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Editorial Team

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Introduction

Tiffany Wilson, Editor

This Spring issue provides readers with an array of information that includes social and emotional learning, supporting students with learning disabilities, problem-based learning, and a male's perspective of working in early childhood education. The IJWC continues to be committed to promoting holistic learning and the development of the whole child.

Article #1:

Pre-Kindergarten Teacher's Perceptions of Social and Emotional Learning

Hillary Polchow Liesch, Karen Morrison, Rebecca Giles

The authors of this article conducted a study to investigate SEL perceptions of prekindergarten teachers in an American urban, public preschool serving predominantly Black students. Though the results were statistically non-significant, the findings of the current pilot study have important and practical implications for implementing SEL in prekindergarten. Findings suggest that regardless of position and educational level, both veteran and novice early childhood teachers could benefit from explicit SEL training and adequate time and opportunity to become confident in providing effective social and emotional learning in their early childhood classrooms.

Article #2:

Using Children's Literature as a Model for Problem-Based Learning

Katherine Mangione, Shannon Harmon

This article discusses how Problem-Based Learning (or PBL) is a teaching style that pairs beautifully with science and social studies. The authors detail how PBL allows students to drive their learning while providing autonomy to choose topics or issues that interest them. It scaffolds the development of desirable 21st century skills: collaboration, critical thinking, communication, creativity, flexibility, and higher levels of cognitive thinking. Using PBL can assist teachers and students in understanding the process and knowing where their work is taking them. This manuscript utilizes the children's book *Spring after Spring: How Rachel Carson Inspired the Environmental Movement* by Stephanie Roth Sisson (2018) and Design Thinking as a guide for implementing Problem-Based Learning with elementary level learners.

Article #3

One Male Student Teacher's Perception and Experiences of Student Teaching in an Infant Group Care Setting

Jeesun Jung, Eugene Geist

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teachers. The authors used the teacher's daily journal entries, four individual interviews, and weekly team planning meetings as data sources. The data was collected over 15-week period. Findings revealed that the teacher's caring sense gradually evolved through care practice and that he brought in his authenticity as a teacher, not just as a male teacher, while confronting with and critically reflecting upon himself as a teacher. Also, the weekly team planning meetings helped him build relationships with the female mentor teachers. He positively reflected upon his experiences of collaborative teaching. Implications of the findings are discussed in terms of male students in early childhood teacher education programs.

Article #4

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Lisa Morin, Jane Roitsch, Annemarie Horn

The authors of this study examined the results of the Behavior Rating Inventory of Executive Function (BRIEF-2) (Gioia et al., 2015) reported by parents of children with Specific Learning Disability (LD) and/or other comorbid disabilities. LD is most notably associated with comorbid attention deficit hyperactivity disorder (ADHD) (Alloway & Stein, 2014; Westby &Watson, 2004; Willcutt et al., 2013). A total of 43 parents completed the BRIEF-2 rating scale. Findings suggested children with LD and ADHD display greater challenges with inhibition, working memory, planning, along with greater challenges in organization and metacognition. Parents of children with LD reported their children have greater levels of executive function difficulties in comparison to children with LD who do not have a secondary diagnosis of ADHD.

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Leslie Trail, Nancy Caukin

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In the Children & Families: Health and Wellness article, "A Family Systems Approach to Addressing Depression in Children," the author discusses how structural family systems theory can be an effective approach to address depression symptoms in children.

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The data provided by the author in "Education by the Numbers" discusses how teacher absences can significantly impact student achievement.

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Brian Stone

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Page Turners: Books for Children
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Pre-Kindergarten Teachers' Perceptions of Social and Emotional Learning

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Abstract

Recognition of social and emotional learning (SEL), as an essential educational component, has increased in recent years, and early childhood educators' perceptions of SEL are likely to impact the delivery, evaluation, and outcomes of SEL opportunities for young children. The purpose of this pilot study was to investigate SEL perceptions of prekindergarten teachers in an American urban, public preschool serving predominantly Black students. Participant (n=22) responses to the Teacher Social and Emotional Learning Beliefs Scale (Brackett et al., 2012) were used to calculate mean scores for the domains of comfort, commitment, and culture, which were analyzed in relationship to the independent variables of teacher position (lead or auxiliary), level of education (associate degree, bachelor's degree, or graduate degree), and years of prekindergarten teaching experience (0-20 years and more than 20 years). While results were statistically non-significant, findings of the current pilot study have important and practical implications for implementing SEL in prekindergarten. Auxiliary teachers scored slightly lower in commitment and comfort domain than lead teachers, and teachers with a bachelor's degree scored highest on the comfort domain. Interestingly, experienced teachers (more than 20 years)

did not show a notable difference from those who have been teaching prekindergarten for much less time. Findings suggest that regardless of position and educational level, both veteran and novice early childhood teachers could benefit from explicit SEL training and adequate time and opportunity to become confident in providing effective social and emotional learning in their early childhood classrooms. Further research is needed to examine the effects of SEL training and coaching for prekindergarten teachers on the SEL of young children.

Keywords: SEL, preschool, early childhood, teachers, beliefs

Introduction

Access to public preschool throughout the United States has increased rapidly in the last decade, with states enrolling an average of 50% of four-year-old children across the country in 2017 (National Institute of Early Education Research, 2019). Similarly, there has been an increased emphasis on addressing young children's social and emotional well-being along with their cognitive development resulting in all 50 states adopting preschool social and emotional developmental standards (Weissberg et al., 2015). According to the World Economic Forum (2016) report, students will need more than traditional academic learning to be successful in the 21st century: "They must be adept at collaboration, communication and problem solving, which are some of the skills developed through social and emotional learning" (p. 4).

Social and emotional development is multi-faceted and comprised of a set of specific skills and abilities needed to set goals, manage behavior, and build relationships along with processing and remembering information, making it integral to academic success (Jones & Kahn, 2017). According to Collaborative for Academic Social and Emotional Learning (CASEL), social and emotional learning (SEL) can be defined as:

> [T]the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions (CASEL, 2021, para. 1).

The CASEL 5 framework targets five broad, interrelated areas of competence including self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. CASEL advocates the implementation of SEL using coordinated efforts involving the academic curricula, schoolwide practices and policies, and collaboration with families and communities for maximum benefit.

Recognizing social and emotional learning (SEL) as an essential learning domain in early childhood helps prevent emotional and behavioral problems and better prepares young children to address the learning and social challenges that they will encounter in later school years (Gunter et al., 2012); thus, the inclusion of SEL in prekindergarten curricula can foster positive attitudes towards school and long-term academic success (Cooper et al., 2014; Denham, 2016; Durlak et al., 2011; Gunter et al., 2012; Jennings & Greenberg, 2009; Ornaghi et al., 2017) while also playing a critical role in the acquisition of behavioral and self-regulation skills, which are

valued above academic skills by many kindergarten teachers (Soltero-Ruiz, 2013). Jones, Greenberg, and Crowley (2015) found statistically significant associations between measured social and emotional skills in kindergarten and key young adult outcomes across the spheres of education, employment, criminal activity, substance use, and mental health. Furthermore, SEL benefits far outweigh costs by a factor of 11:1 (Belfield et al., 2015).

