

Supporting Young Children's Executive Function Skills Through Mindfulness:

Implications for School Counselors

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Abstract

Shifting federal educational priorities and increased funding for pre-K means that more school counselors are interacting with and supporting children before kindergarten age in public school settings. One potential area of focus for school counseling with young students is executive function (EF), including emotional and behavioral regulation, noted in the research literature as essential skills that contribute to later school success. This position paper outlines the importance of EF and implications for school counselors, including using mindfulness as an intervention strategy to enhance young learners' EF in individual and group contexts as part of a school counseling program.

Keywords: executive function, mindfulness, young children

Supporting Young Children's Executive Function Skills Through Mindfulness: Implications for School Counselors

In the United States, attention to kindergarten (K)-readiness and school success is widespread, evidenced by federal funding opportunities for public preschool programs intended to support young children's physical, social, emotional, and cognitive development (U.S. Department of Education and Department of Health and Human Services, 2014). With more public preschool programs operating in K-12 systems across the country, school counselors are in the unique position of responding to a broad range of students' developmental needs in their school environments. Although school counseling preparation programs and accreditation standards include some emphasis on child development in all domains of well-being (American School Counselor Association, 2012), a clearer understanding of young children, especially regarding strategies to support social and emotional competence in general, and executive function (EF) skills, may maximize the impact school counselors have on students. The importance of children's EF skills as indicators of school success (Ashdown & Bernard, 2012; Schultz, Richardson, Barber, & Wilcox, 2011; Zins, Bloodworth, Weissberg, & Walberg, 2007; Jacob & Parkinson, 2015; Galinsky, 2010), are summarized and followed by a discussion of the implications for school counselors. Using mindfulness as an intervention strategy to build EF skills is suggested as a practical application for school counselors working with young children in public schools.

Executive Function as a Foundation for School Success

Early childhood, widely accepted as the period of growth and development between birth and age eight, is a time of dynamic connections that exist between and

among children's cognitive, physical, social, and emotional capacities (Copple & Bredekamp, 2009). In other words, development in these domains is interrelated; learning that occurs in one domain is influenced by and influences learning in the other domains. For example, children's ability to regulate their behaviors and impulses when interacting with others greatly influences their capacity to learn new information (Martin et al., 2015). Inhibitory, or impulse, control emerges in early childhood and has a profound effect on many essential skills of childhood, including the ability to focus, solve problems, and become a self-directed learner (Galinsky, 2010). This group of skills, which represent the intersection between social, emotional and cognitive skills, are part of a child's executive function, which is needed to succeed in school and in life (Jacob & Parkinson, 2015; Kern, Friedman, Martin, Reynolds, & Luong, 2009).

According to Harvard University's Center on the Developing Child (n.d.), children are not born with EF skills. Rather, these skills, managed by the prefrontal cortex (often referred to as the brain's control center) develop during rapid brain growth in early childhood and do not mature until early adulthood (Galinsky, 2010). Therefore, young children's experiences, relationships, and contexts for learning influence the development of EF skills. EF skills help children develop teamwork, leadership, and the ability to recognize and respond to their own and others' emotions, thus weaving together their social, emotional, and cognitive skills. Further, EF includes the ability to avoid distractions, remember and follow multi-step instructions, cope with changing routines, and demonstrate persistence. For example, McClelland and Cameron (2019) explain:

Children use EF when they focus their attention on a puzzle, remember the steps in completing the puzzle, switch attention when their caregiver or teacher tells

them to do something else, and demonstrate inhibitory control to stop and put away the puzzle before it is finished. EF is also used when children must persevere to finish the puzzle before playing with a new and attractive toy. (p. 143)

In everyday routines, children must solve problems, plan, and complete tasks by learning to control their thoughts, feelings, and behaviors, thus demonstrating strong EF skills to become more self-directed, self-regulated, and successful learners.

