four or five responses possible for each of the survey items. The survey items measured PCTs understanding and experiences with different components of a topic.

#### ***Data analysis***

The survey included four and five-point Likert scale items with levels that indicated either the strength of importance, effectiveness, self-efficacy, or agreement (Wilcox, 2009). Three factors were determined as subscales and identified within the survey items as self-efficacy (5 items), value (4 items), and experience (3 items) as it related to children's yoga and SEL. To analyze the results, each item and PCTs responses were placed into an excel spreadsheet. Frequencies were determined and then percentages for each answer were averaged both pre- and post-survey to determine the difference in answers between pre- and post-intervention. Findings are described below regarding percentage increases in responses from pre- to post-survey. Additionally, to identify any significant differences between PCTs responses for each of the survey items, a paired samples *t*-test was employed. Results of the *t*-tests are outlined for each survey item in the findings section below.

### **Findings**

An analysis of PCTs self-efficacy, experiences, and value of children's yoga and SEL was employed in order to address the research questions outlined at the end of the literature review. Results

of the survey were placed into an excel spreadsheet and the sub-scale questions were paired and analyzed by determining the number of candidates that responded to an item and then comparing either an increase or decrease in the percentage that responded to the pre- to post-survey within each response. Once each question was analyzed, the sub-scale question response percentages were placed into three charts to show the pre-post response for items in the self-efficacy, experience, and value categories. Quantitative analysis via *t*-tests was also conducted to determine if there were any significant findings across the survey items from pre- to post-intervention.

### Self-efficacy

All five survey items under the self-efficacy subscale had responses ranging from not at all familiar to very familiar regarding PCTs self-efficacy about children's yoga and SEL. Findings from the analysis of percentages for each item are shown in each section below in addition to findings from the paired samples *t*-tests. Item 1 revealed an increase from pre- to post-survey of 29% in response to PCTs being confident in their knowledge regarding children's yoga and a 57% increase in response to being very confident with children's yoga from pre- to post-survey (item 1). A paired samples *t*-test revealed a statistically significant difference for item 1 from pre- ( $M = 1.7, SD = 0.7$ ) to post ( $M = 3.6, SD = 0.5$ ),  $t(13) = 10.5, p < .001$ . There was a 64% increase from pre- to post-survey regarding PCTs being very confident with teaching skills for SEL (item 2). A statistically significant increase for item 2 was also shown from pre- ( $M = 2.4, SD = 0.5$ ) to post ( $M = 3.6, SD = 0.5$ ),  $t(13) = 7.9, p < .001$ . The largest change within this subscale was an increase from 0% to 57% with the response very confident regarding how confident PCTs were with implementing yoga in a classroom (item 3). Results from a paired samples *t*-test also indicated a large significant increase for item 3 from pre- ( $M = 2.2, SD = 0.8$ ) to post ( $M = 3.5, SD = 0.7$ ),  $t(13) = 4.5, p < .001$ . Pre-service classroom teachers were also asked about their confidence in identifying research-based strategies for implementing children's yoga (item 4). There was an increase of 14% in the response to confident and an increase of 43% in very confident. Results indicated a large significant increase from pre- ( $M = 2.3, SD = 0.8$ ) to post ( $M = 3.4, SD = 0.6$ ),  $t(13) = 4.2, p < .001$ . The last item in this sub-scale addressed PCTs confidence in regard to developing an age-appropriate yoga lesson to implement in their classroom (item 5). Results indicated a 21% increase from pre- to post-survey regarding PCTs identifying that they were confident and a 46% increase in responses to very confident. The paired samples *t*-test for this item revealed a large significant increase from pre- ( $M = 2.4, SD = 0.9$ ) to post ( $M = 3.5, SD = 0.5$ ),  $t(13) = 4.8, p < .001$ . While all questions revealed a large significant increase, question one revealed the largest increase in responses from pre- to post-survey.