Jones et al. (2020) found that the association between self-reported SEL competencies and self-reported grades was highest for White high school students as compared with all other racial groups. Researchers noted that "SEL that does not encompass awareness of power, privilege, oppression or culture can serve to perpetuate systems of oppression by contributing to deficit narratives and biased appraisal of students' behavior" (Jones et al., 2020, pp. 6-7). Further research is needed to assess the impact of SEL programs for diverse populations (Durlak et al., 2011; Gresham et al., 2017) as well as at various grade levels.

The most comprehensive review of school-based SEL interventions to date comes from Durlak et al. (2011), who conducted a meta-analysis of 213 programs including 270,034 students ranging in age from 5- to 18-years-old. Results supported the assertion that SEL programs in schools increase social and emotional competencies and have positive effects on student attitudes. Additionally, authors noted an 11-percentile gain in academic performance in a small subset of studies. Conversely, weak social and emotional abilities may result in social isolation, dislike of activities and people in the school environment, and lower level of support, leading to poor academic performance, grade retention, and school dropout (Denham & Brown, 2010; Rhoades et al., 2011).

Building on the work of Durlak et al. (2011), Yang et al. (2019) conducted a meta-analytic review of early childhood curricula for SEL in low-income student classrooms. Analysis found that curricula with a SEL focus had a robust impact on student social and emotional competency (SEC) outcomes, while curricula without a SEL focus had little to no effect on student SEC outcomes. Specifically, SEL focused curricula significantly reduced negative outcomes for low-income children's SEC development. Similarly, Calhoun et al. (2020) examined the impact of an SEL curriculum for low-income students across four data collection points spanning from the beginning of kindergarten to the middle of second grade. All children who received the intervention benefited significantly, regardless of baseline functioning.

The connection between language and social and emotional development for prekindergarten children with and without disabilities was established by Kerch et al. (2020). Researchers investigated the relationship between a child's social and emotional competencies and receptive vocabulary and differences in social and emotional competencies among students with and without disabilities. Pretest differences indicated that children with disabilities had lower self-control, more behavioral concerns, and fewer total protective factors while children with better receptive language scores showed more initiative, had more protective factors, and were less likely to have behavioral concerns. In terms of social and emotional competencies, differences between children with and without disabilities decreased significantly after nine months in a high-quality, inclusive prekindergarten setting including SEL standards.

Skills in social and emotional learning (SEL) may be developed through the prosocial skill set which encourage positive relationships through conflict resolution, effective communication, and perspective taking (Yoder, 2014). Early childhood teachers can capitalize on day-to-day interactions which provide opportunities to facilitate children's SEL. Ng and Bull (2018) noted that kindergarten teachers' support for SEL happened more often during small group activities than whole group activities with SEL activities most frequently occurring during outdoor play, followed by occurrences during lessons, meals/transitions, and learning centers. Teachers were observed using the following four strategies to facilitate SEL in their kindergarten classrooms: (1) setting a positive tone, (2) suggesting solutions, (3) allocating tasks, and (4) offering extensions.

Although early childhood teachers play an important role as mediators and are responsible for arranging meaningful social and emotional learning situations (Denham et al., 2012), preschool teachers report a lack of sufficient training to effectively help young children develop social and emotional skills (Bierman & Erath, 2006). With teachers playing a key role in children's SEL process, there is a need for greater attention to the practices of SEL in teacher preparation programs and continuing professional development initiatives (Zinsser et al., 2019). A SEL component in early childhood teachers' initial training could enable them to adopt a wide repertoire of strategies with the potential to enhance the involvement of families in children's development of social and emotional competences (Ferreira et al., 2021). Jennings and Greenberg (2009) offer the following recommendations regarding SEL for preservice teachers: incorporating teaching about SEL innovations in coursework, designing experiences where teacher candidates apply SEL initiatives in field work, providing a training program for teacher educators to develop a knowledge base in SEL, and placing interns with teachers who demonstrate SEL. The effective use of SEL education in preservice programs was linked to reduced teacher experienced job-related stress (Zinsser et al., 2019) prompting the suggestion for introducing secular contemplative practices like Transcendental Meditation (TM) and Mindfulness-Based Stress Reduction (MBSR) into teacher preparation programs as a means to facilitate future teachers' abilities to create classrooms that can support students social and emotional development and aid them in managing emotional conflict (Jennings & Greenberg, 2009).

Teachers' awareness, knowledge, and understanding of SEL impact their perceptions of the program and the effectiveness of their classroom interventions (Humphrey, 2013) while a teacher's own social and emotional competencies affect everything that happens in the classroom (Jones et al., 2013). Teachers with greater knowledge of SEL combined with increased confidence in, and commitment to, SEL programs are more likely to value SEL programs, hence, implementing them with fidelity (Schonert-Reichl, 2017). Zinsser et al. (2014) examined teachers' perceptions of SEL in the preschool setting using a mixed-methods approach. Researchers collected narrative data from focus groups as well as quantitative assessments of classroom environments. Researchers found that teachers' beliefs were related to social and emotional teaching practices. High scoring teachers differed from peers in terms of beliefs about emotions, beliefs about the value of SEL, the importance of discussing socialization practices and SEL strategies, and perceptions of a teacher's role as emotion socializer. Since understanding the differences in teachers' beliefs about SEL in preschool can help support teachers in increasing the quality of their interactions with students, Zinsser et al. (2014) called

for future research to investigate how to better support both pre- and in-service teachers in becoming positive emotion socializers and creating supportive learning environments.

Huynh et al. (2018) investigated perceptions of SEL of primary school teachers from two large cities in Vietnam. Results showed that teachers with higher levels of education had higher perceived levels of necessity of SEL in primary schools. Teachers with an associate (two-year) degree had the highest perceived levels of difficulty implementing SEL programming. Additionally, teachers with more years of teaching experience found it less difficult to incorporate SEL into classroom practice. While analysis found that there is an interactive effect of education background and years of teaching experience, it was not determined to have a strong impact on teacher perceptions.

Poulou et al. (2018) compared perceptions of Greek and United States preschool teachers' own emotional intelligence (EI) and social and emotional learning (SEL). The research examined whether perceptions of EI and SEL vary across cultural groups, whether those perceptions are related to students' emotional and behavioral issues, and whether those relationships vary by cultural group. Researchers hypothesized that teachers with more positive beliefs about implementing SEL would be able to better assist students with emotional and behavioral issues, as well as the converse. Eighty preschool teachers and 337 students from 24 American preschools along with 92 preschool teachers and 238 students from 52 Greek state schools participated in the study. Researchers found that the main effect of the cultural group was significant. Specifically, American teachers scored higher on EI perceptions and SEL comfort of implementation, confirming hypothesized cultural differences. To assess student data, researchers used several hierarchical linear models to account for the nested nature of the data. Researchers identified teacher-level predictors including U.S. teacher beliefs of comfort in implementing SEL skills (lower teacher comfort level correlated with greater student anxiety) and U.S. teacher perception of commitment to improving SEL skills (higher teacher commitment correlated to lower perceptions of peer difficulties). Similarly, Greek teacher level predictors included teacher perceptions of understanding of emotions (lower levels of teacher understanding correlated with more emotional and peer difficulties for students). Despite several limitations, these findings that cultural difference significantly impacts teacher perceptions of SEL supports the need for further investigation into perceptions of SEL across groups.