Implications for School Counselors

The American School Counselor Association (ASCA) *Mindsets and Behaviors for Student Success: K-12 College- and Career-Readiness Standards for Every Student* (ASCA, 2014) suggests that school counselors assess student growth and development by using the standards as a curricular guide to create and deliver an effective school counseling program. The framework outlines thirty-five different aspects of student attitudes, knowledge, and skills. Mindsets and behaviors are organized into learning strategies, self-management skills, and social skills to support student success. For example, self-management skills in the behavior domain include demonstrating self-discipline and self-control as well as delaying gratification and demonstrating the ability to manage transitions. These skills are also important aspects of EF that can be nurtured by school counselors as part of a comprehensive school counseling program.

However, this framework does not reference children before kindergarten entry, although the National Institute for Early Education Research (NIEER) reported nearly 1.5 million four-year-olds in the United States were enrolled in state-funded pre-K or special education programs in elementary school settings in 2017-2018 (Friedman-Krauss et al., 2019). Therefore, consistent with the ASCA National Model for school

counseling programs (ASCA, 2012), school counselors are encouraged to collaborate with school personnel to support students of all backgrounds, ability, and skill levels by delivering interventions and supports that directly promote student achievement.

Specifically, school counselors can support young children by understanding the role of EF to school success and by implementing preventative and intervention strategies, such as mindfulness, that are focused on building EF skills.

Mindfulness as an EF Intervention Strategy

Mindfulness can take on many forms (e.g., breathing, movement or yoga, gratitude, etc.), but at its core it is conceptualized as the process of paying attention to the present moment (Kabat-Zinn, 2013). Research suggests that mindfulness can decrease externalizing behaviors (Lee, Semple, Rosa & Miller, 2008; Schonert-Reichl & Lawlor, 2010) and stress levels (Mendelson et al., 2010) in youth. Among school-aged children, mindfulness has also demonstrated effectiveness to promote EF skills (Flook et al., 2010). Specifically, the EF skills of self-regulation (Burke, 2010; Greenberg & Harris, 2012; Viglas & Perlman, 2018), attention (Emerson, Rowse & Sills, 2017; Napoli, Krech, & Holley, 2005; Saltzman & Goldin, 2008; Schonert-Reichl & Lawlor, 2010), and social skills (Napoli et al., 2005; Schonert-Reichl & Lawlor, 2010; Viglas & Perlman, 2018) have been linked to mindfulness. Despite the many identified benefits of mindfulness, it is rarely part of a public-school curriculum (Flook, Goldberg, Pinger & Davidson, 2015) perhaps because it shares some commonality with Buddhist meditation. However, Buddhism is a religion and, as described in both the literature and this position paper, mindfulness is a secular practice (Cullen, 2011; Greenland, 2010; Roeser & Peck, 2009).

Using Mindfulness in a School Setting With Young Children

Flook et al. (2015) used a treatment and control group methodology to analyze the effectiveness of a mindfulness-based curriculum (Kindness Curriculum, 2013) implemented by trained mindfulness instructors with seven preschool classrooms in six different elementary schools in the Midwest. The curriculum incorporated children's literature, music, and movement to teach kindness, compassion, empathy, gratitude, and sharing. Mindfulness lessons were delivered to the experimental group twice a week for twelve weeks. Each lesson lasted 20-30 minutes, totaling ten hours of intervention. Pre- and post-intervention data were collected from teachers using a social competence scale comprised of prosocial behavior and emotional competence subscales. Sharing, delayed gratification, cognitive flexibility, and inhibitory control tasks were also administered to children before and after curriculum implementation to determine differences, if any, between the control and experimental groups. Results indicated that the greatest impact and positive effect of the curriculum were experienced by children at the lowest levels of baseline functioning. Further, *between-groups* analysis revealed that the experimental group showed greater social competence and more sharing behaviors than the control group, thus providing evidence that curriculum intervention can support the development of EF skills.