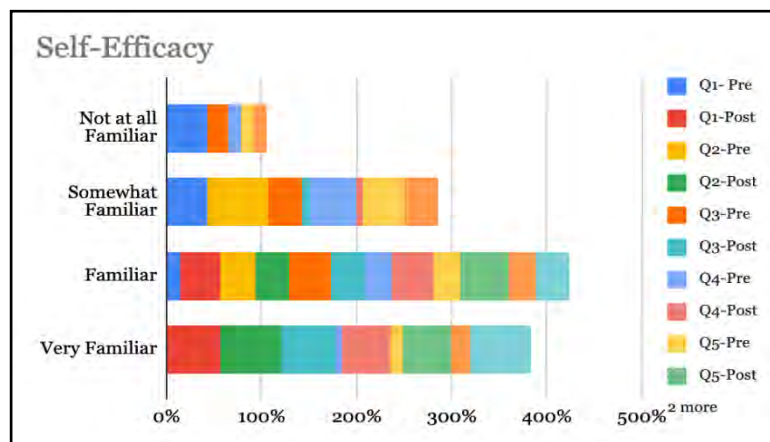


Figure 1. Self-Efficacy Pre- and Post-Survey Responses



## Experience

Within the experience survey items, PCTs were asked to respond to questions regarding their experiences with SEL in their teacher preparation coursework, field-based experiences, and their own experiences through study and readings (see Figure 2). Responses within the experiences sub-scale ranged from never to all the time. With regard to item 6, which addressed PCTs' experiences with SEL and how much instructional time they had experienced, PCTs' responses to often, increased from 36% to 57% pre- to post-survey, and the response all of the time increased from 14% to 22%. In item 7, PCTs responded to how often they received social-emotional training in field-based experiences. Findings indicated that the PCTs' responses too often, remained the same at 21% and all the time increased pre- to post-survey from 0% to 29%. Item 8 within this sub-scale required PCTs to identify how often they engaged on their own with readings or personal study related to SEL. Responses to often remained the same both pre- and post-survey at 36% and all the time increased from 7% pre-survey to 21% post-survey.

Results of the paired *t*-test for this subscale revealed a non-significant medium difference. Item six results were pre- ( $M = 3.4, SD = 1.1$ ) and post ( $M = 3.9, SD = 0.8$ ),  $t(13) = 2.1, p = .055$ . Item seven results showed pre- ( $M = 1.8, SD = 0.8$ ) and post ( $M = 2.6, SD = 1.1$ ),  $t(13) = 2.3, p = .040$ . Lastly, question eight revealed pre- ( $M = 2.4, SD = 0.8$ ) and post ( $M = 2.8, SD = 0.8$ ),  $t(13) = 2.1, p = .054$ . Overall, the largest increase was in question seven