While research on SEL has grown dramatically in recent years, the focus has been mainly on children's acquisition of social and emotional competences and the effects of SEL on academic achievement and other benefits. Limited attention has been given to teacher's role in SEL even though "[t]eachers are the engine that drives SEL programs and practices in schools and classrooms …" (Schonert-Reichl, 2017, p. 138). As early childhood educators are the primary implementers of SEL in preschool programs, their perceptions of SEL are likely to impact the delivery, evaluation, and outcomes of social and emotional learning opportunities for young children. The purpose of this study was to investigate SEL perceptions of prekindergarten teachers in an American urban, public preschool serving predominantly Black students. Specifically, the following research questions were investigated:

1. Does a prekindergarten teacher's classroom position impact perceptions of social and emotional learning?

2. Does a prekindergarten teacher's educational level impact perceptions of social and emotional learning?
3. Does a prekindergarten teacher's years of teaching experience impact perceptions of social and emotional learning?

Methodology

A quasi-experimental, survey design was used to investigate prekindergarten teachers' perceptions of social and emotional learning. Survey research provides a numeric description of trends, attitudes, or opinions of a population by studying a sample of that population (Creswell & Hirose, 2019), making it a preferred method to gather data in educational research (Diaz de Rada, 2013). In this study, two rationalistic measures were employed to collect data related to preschool teachers' perceptions of social and emotional learning along with demographic information. It was posited that teachers with higher levels of education and more years of preschool teaching experience would have higher comfort, commitment, and culture domain scores as compared to teachers with lower levels of education and fewer years of prekindergarten teaching experience.

Instruments

The 12-item Teacher Social and Emotional Learning Beliefs Scale (TSELBS) developed by Brackett et al. (2012) was used to quantify teacher beliefs about social and emotional learning (SEL) along three distinct subscales: commitment to teaching SEL, comfort teaching SEL, and perceived school-wide culture of support for SEL. Each subscale was comprised of 4 items: Commitment (items 3, 4, 11, and 12), Comfort (items 5, 7, 8, and 9), and Culture (items 1, 2, 6, and 10). The TSELBS uses a gradient scale ranging from 1 to 5 (Strongly disagree - 1, Disagree - 2, Neutral - 3, Agree - 4, and Strongly agree - 5). Item 10 is reverse scored. Domain scores range from 4-20 with higher scores indicating more positive perceptions of commitment to, comfort with, and support of SEL teaching. Along with the survey, a 4-item demographic questionnaire was used to collect information on classroom position (lead or auxiliary), level of education (associate degree, bachelor's degree, or graduate degree), and number of years' experience teaching prekindergarten (0-20 years or more than 20 years).

Participants

Participants were a convenience sample from a public preschool located in a metropolitan area of the southeastern United States. The 324 students are predominantly (98%) of color (94% Black, 2% Hispanic, 2% mixed race, and 1% White) and low socio-economic status, as evidenced by 100% participation in the free lunch program. There are 18 classrooms with two designated as inclusive classrooms that accommodate students with special needs. Each classroom has 18 students, a lead teacher, and an auxiliary teacher. All teachers were female.

Participants (n=22) completed the survey during the week-long data collection period in the second semester of the school year. Participants (13 lead teachers and nine auxiliary teachers) tended to be highly educated with 17 (77%) holding a bachelor's (four-year) or graduate degree while the remaining five held an associate (two-year) degree. Additionally, participants tended to

be experienced early childhood educators, with eight (36%) having more than twenty years of experience teaching prekindergarten.

Data Analysis

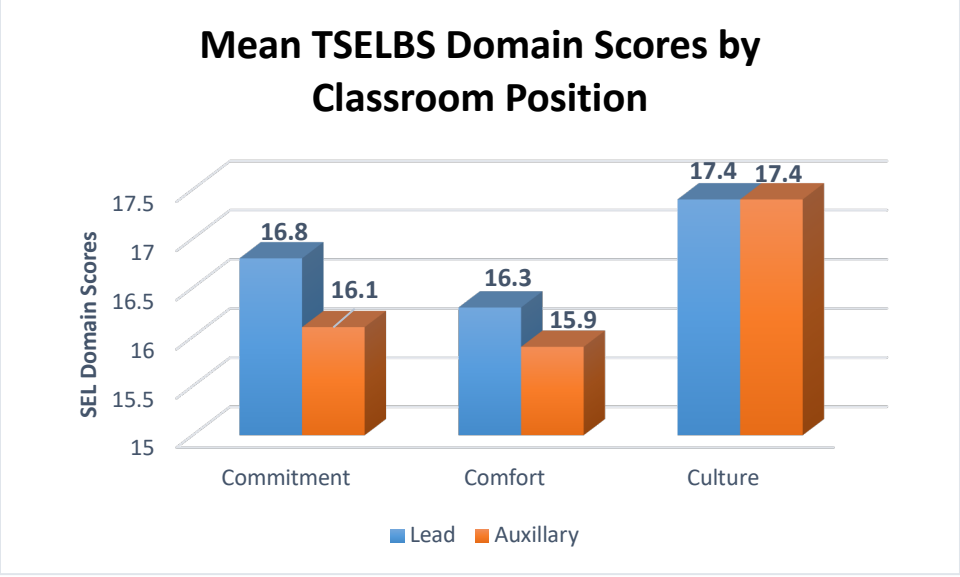
Independent variables were the teacher position (lead or auxiliary), level of education (associate degree, bachelor's degree, or graduate degree) and years of prekindergarten teaching experience (0-20 years and more than 20 years). Participants' Teacher Social and Emotional Learning Beliefs Scale responses were calculated for each domain: comfort, commitment, and culture. Mean domain scores (4 lowest to 20 highest) were calculated for each research question's subcategories. A cross tabulation analysis was performed using SPSS 27 to investigate the relationship between independent and dependent variables.

Findings

Research Question 1

As shown in Figure 1, mean lead and auxiliary teachers' mean Teacher Social and Emotional Learning Beliefs Scale (TSELBS) scores for comfort and commitment were very similar, varying only by .7 and .4 points, respectively. Interestingly, scores for perceived culture matched exactly.