Poehlmann-Tynan et al. (2015) examined the preliminary effects of a mindfulness curriculum intervention on preschool children's empathy and self-regulation using a pre-, post-, and post-post research design. Economically disadvantaged children in five federally-funded preschool classrooms were randomly assigned to a twelve-week intervention or control group. The mindfulness curriculum (the Kindness

Curriculum, 2013) was adapted for the study. Trained instructors were required to have an extensive history with meditation and mindfulness (5-10 years of daily practice). Lessons were delivered twice per week for 20-30 minutes per lesson, and the same lesson format was followed for each lesson. First, children gathered at the *classroom meeting rug* and came to each lesson after hearing the chime of a bell to signal quiet listening. After taking three deep breaths together as a group, one child was selected to sign and verbalize a wish for everyone's happiness. Then, the instructor reminded the children about their previous lesson and connected it to the current lesson. A story was read aloud and a movement activity followed. Finally, the group came back together for a restful breathing activity while listening to a song. A final ring of the bell indicated the end of the lesson. College student mentors assisted with the lessons by helping children stay on task. Classroom observation, teacher interview, and EF skill assessment data were collected and analyzed to determine if the curriculum intervention impacted children's empathetic and compassionate behaviors as well as improved their self-regulation and EF skills. The researchers concluded that movement-based experiences are important to help children maintain focus and engagement in the lessons and that modifications to the curriculum could address children's developmental needs. Skill assessment results suggested that children who participated in the mindfulness lessons significantly improved their self-regulation skills at pre- and post-measurement, and they also sustained the improvements over time.

Lemberger-Truelove, Carbonneau, Atencio, Zieher, and Palacios (2018) investigated social and emotional learning among low income three- and four-year olds attending a summer child-care program, hypothesizing that mindfulness-based

interventions may maximize children's learning and behavior habits. One of the authors developed the mindfulness-based, social-emotional curriculum and another author (an experienced counselor with a record of working with young children) delivered the lessons. The sample of the study was one classroom of children, separated into control and experimental groups. Lessons were delivered to eleven children in the experimental group for forty minutes four days per week over eight consecutive weeks. Each lesson began with a song, breathing practice, and movement activity, followed by didactic instruction of a specific social-emotional or mindfulness skill, and concluded with conversation about how the lesson could be applied throughout the day. Breathing and movement ended each lesson. Data suggested that the intervention improved children's engagement and behavior control, but it was not a significant influence on peer interaction and self-regulated attention. This result may have been due to small sample size. Qualitative observations, however, seemed to suggest that children used the skills presented in the lessons over time. Therefore, the authors concluded that combining social emotional learning with mindfulness based interventions may maximize young children's development.

In summary, mindfulness studies conducted in preschool settings with young children ranging from three to five years of age revealed that participating children were more prosocial overall (Flook et al., 2015), such as being more willing to share (Flook et al., 2015), and using verbal statements of kindness (Lemberger-Truelove et al., 2018). Other aspects of EF, such as delay of gratification (Flook et al., 2015), emotional regulation (Flook et al., 2015), behavior control (Lemberger-Truelove et al., 2018), and attention (Lemberger-Truelove et al., 2018) were also measured and reported as

positive outcomes of using mindfulness with preschoolers. Consistency across the studies reported in this paper include training and instructor preparation requirements, similar frequency and duration of curriculum implementation, and establishing a predictable lesson routine. Each study used music and/or breathing to transition the children to the mindfulness lessons, followed by explicit instruction and/or book reading, then engaging the children in a movement activity. Combined, these studies suggest that mindfulness-based practices can be implemented in developmentally appropriate ways with young children to positively influence aspects of EF and other skills associated with school success (Erwin, Robinson, McGrath & Harney, 2017; Flook et al., 2015).

Practical Application for School Counselors

Given the collaborative nature of the work that school counselors do, partnering with teachers (Calvery & Hyun, 2013; Sink, 2008) and families (Epstein & Van Voorhis, 2010; Trusty, Mellin, & Herbert, 2008) is recommended to effectively use mindfulness to promote children's EF skills. Incorporating mindfulness through collaboration could help teachers find interventions that can help children who are struggling in their primary classrooms, while collaborating with families can help support the home-school connection. School counselors' personal connections to mindfulness could also maximize the benefits of using mindfulness in a school setting (Roeser & Peck, 2009).