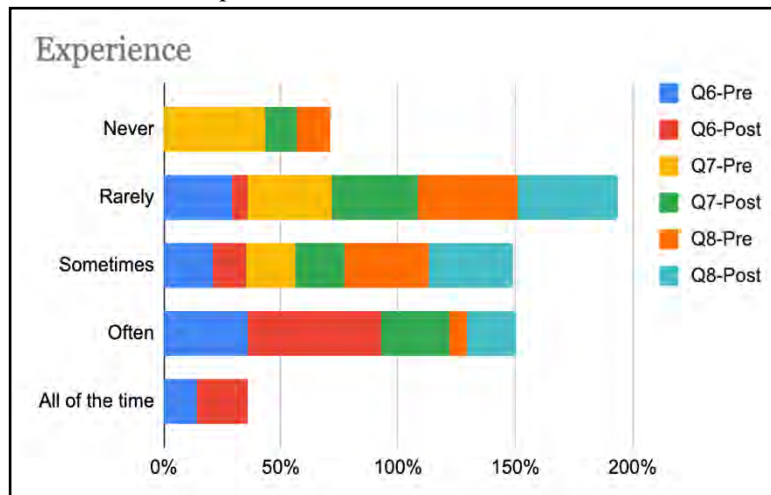


Figure 2. Experience Pre- and Post-Survey Responses

## Value

There were four questions within the value sub-scale of the survey (see Figure 3). Item 9 asked PCTs to respond to whether or not children's yoga is beneficial for students in the classroom. Responses ranged from strongly disagree to disagree, with agree decreasing from 29% to 14%, while strongly agree increased from 71% pre-survey to 86% post-survey. Results from the paired samples *t*-test for this question revealed a non-significant small difference from pre- ( $M = 4.7, SD = 0.5$ ) to post ( $M = 4.9, SD = 0.3$ ),  $t(13) = 1.4, p = .189$ . The prompt in item 10 addressed how important it is for schools to use SEL tools, such as children's yoga. Responses ranged from not at all important to very important. Pre-service classroom teachers' responses decreased from 14% important to 0% important and increased from 86% very important to 100% important post-survey. There was a non-significant small difference between from pre- ( $M = 4.9, SD = 0.4$ ) to post ( $M = 5, SD = 0$ ),  $t(13) = 1.5, p = .165$ . In item 11, PCTs responded to how important it is to train students in SEL practices. The response of important decreased pre- to post-survey from 29% to 7%, while very important increased from 71% to 93%. This resulted in a non-significant small difference between from pre- ( $M = 4.6, SD = 0.5$ ) to post ( $M = 4.9, SD = 0.3$ ),  $t(13) =$

1.7,  $p = .104$ . The final question on the survey addressed how favorably they think university students view children's yoga and other SEL strategies for the classroom. Responses ranged from very unfavorably to very favorably, with 14% responding to neither unfavorably nor favorably both pre- and post-survey, favorably decreased from 64% pre-survey to 36% post-survey, and very favorably increased from 22% to 60% pre- to post-survey. Results of the  $t$ -test revealed a non-significant small difference for this question between before ( $M = 4.1$ ,  $SD = 0.6$ ) and after ( $M = 4.4$ ,  $SD = 0.7$ ),  $t(13) = 1.5$ ,  $p = .165$ .

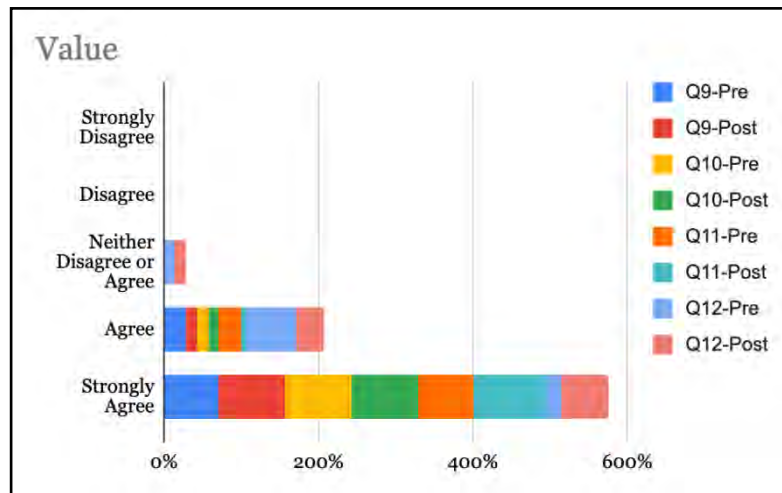


Figure 3. Value Pre- and Post-Survey Responses

## Discussion

Findings from this study revealed outcomes in three areas as it pertains to PCTs' responses to self-efficacy, experiences, and value of children's yoga, pre- and post-intervention in a teacher education course. While the literature reveals the potential benefits of children's yoga (Razza et al., 2019; Sun et al., 2021) when implemented effectively, it was also noted that teachers self-efficacy is one of the largest inhibitors to implementing children's yoga in the classroom (Barcelona et al., 2022). Findings from the pre- and post-yoga survey indicated that after a semester-long yoga intervention, PCTs' responses regarding self-efficacy increased significantly. More specifically, the largest increase was in PCTs' responses to their knowledge about children's yoga. This is in alignment with the literature noting the importance of PCTs developing their own knowledge base of practice as well as practice for the classroom (Hartigan, 2017). Participants also indicated that they valued the place of children's yoga in the classroom more post-survey within the value survey item responses. This increase is in alignment with the literature which reveals that the more exposure to yoga and mindfulness interventions a teacher has the less nervous and more efficacious they become toward it, as well as starting to view it in a more positive manner (Brown, 2017).

Although PCTs' responses to self-efficacy survey items revealed the most significant increases across all sub-scales, it could be purported that PCTs already placed a high value on children's yoga and SEL interventions pre-intervention as well as had more experiences with yoga rather than having the belief (e.g., self-efficacy) that they could implement children's yoga in their classroom. This is important to note, as the responses were higher pre-survey for the experience and value survey items than for the self-efficacy survey items. This is novel to this study and supports the notion that integrating wellness strategies into PCTs coursework supports not just their beliefs and experiences with it, but their self-efficacy for teaching children's yoga too. This significant increase revealed in the PCTs' responses to the self-efficacy questions is critical, as Webster (2019) noted that when PCTs are exposed to such wellness practices during their education preparation coursework they are more likely to implement them into their daily instructional practices once in their classrooms. Thus, suggesting that while PCTs

value and have had experiences with children's yoga and SEL interventions, it is not until their self-efficacy increases in such practices that they can effectively instill these practices in their classrooms.