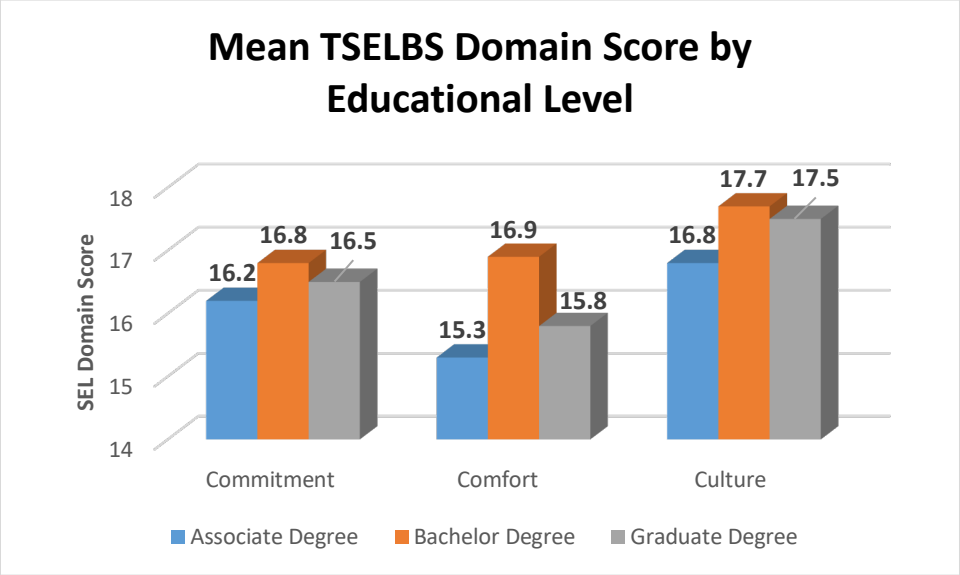
Figure 1 Mean TSELBS Domain Scores by Classroom Position



Research Question 2

Mean scores for each TSELBS domain by educational level are shown in Figure 2. Commitment and culture scores varied slightly, within one point, across degrees (associate, bachelor's, and graduate). The greatest variance between teacher education levels was on the TSELBS comfort domain, which ranged from 15.3 (associate degree) to 16.9 (bachelor's degree).

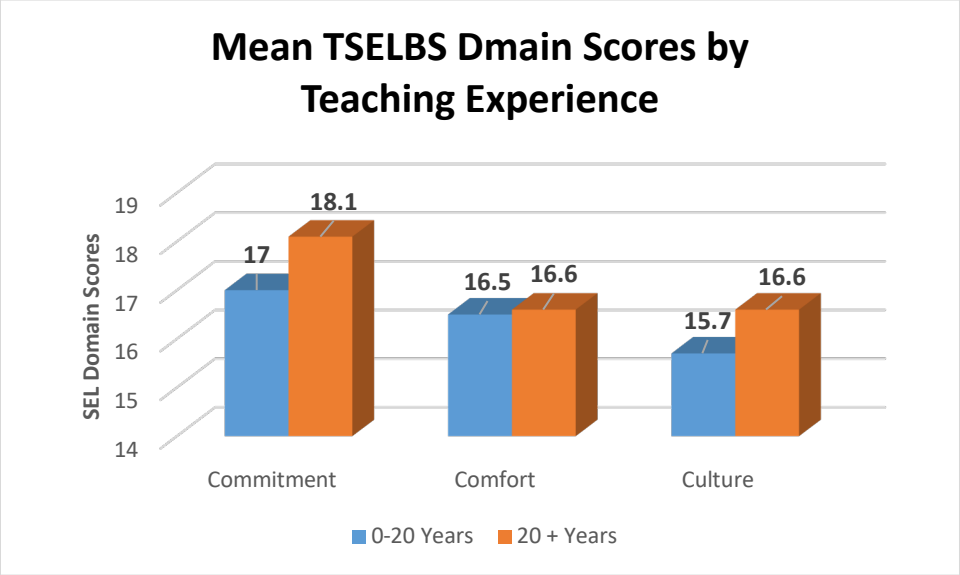
Figure 2 Mean TSELBS Domain Scores by Educational Level



Research Question 3

Lastly, mean domain scores for teacher's number of years of experience teaching prekindergarten were calculated. Teachers with less experience scored lower than teachers with more experience across all three domains, with comfort scores showing the least amount of variation (.1) between the two groups. A difference (1.1) occurred between teachers with more than twenty years of experience teaching prekindergarten (18.1) and those with 20 or fewer years (17.) in domain scores for commitment.

Figure 3 Mean TSELBS Domain Scores by Years of Experience



Discussion

Results in this study do not support the asserted hypothesis that lead teachers, more educated teachers, and more experienced teachers have higher domain scores on the Teacher Social and Emotional Learning Belief Scale. While auxiliary teachers did score slightly lower in commitment and comfort domains, the difference was not significant. In terms of teacher education level, domain scores for commitment and culture were similar across degrees. Comfort level scores were more varied, with holders of an associate degree scoring the lowest; however, because of small sample size, further investigation to substantiate this finding is warranted. There are a few possible explanations for teachers with bachelor's degrees scoring the highest on the comfort domain. It is possible that these teachers are more recent graduates of a teacher preparation program that, possibly, included social and emotional learning (SEL) within the curriculum. Assuming that teachers holding graduate degrees have been teaching longer, teacher burnout may be an impacting factor. However, this trend is not supported by the examination of domain scores by categorical years of prekindergarten teaching experience in which the mean scores for beginning teachers and the most experienced teachers differed by approximately one point for commitment, comfort, and culture.

While Wu et al. (2020) found teachers' experience enhanced the implementation success of a formal, teacher-led social and emotional learning program on the development of four-to-five-year-old children in an Australian preschool setting, number of years teaching prekindergarten was not a significant factor regarding beliefs about SEL in this study. Domain scores for experienced teachers (more than 20 years) did not notably differ from those who had been teaching prekindergarten for less time, seeming to suggest that novice and veteran early childhood teachers alike need explicit training along with adequate time and opportunity to become confident in providing effective social and emotional learning opportunities for their students.

Previous studies (Domitrovich et al., 2010; Durlak & DuPre, 2008) found that teachers who believe that there is a need for SEL and are committed to providing SEL in preschool, are the most effective at implementing SEL activities and/or programs in their early childhood classrooms. Thus, future research might investigate the effects of exposure to SEL training and coaching on teachers' SEL beliefs and/or classroom practices. The impact of age and racial identity on teacher SEL beliefs and/or classroom practices would be another area worthy of further investigation. Research with larger, more regionally expanded participation including teachers with various levels of SEL training would also be beneficial.

Limitations

As in all studies, certain limitations should be acknowledged. Data were collected through survey method, and the limitations of self-report data have been noted (Sallis & Saelens, 2000). While participants remained anonymous, bias associated with individuals reporting on their own experiences (Devaux & Sassi, 2016) as well as a tendency to either consciously or unconsciously present a favorable image of themselves, known as socially desirable reporting, could also obscure the relationships between variables (Van de Mortel, 2008). Further, participants were a homogenous, convenience sample of prekindergarten teachers from a single school. As a result, a

small sample size and homogeneity of participants limit the generalizability of findings. Due to limited resources, a qualitative element was not included in this study.

Conclusions

Given the growing body of research linking SEL with later academic outcomes (Cooper et al., 2014; Durlak et al. 2011; Jennings & Greenberg, 2009), impactful SEL in the preschool setting has the potential to serve as an equity tool in educating young economically disadvantaged students of color (Jagers et al., 2019). Since classroom teachers are the primary implementers of SEL, perceptions and beliefs about SEL likely influence delivery, evaluation, and outcomes (Brackett et al., 2012; Buchanan et al. 2009). By increasing knowledge of teachers' perceptions of SEL, administrators and instructional coaches will be able to make data-informed decisions regarding SEL programs/products, professional development training, and classroom-level behavior intervention strategies. Given that administrators and classroom teachers are expected to address social and emotional developmental teaching standards in all 50 states in the United States (Dusenbury & Weissberg, 2017), more research about teacher perceptions of those standards must be conducted, preferably using larger samples and including qualitative components. Specifically, research must address the gap concerning the cultural relevance of SEL programs in public school settings, specifically those serving students of low socioeconomic status and/or of color (Durlak et al., 2011; Jones et al., 2020; Yang et al., 2019).