Teacher Collaboration

The ASCA (2012) model for school counseling programs asserts that an appropriate activity for school counselors is to collaborate with teachers to present school counseling core curriculum lessons. While many of the mindfulness-based

practices outlined in the research for children and youth are carried out by mindfulness coaches or instructors, these practices can also be led by school counselors (Lemberger-Truelove et al., 2018; Napoli et al., 2005). Capel (2012) recommended that mindfulness lessons should be aligned to a school curriculum that is being used to guide children's learning to be most effective. Curriculum alignment may result in greater willingness by teachers to partner with school counselors. Therefore, one way to collaborate with teachers to maximize the impact of using mindfulness with young children is to identify and incorporate ASCA mindsets and behaviors (ASCA, 2014) with standards of early learning and development, particularly those concentrated to focus attention, promote self-regulation, recognize and name emotions, and solve problems.

Early learning standards, such as the Head Start Early Learning Outcomes Framework (Administration for Children and Families, 2015), are built upon a comprehensive body of research that describes the skills, behaviors, and knowledge all children should have to succeed in school. The Head Start framework is organized into five domains: approaches to learning; social and emotional development; language and literacy; cognition; and perceptual, motor, and physical development. Sub-domains, goals, developmental progressions, and behavioral indicators are also included to further detail child outcomes. Specific goals could be selected by teachers and school counselors as part of lesson planning and implementation.

Head Start goals aligned with ASCA mindsets and behaviors that could be met in mindfulness lessons include increasing ability and independence regarding:

- following classroom rules and routines
- controlling impulses

- managing actions, words, behavior, and emotions
- demonstrating flexibility in actions, thinking, and behavior
- maintaining focus and sustaining attention
- persisting in tasks

Individual and Group Work

School counselors can incorporate mindfulness practices in various ways with young children in the school setting; this could include working one-on-one with a child, implementing small-group sessions, and teaching students in a classroom context. Roeser and Peck (2009) and Lillard (2011) suggested that school-age mindfulness practices may need to be adjusted for preschool children, such as the use of children's literature and music (Flook et al., 2015), sensory experiences (Flook et al., 2010; Greenland, 2010; Lillard, 2011; Schonert-Reichl & Lawlor, 2010; Willard, 2010), and guided breathing exercises (Flook et al., 2010; Greenland, 2010, 2016; Mendelson et al., 2010; Schonert-Reichl & Lawlor, 2010; Willard, 2010).

Individual and small-group lessons could include shared book reading and book talks using carefully selected titles, such as *The Way I Feel* by Janan Cain and *In My Heart: A Book of Feelings* by Jo Witek. Sharing stories together could help the school counselor form strong and positive relationships with students by focusing on the messages and imagery used in books about recognizing and naming emotions. Guided breathing activities, such as pretending to smell a flower by inhaling through the nose or pretending to cool down a hot cup of soup by exhaling lightly through the mouth, can also be implemented in one-on-one or small group settings (Greenland, 2016). The

Head Start Early Learning Outcomes Framework (Administration for Children and Families, 2015) explained:

Developmental delays can impact children's social and emotional development, including the ability to engage in reciprocal interactions and to regulate their emotions. Adults can use puppets to help children engage in back-and-forth interactions and to teach them how to demonstrate different emotions. (p. 30)

Therefore, school counselors could use puppetry to help children express and manage feelings as part of mindfulness lessons intended to support the development of EF skills.

Movement experiences such as yoga also encourage mindfulness and the development of EF skills (Tang, Yang, Leve, & Harold, 2012; Zelazo & Lyons, 2012) by integrating the emotional and physical aspects of the experience through poses, breathing, concentration, and awareness (Razza, Bergen-Cico, & Raymond, 2013). School counselors could use yoga poses in a large group context as part of a daily classroom routine. Encouraging children to notice the ways their bodies can stretch and move supports the development of children's ability to sustain attention and focus. Another opportunity to incorporate mindfulness in the classroom is to use intent listening to transition the group from one activity to another. Wind chimes, bells, and rain sticks engage the sense of hearing in a soothing and calm way and can create a consistent signal for children to recognize. Allowing children to take turns creating the sound further builds confidence and a sense of belonging in the group. In summary, mindfulness experiences should remain play-based, open-ended, and imaginative (Erwin et al., 2017) to be most effective with young children.