Another important finding was that the responses to the experience survey items revealed a non-significant medium difference. The largest differences were found in item 6, which asked about PCTs experiences with SEL in coursework, and question seven, which asked PCTs to respond to their experiences in fieldwork (e.g., practicum, class observations). Item 7 showed the largest increase in response with PCTs indicating an increase in their experiences related to SEL learning and children's yoga in their fieldwork. This novel finding suggests that PCTs either recognized the exposure as a possible result of participating in the EDWP integrated coursework or they may have sought out experiences to try children's yoga in their field placement as a result of participating in the yoga intervention throughout the semester. Perhaps, this increase may even be an indicator of PCTs buy-in regarding the use of children's yoga in the classroom. This is in direct alignment with the literature that notes when PCTs understand and experience the benefits of yoga, buy-in significantly increases (Klusman et al., 2023; Taylor et al., 2018).

As aforementioned, the smallest increase in survey item responses was seen within the sub-scale of value. These findings are not surprising, as the literature does note that PCTs usually do believe in the importance of physical activity for children (Sun et al., 2021), but they often lack the experience and self-efficacy to transfer it into their classrooms. This gap between being able to "know and do" in the literature is significant between teachers who wish to learn and implement SEL strategies such as yoga, and their training to do so. There are minimal teacher education programs that aim to expose PCTs to coursework focusing on all of the developmental domains simultaneously while revealing improvements in academics (Stipp, 2019). Perhaps, coursework, such as the EDWP yoga intervention may be a way to slowly close the gap between teachers who wish to invest in SEL strategies such as children's yoga and those who actually have the capacity to transfer it with effectiveness into their classrooms.

### **Limitations**

While the findings of this study are certainly positive, the researchers acknowledge that it is not without limitations. One limitation of this study is that it was confined geographically to one state in the southeastern United States and more specifically to one class in a teacher education program. Additionally, the sample size was small, as the researcher chose to utilize a class wherein it was feasible to add yoga to the curriculum. A final limitation of this study is that data were collected solely from the pre- and post-survey, which did not enable any nuances regarding participants' thoughts about children's yoga to be explored through qualitative measures.

### **Future research**

In regard to future research, it would be beneficial to survey a larger group of PCTs and to follow this intervention longitudinally to identify the impacts on teachers once in the field. Another area to explore might be to interview students, both pre- and post-intervention to capture their thoughts, ideas, and stories about children's yoga and participation in a curriculum intervention. This might help corroborate the quantitative findings. Finally, it would be useful to determine the impacts of the intervention between different majors in education. This study was limited to elementary education majors who enrolled in the course, but it would be of interest to analyze the outcomes with special education and early childhood education majors who are also eligible to take the course examined within this study.



## Conclusion

It is increasingly evident that adult yoga has emerged as a popular mechanism across the United States over the past few decades for improving one's mental and physical health. This shift has also provoked an increasing popularity in children's yoga practice, with a variety of companies, schools, and other platforms focused on providing children's yoga and mindfulness as a tool for improving children's well-being. With this in mind, it is critical to acknowledge that the practice of children's yoga is inherently divergent from the practice and space utilized during adult yoga. While many schools aim to increase social-emotional skills through programs that incorporate yoga and mindfulness with good intentions, the fact that there is a gap of knowledge in teachers' capacities to effectively incorporate yoga for children in a developmentally appropriate manner must be addressed. Thus, to work toward closing this gap, education preparation programs must seek ways to provide applicable courses and methods to assist with training PCTs who wish to employ such methods in their classrooms. While exposure to children's yoga and SEL strategies and the value placed on such tools emerged as already inherent to participants in the study, novel findings revealed that implementing an intervention aimed at closing the training gap that is grounded in the foundations of teaching children's yoga can readily prepare PCTs to implement it with an assemblance of self-efficacy. Ultimately, providing PCTs with a tool to employ in the classroom that can assist with improving the well-being of the children they work with each day.

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