In this school-specific study, hypothesized trend lines were not supported by the data. These findings suggest that personal beliefs for teachers about social and emotional learning are highly individualized. To support teachers in developing SEL instructional skills and increasing comfort level, personal relationships with administrators and coaches as well as the use of individualized goals are essential. It is recommended that both pre- and in-service early childhood teachers receive the training and support necessary to help students make positive, responsible decisions, create frameworks to achieve their goals, and build positive relationships with others.

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Using Children's Literature as a Model for Problem-Based Learning

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Abstract

Problem-Based Learning (or PBL) is a teaching style that pairs beautifully with science and social studies. PBL allows students to drive their learning, providing autonomy to choose topics or issues that interest them. It scaffolds the development of desirable 21st century skills: collaboration, critical thinking, communication, creativity, flexibility, and higher levels of cognitive thinking. Using a specific approach to PBL can assist teachers and students in understanding the process and knowing where their work is taking them. This article will share using the children's book *Spring after Spring: How Rachel Carson Inspired the Environmental Movement* by Stephanie Roth Sisson (2018) and Design Thinking as a guide for implementing Problem-Based Learning with your elementary level learners.

Key Words: Children's Literature, Problem-Based Learning, Design Thinking, Elementary Science Education, Environmental Education

Introduction

Stepping outside, whether it is your schoolyard, your backyard, or the forest of a nearby state park, an observer cannot help but hear a variety of sounds in the immediate vicinity. We may hear the rustle of the wind in the autumn leaves as they begin to turn brilliant shades as our days shorten. We may hear the tinkling of a nearby fountain or the babble of a small creek as it

dances over mossy rocks. Inevitably, we hear the strains of wildlife that surrounds us: the scritching of a blue-tailed skink (five-lined skink to our science friends) in the leaves as it scurries out of sight beneath the playground fence, the call of songbirds as they gather at a nearby feeder, the nearly deafening whir-whir of summer cicadas, or our favorite, the cheereep cheereep of spring peepers (chorus frogs).

Figure 1
Twin Falls

Note: Young girl documents her hike to Twin Falls at Rock Island State Park in Middle Tennessee.

Nearly 60 years ago, however, this was **not** the case. The chorus of insects, birds, frogs, and other animals was becoming quieter, and no one seemed to notice. No one but Rachel Carson. The purpose of our article will be to share an award-winning children's book about the life and work of Rachel Carson. We will also describe Problem-Based Learning (PBL) and provide a rationale for using PBL. Ultimately, we will share how Sisson's book, *Spring after Spring*, provides both an excellent model and inspiration for implementing PBL into the elementary classroom.

Spring after Spring: How Rachel Carson Inspired the Environmental Movement by Stephanie Roth Sisson (2018) is a beautifully illustrated children's book that details the life of environmental activist, Rachel Carson. The book begins with Rachel as a child, eager to greet the spring! As a child, Rachel spent a great deal of time outdoors listening to birdsong, noting

migration patterns of birds, and the transformations that reflect the changing seasons. Rachel had plans to become a writer but fell in love with science. As an adult, Rachel noted that the voices of springtime animals were becoming quieter and quieter. It was this early love of nature, and in particular, the chorus of spring, that made Rachel aware of its absence several decades later. Her observations and research led her to discover the connection between pesticides and a decrease in wildlife. She shared her findings with a plea for people to consider their impact on the environment in her book *Silent Spring*. Even though Rachel passed away two years after her book was published, her work raised awareness across the nation and resulted in the creation of the Environmental Protection Agency ("The origins of EPA", n.d.) and shortly thereafter Earth Day.

Spring after Spring (2018) was selected by the National Science Teaching Association as an Outstanding Science Trade Book (2019) and a Best STEM Book (2019) for 2019. Additionally, the National Council for the Social Studies selected Sisson's book as a Notable Social Studies Trade Book for Young People (K-2) (2019). This award-winning book is a perfect way to set the stage for Problem-Based Learning outside of the classroom. Rachel Carson was both a scientist and journalist. But she was **not** an ecologist. Carson used her observation skills to identify a problem and her research skills to collect data and consider possible solutions. It was her love of journalism that helped her communicate her findings and solutions to the community at large through the writing of her book, *Silent Spring*. Parents, teachers, and learners can use Sisson's book as a springboard to discovering or identifying a problem in their own neighborhoods and to use PBL to identify viable solutions.

Problem-Based Learning (or PBL) is a teaching style and learning style that pairs beautifully with science and social studies. PBL places learners in the driver's seats of their own education. This is best described by Tan (2003) when he wrote "in PBL, learners are given the opportunity to find knowledge for themselves and to deliberate with others" (p. 22). PBL doesn't happen in isolation; it requires collaboration and group work. During the process of working with others, learners have an opportunity to "refine and restructure" their knowledge as they identify an issue or problem and work toward finding a solution.

Problem-Based Learning can be a powerful tool in shifting learning from lower levels of cognition (remembering and understanding) to higher levels (apply, analyze, evaluate, and create) (Krathwohl, 2002). It also allows students to drive their learning, providing autonomy to choose topics or issues that interest them. PBL scaffolds the development of desirable 21st century skills: collaboration, critical thinking, communication, creativity, flexibility, and higher levels of cognitive thinking (Dede, 2010; Lapek 2018). Additionally, PBL can mirror supporting Next Generation Science Standards' (NGSS) shift toward learning focusing on solving problems ("Problems with Problems", n.d.).

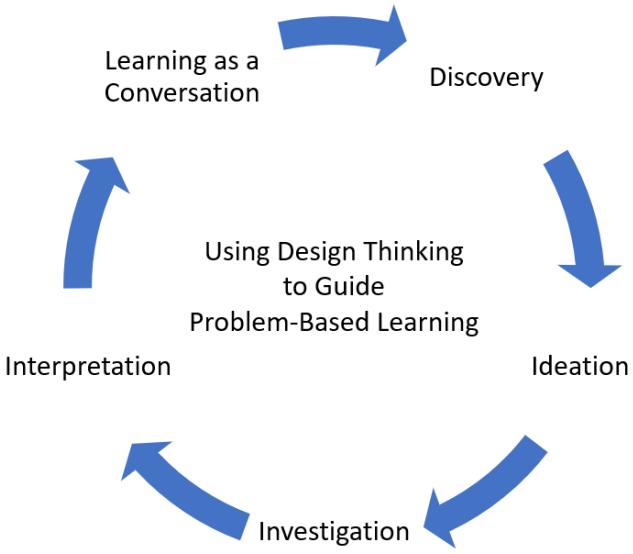
Implementing PBL into your classroom can be stressful for both the teacher and the student. As teachers we must be willing to learn alongside our students and to be flexible with students' choices for projects and outcomes. Our students may also feel trepidatious when considering an open-ended assignment. Much of their school experiences may have been teacher-directed learnings or closed-ended assignments. Many students find security or comfort in knowing exactly what is expected. This is not the case for PBL as the process will result in new ideas and

solutions so flexibility is a must. Having this much 'freedom' can be overwhelming; we have discovered that students and teachers find PBL to be less stressful when a methodology is employed.