Working With Families

Greenland (2016) outlined six mindfulness themes for parents to explore with children: focus, quieting, seeing, reframing, caring, and connecting. For example, families can practice body awareness together by sitting tall, listening to breathing, and feeling the body relax. This type of self-focus readies children's and adults' bodies to be present and attuned to one another. School counselors can recommend activities like these based on children's needs to deepen family connections and to encourage the development of important EF and life skills.

Personal Connection to Social Emotional Learning and Mindfulness

Bowers, Lemberger-Truelove, & Brigman (2018) presented a social-emotional leadership framework for school counselors, asserting the importance of developing social-emotional leadership dispositions, including self-awareness, self-management, and social awareness. By demonstrating their own commitment to social-emotional learning, counselors could affect change in others, including educators and students in the school. Utilizing a leadership role, school counselors may be able to advocate for using mindfulness as a social emotional learning strategy, particularly when connected to ASCA mindsets and behaviors.

In line with others' recommendations (i.e., Roeser & Peck, 2009), it is suggested that school counselors practice mindfulness themselves before beginning and while supporting children and youth to engage in activities; this can help counselors to gain first-hand experience regarding aspects of mindfulness that they enjoy or feel that they benefit most from, as well as identify common challenges associated with mindfulness (e.g., abstaining from judgment or feeling like it should be done 'right').

Limitations and Considerations

Despite the growing interest in using mindfulness practices with young children, the available research to date regarding its use is limited (Flook et al., 2015; Greenberg & Harris, 2012; Lemberger-Truelove et al., 2018). Currently, research does suggest that the use of mindfulness practices may support many aspects of EF (Flook et al., 2015; Lemberger-Truelove et al., 2018); however, the most compelling research includes randomized controlled trials and multi-week standardized interventions which are most likely outside the realm of what is feasible for many school counselors. Therefore, mindfulness should be viewed flexibly as one of many ways that school counselors can support the development of young children's EF skills.

Summary

With increased national attention to preschool and early childhood education, school counselors are tasked with supporting the development of very young children in elementary school contexts. Research suggests that social emotional learning interventions delivered by trained school counselors can improve students' academic success (Bowers et al., 2018). Research also supports the influential nature that EF skills have on school success. School counselors can promote the regulation of emotions and behaviors with children and youth, even those as young as three to five years old. In particular, school counselors are encouraged to deepen their understanding of the role of EF to school success and implement preventative and intervention strategies focused on building particular EF skills, such as mindfulness, in collaboration with teachers and families.

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Biographical Statements

Christine Lux, Ed.D., is an assistant professor of the early childhood education & child services (ECE&CS) undergraduate program at Montana State University. Dr. Lux has more than twenty years of early childhood teaching and program leadership experience. For the past ten years, Dr. Lux has been a faculty member in the Department of Health & Human Development, serving as ECE&CS program leader since 2012. Her teaching and research are focused on early childhood professional preparation, play & learning in early childhood classroom and school-based contexts, and interdisciplinary early childhood curriculum development. An ongoing project is focused to promoting preschooler well-being through a collaboration with colleagues across the department, including graduate counseling program faculty. Additionally, Dr. Lux serves on numerous local and state committees to bridge the gap between early childhood and K-12 education by considering the multiple influences on children's success in school and life.

Kalli Decker, Ph.D., is an assistant professor of early childhood education & child services at Montana State University. Dr. Decker's professional and research experience has focused on supporting the development of young children through positive interactions with influential adults, including their families and many types of professionals. She regularly mentors masters-level counseling students who are interested in building their research skills. Dr. Decker's past and present teaching and research projects include a focus on the use of mindfulness to support pre-service professionals and/or young children.

Chloe Nease is a senior in early childhood education & child services program at Montana State University. As part of Dr. Decker's research team, Chloe has helped design and launch a research project intended to support professionals and young children through the use of mindfulness. She has worked in multiple settings with children with special needs, and is currently working in a special needs preschool. Chloe has also helped with research projects related to parents' and professionals' experiences of supporting children with special needs. The next step for her includes applying to a master's degree program in occupational therapy that will allow her to build on her skills related to supporting children with special needs and their families.