There are several methods for engaging in PBL. Similar to a scientific method, using a specific approach to PBL can assist teachers and students in understanding the process and knowing where their work is taking them. Design Thinking (IDEO, 2011) is a process or set of steps teachers and learners can use to guide Problem-Based Learning. These steps include Discovery, Ideation, Investigation, Interpretation, and Conversation (See Figure 2).

Discovery provides students with an opportunity to identify a common problem or issue in need of a resolution. Ideation requires the generation of ideas. This is a stage in which learners brainstorm, often wildly and with abandon, a variety of ideas or solutions for the problem identified in the Discovery stage. It is important to remind learners that during this stage we do not need to concern ourselves with spelling or grammar conventions, plausibility, time constraints, or other judgements that may prevent or inhibit creativity. This step does require, however, identification of the most fruitful of ideas shared. These ideas will shape the remaining three steps.

Figure 2
The Design Thinking Process



Note: Design thinking is a great way for teachers and students to guide their Problem-Based Learning experiences. Oftentimes, reflecting on the processes of PBL and suggesting solutions leads to asking about and researching new issues.

The Investigation stage requires the group to come to a consensus on a plan of action. This plan may include researching what others have done before as well as conducting our own research via inquiry, experimentation, interviews, or other investigative methods. It is best if this step is documented carefully as it provides a roadmap for all group members to follow. Interpretation requires the identification of patterns and insights from observations, interviews, and other data

or information collected previously. This stage allows for the composting of ideas from curious bits of information into rich and relevant stories that provide meaning and possible solutions to the issue at hand.

Learning as a Conversation is the final step in the Design Thinking phase. This stage makes room for learners to, again, come to a consensus, but this time on their investigation as well as to succinctly share this information with a larger group (e.g., their classroom, school, or even community). This is not only an opportunity to share what we have learned but to consider and, if appropriate, integrate the feedback from our audience.

Below we will share possible activities and questions to help teachers and students begin the Design Thinking process. It is important to remember that with PBL, neither the students nor the teacher know the direction the process will take them. This is an open-ended, real-world process that requires critically thinking about and observing the world around us. The following suggestions and activities are just suggestions to help you begin the process and guide you through the stages. What your students identify and choose to pursue will be driven by their collective interests, the amount of time they have, the support they receive from their teachers and schools, how collaborative their classroom environment is, students' ability to self-monitor, and a willingness on both the teacher's and students' parts to be comfortable with unknown outcomes.

Discovery

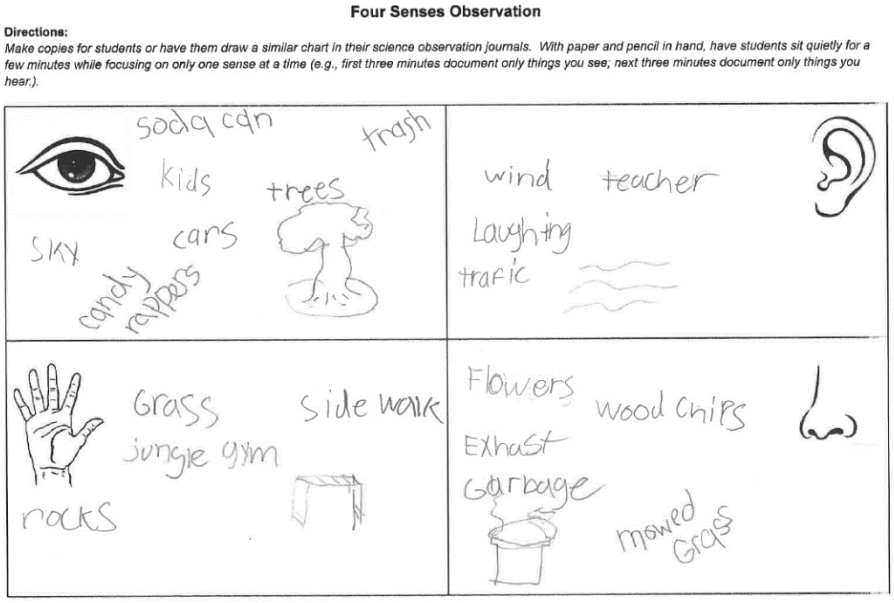
The Discovery stage is an opportunity for students to use their observation skills to identify situations or issues in which they may find solutions to and impact change. Choose an area in the schoolyard, neighborhood, or park to visit regularly for several days. There are a variety of science minded activities that can encourage students to engage with their surroundings and guide their observations. Two of our favorites include a Single Concept Field Trip and a Four Senses Observation.

The "Single Concept Field Trip" (Birchard & Crook, 2005) is an activity that you could use to get students thinking about changes in their environments. Brichard and Crook suggest repeated, "quick single-topic outings focusing on nature" (p. 34) to explore a variety of topics or events. These excursions can be completed in 10-20 minutes and may happen in your schoolyard or backyard setting. Some of these "single" concepts may include looking for relationships among living things (symbiotic, parasitic, collective), evidence of change (things that are growing, dying, changing colors), listening for sounds of nature (spring birds, summer insects, the crunch of autumn leaves), or even changing seasons (sprouting plants, changing leaves) (2005). These are just a few ideas that can be used to focus quick outings that may lead to the identification of possible changes or issues.

Another activity that you could use to get students thinking about changes in their environments is The Four Senses Observation. This activity requires students to spend several quiet minutes in an area to document what they can see, hear, touch, or smell (taste has been omitted for a variety of reasons). Students may take a sheet of paper that has been folded into quarters to document what they are noticing using each of the four senses listed above (Please see Figure 3 below.). It

can be helpful for the parent or teacher to provide focus by asking students to consider only one of the senses for a prescribed amount of time. During this time students may document what they hear (birds chirping, school bell, children's laughter), what they smell (wildflowers, wood smoke, dumpsters), what they feel (damp grass, smooth pebbles, rough bark of a tree), or what they see (autumn leaves, aluminum can, butterflies). These observations can be collected individually and kept in a science journal or shared as a class during a post observation debriefing.

Figure 3
Four Senses Data Collection



Note: The above image was created by a 4th grade student making observations on their playground. See Appendix A to find a copy of the Four Senses Data Collection sheet that you can use with your young learners.

Both activities are deceptively simple but pack a powerful punch. Oftentimes teachers and parents feel there is not enough time in the curriculum or day to spend time outside on field trips. Additionally, there is the concern of transportation, costs, and permissions. Students may also have some unease when being exposed to the outdoors. Many students do not have opportunities to explore outside so being outdoors in new places for extended amounts of time can be stressful. Wilson (2005) suggests exploring familiar outdoor landscapes with students and for shorter periods. These could include a child's backyard, the playground, a vacant lot across from the school, or a park down the street. Both the activities mentioned above will work across short periods of time and in nearby locations providing students with opportunities to become more at ease and more familiar with the natural areas they are close to.

Whether you engage in these activities once or twice or repeatedly over several weeks, the data collected will provide students with a starting point for their Discovery stage of Design Thinking. The collected observations will serve as a point for students to identify issues that may require intervention. It is possible that after several excursions outside that your students may identify such issues as trash on the playground or in the park, noise pollution from industry

or construction, or safety hazards with playground equipment. These are just suggestions and your students' ideas will drive this process.

Ideation

This stage provides students with an opportunity to brainstorm possible solutions to the issue identified during the Discovery stage. The first part of this stage is uninhibited, and ideas are generated regardless of constraints, real or perceived. Once an exhaustive list has been generated, encourage students to identify similarities (to sort and to classify) these solutions. They may sort solutions by ease of implementation, amount of work required, potential costs, etc. Once these ideas have been organized, students may move to the second part of the Ideation stage in which they must identify the most plausible, viable, solution to the problem.

Investigation

The investigation stage requires students to learn what others have done as well as what may be viable for their classroom or community. This stage involves both research and data collection. Data may be collected via surveys, observations, or interviews. The problem identified by the students would be the driving factor in whether they choose to interview classmates and teachers about litter on the playground or make observations why butterflies seem to be absent from the local park.

Interpretation

Once data are gathered and stories shared, students will need opportunity and guidance to make sense of it all. During this stage of design thinking teachers may want to create space and time for a debriefing session. Here teachers ask students to consider questions like: What did we learn? How did we learn it? Where did we learn it? Why did we learn it? As students wrestle with these questions patterns in the data and a larger picture will emerge. This is a prime moment in the learning process to encourage students to compare their learning to the research of experts.

Learning as a Conversation

Learning as a Conversation is possibly one of the most important and perhaps most overlooked of all the steps in PBL. This stage requires learners to once again come to a consensus on solutions to the problem they identified in the first stage. They have used their most viable or fruitful ideas from the Ideation stage to guide their Investigation stage. During the Interpretation stage, they shared their data, their findings, their understandings. But it is this final stage in which students must make others aware of the issues, provide solutions, and act on these solutions. In Figure 4 below, we have provided an example from a 4th grade classroom of students engaging in these processes that resulted from noting that there was trash on the playground and school.

Figure 4
4th grade example of Design Thinking

Discovery: A class of 4th graders took a daily walk around their playground area and individually discovered items on the playground that did not belong. Those items included jackets, candy wrappers, and various other trash.

Ideation: As a class, they collaborated and shared their discoveries realizing that they had all seen the same items on the playground. Next, the group brainstormed ways to get involved in cleaning up their playground. Their ideas included providing more accessible trash cans and forming a committee of weekly or monthly trash collectors.

Investigation: After their brainstorming session, the class got to work researching ways to improve the appearance of their playground. Additionally, several students collected data based on which days out of the month the playground had the most litter.

Interpretation: In this phase, the classroom teacher had a whole group debriefing session. The teacher engaged the class in fruitful conversations about their discoveries, did comparisons to the data, and had students consider how their findings compared to the research of experts.

Learning as a Conversation: A consensus was made, and the class decided that they did indeed need a weekly trash collector committee and more accessible trash cans on the playground. Next, the class presented their ideas to the school administration and parent teacher organization. The group had productive conversations about making their ideas systematic so that the cleanliness of the school playground was sustained. In the picture above, two of the weekly trash collectors are utilizing the accessible trash cans to collect trash from the playground area.

The teachers who engaged their students in this PBL activity reflected that they felt a little uncomfortable with not knowing what the final product or project would be. However, once students became involved and began driving the learning, teachers commented that they had wished to have provided more time in the early phases of design thinking (e.g., discovery and ideation) to allow for their students' ideas to deepen and develop. In contrast, student responses were positive. Students noted both satisfaction with being in charge of the project as well as learning through exploration. The authors noted a great deal of pride in the students' ownership of cleaning up the school playground and being a key part in solving an issue for the school.

Conclusion

Problem-Based Learning is a powerful tool that provides academic autonomy and places students at the center of learning ("Problems with Problems", n.d.), where they should be. While the PBL process is opened-ended and directed by student interest, a list of other possibilities that may arise in classroom discussions are listed in Figure 5 below. This is not an exhaustive list and several of the topics may lend themselves to a wider audience (e.g., zoo habitats, voter registration). However, we recommend these topics as a good place for teachers who have not yet engaged in the PBL process to start.

Figure 5
Possible PBL Projects

- Playground Safety
- Stray Pets/Animal Shelters
- Access to Clothing/School Clothes Closet
- Hunger/Schoolwide Food Pantry
- Endangered Animals
- Zoo Habitats
- Student Access to Electronic Devices (Digital Divide)
- Back to School Supplies
- Voter Registration or Voter Rights
- Bullying/Cyber Bullying
- Game Design (Video or Board)
- Welcoming New Students
- Promoting Mindfulness in the Classroom
- Stress Reduction
- Healthy Habits (Nutrition or Movement)
- Recess/Play Initiatives

The purpose of our paper was to share a children's book, *Spring after Spring* by Sisson, that offers teachers a literature-based parallel for Problem-Based Learning and students a starting point for engaging in their own learning. If you are unable to locate a copy of Sisson's book via your library or interlibrary loan, you may also consider other children's books about Rachel Carson listed in Figure 6 below. In conclusion, allowing a space for your students to observe the world around them via the PBL model, you can help them reach their potential both as a learner and as members of a larger community. Just as Rachel Carson's research revealed that pesticides were harming insects, birds, and other animals, your students can mirror Carson's data collection and problem-solving skills to become agents of change in their own communities. Problem based learning, both powerful and empowering, enhances 21st century skills of collaboration, communication, critical thinking, and problem solving. It is our goal that from this article you can see how children's literature can be used as the catalyst for learning and discovery.

Figure 6

Other children's story books about Rachel Carson

- *Women in Science and Technology: Rachel Carson—The Story of an Influential Marine Biologist and Conservationist* by M. M. Eboch and Illustrated by Elena Bia (2021).
- *Rachel Carson and Ecology for Kids: Her Life and Ideas* by Rowena Rae (2020).
- *Rachel Carson: Women in Science* by Anne Rooney and Illustrated by Isobel Lundie (2019).
- *Rachel: The Story of Rachel Carson* by Amy Ehrlich and Wendell Minor (2003, 2018).
- *Rachel Carson and Her Book that Changed the World* by Laurie Lawlor and Illustrated by Laura Beingessner (2014).
- *Who was Rachel Carson* by Sarah Fabiny (2014).
- *Rachel Carson: Pioneer of Ecology* by Kathleen V. Kudlinski (1989).

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Four Senses Observation

Directions:

Make copies for students or have them draw a similar chart in their science observation journals. With paper and pencil in hand, have students sit quietly for a few minutes while focusing on only one sense at a time (e.g., first three minutes document only things you see; next three minutes document only things you hear.).

	
	

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One Male Student Teacher's Perception and Experiences of Student Teaching in an Infant Group Care Setting

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Abstract

This qualitative case study explores in-depth how one male student teacher reflected on his care practice with infants and how he described his experiences of working with female mentor teachers. The authors used the teacher's daily journal entries, four individual interviews, and weekly team planning meetings as data sources. The data was collected over 15-week period. Findings revealed that the teacher's caring sense gradually evolved through care practice and that he brought in his authenticity as a teacher, not just as a male teacher, while confronting with and critically reflecting upon himself as a teacher. Also, the weekly team planning meetings helped him build relationship with the female mentor teachers. He positively reflected upon his experiences of collaborative teaching. Implication of the findings is discussed in terms of male students in early childhood teacher education programs.

Introduction

As of 2017, female childcare workers make up 93 % of the entire workforce in the United States (U.S. Bureau of Labor Statistics, 2017). This lack of male teachers has been globally persistent in early childhood education (ECE) throughout time (Drudy, 2008). As a result, there have been concerns about "gendered" (Murray, 1996, p.368) childcare, suggesting that children have been

deprived of balanced opportunities to learn from people who represent all genders (Husam et al., 2019). Several studies attributed low recruitment and retention of early childhood (EC) male teachers to low salary (Shpancer et al., 2019), low social status and the gendered nature of the profession (Bhana & Moosa, 2016), and negative societal perception of male teachers (Ottaviano & Persico, 2019; Shpancer et al., 2019). Moreover, social isolation in a female-dominated workplace is one of their concerns about working at preschools (Anliak & Beyazkurk, 2008). As such, male teachers in early childhood education have been marginalized as 'others' (McGowan, 2016; Zhang & Wang, 2018). Despite all the challenges, when male teachers choose to work in early childhood education settings, their motivation is grounded on their passion and love of children and teaching (Anderson, 2019; Pirard et al., 2015; Xu, 2019).

Recently, researchers investigated the characteristics common to male teachers' practice at preschools. Quality male teachers are reported to share common characteristics with quality female teachers in that male teachers are child-centered, sensitive, responsive, nurturing, loving, compassionate, trustful, patient, playful, and excited about children's learning and curiosity (Bullough, 2015; Carter, 2013). As the understanding of male teachers in ECE has improved recently, there has been an effort to increase the number of male teachers in EC education and care. One of the ways to promote recruitment of male teachers would be to improve EC teacher education programs where prospective male teachers are trained to teach and make career decisions (Nelson & Shkwambi, 2010; Therese & Ayse, 2010; Xu, 2019).

Male Student Teachers' Experiences in Teacher Education Program

Historically male students' enrollment in ECE programs at colleges has been very low, indicating the need for understanding of the male students' experiences in their programs (Therese & Ayes, 2010). Existing studies on male students in the programs show that the students face some challenges during coursework as well as the field experiences. In EC teacher education programs where students are predominantly female, male students become a minority and deal with feelings of isolation and issues of standing out (Xu, 2019), while figuring out "how to make a place for themselves" (Pirard et al., 2015, p.365). Furthermore, field experiences pose more complex challenges to male students. At some childcare programs and schools, male student teachers are prohibited from changing diapers or taking female children to the restroom (Xu, 2019). Some female teachers insist that male student teachers are incapable of caring for young children because of their gender (Beyazkurk, 2006). Some parents question male student teachers' work with their children (Mistry & Sood, 2013) as societal bias against male teachers are still pervasive (Jung, 2012). Thus, male students constantly grapple with a potential suspicion and a risk of being seen as pedophiles (Heikkila & Hellman, 2017; Joseph & Wright, 2016; Mistry & Sood, 2015). Coupled with discriminatory policy against male students, such societal misperception may only exacerbate male students' anxiety and concerns about their behaviors during field experience.

However, the challenges that male students face are rarely addressed in teacher training programs (Pirard et al., 2015). Male students are reported to be lack of proper guidance or support from male mentors or supervisors during student teaching (Battle, 2015; Heikkila & Hellman, 2017; Mistry & Sood, 2016). Consequently, male students have to deal with the challenges they face on their own. Given that field experience is highly influential in students'

career choice (Pirard et al, 2015; Heikkila & Hellman, 2017), it is important to provide male students with field experiences where they are well received and connected with mentors.

Infant Care Practice

In early childhood education, caring is considered critical to professionalism (Brody, 2015) and expected to be a part of teachers' attitudes and interactions with children. In particular, infant/toddler care involves teachers' intimate physical contact with very young children (Jung et al., 2021; Svinth, 2018). Such unique demands may present more challenges to male student teachers, making them vulnerable to societal bias against them. Also, due to the scarcity of infant teachers who are males, the male student teachers in infant group care settings may experience the status of being a minority and a sense of isolation. Subsequently, the challenges and conflicts that the teachers face may become more salient. However, existing studies on male student teachers' field experiences in ECE settings are very limited (Heikkila & Hellman, 2017) and to the best of my knowledge, there is no research on male student teachers in infant group care settings. The purpose of the present study is to explore one male ECE student teacher's views and experiences in infant group care setting during his student teaching. This study is intended to help teacher educators and professionals better understand and support male students and teachers in infant classroom. Research questions are 1) How does a male student teacher perceive his care practice with infants? 2) How does a male student teacher describe his experiences of working with infants and female colleagues?

METHOD

Settings and Participants

Since the focus of the study was to explore in-depth one male student teacher's perception and experiences of working with infants and female colleagues, the present study employed a qualitative case study approach to gain an in-depth understanding of the male student teacher's experiences (Marshall & Rossman, 1999). For "purposeful sampling" (Merriam, 1998, p.61), John (pseudonym), a senior-year male student in an ECE program at a large state university in the United States was deliberately chosen (Patton, 1990). At the beginning of the study, he was in his early 20s and just started his student teaching in an infant room at a university-based child development center. He was six feet tall with a beard and humorous, and loved music, nature, and outdoor activity. He completed 20 hours of work per week over 15 weeks in the infant room. John worked with his mentor teachers, Laura and Amy in the room. On a weekly basis, John had one-hour team planning meetings with the mentors, where they shared their observations and experiences from the past week, addressed any issues and concerns, discussed ways to support children, and planned activities and schedules for the following week.

Data Sources and Data Analysis

Multiple data sources were utilized, including interviews, daily reflective journal, and observations. As a non-participant observer, the researcher observed John working with infants over two days, writing field notes. The semi-structured interviews with John were conducted four times over 15 weeks, each of which lasted for 40-45 minutes and was transcribed later.

Interview questions focused on his reflections on working with infants and his female mentor teachers and on any challenges and issues that he might face. Laura and Amy, his mentor teachers, were also interviewed for 45 minutes about their experiences of working with John. Besides, the one-hour weekly team meetings were observed over the semester, and, in total, six meetings were videorecorded. Detailed anecdotes of each meeting, which included the teachers' dialogue verbatim, were transcribed. The observations provide information on John's perception of his practice with the infants, as well as how he worked with his female mentor teachers. His daily journal with 66 entries was collected. John used the journal to vent his feelings and reflect on his mistakes/challenges, his pride/accomplishment, and his specific interactions with infants. Thus, the journal aided in understanding of John more holistically, from his emotional responses to his significant moments in day-to-day practice, which would be difficult to reveal through observation alone.

Data analysis was guided by the research questions (Merriam, 1998). The researcher read and re-read the manuscripts of the four interviews and his journal while paying attention to how he described and reflected on his work with infants and teachers. The researcher watched the recorded weekly meetings and read the manuscripts multiple times. During this process, color-coding was done on data and the relationship among the independent codes was written on a separate sheet. Also, the researcher compared all data chronologically to see whether any emerging patterns changed over time. This process helped look closely at the context of each code and themes while merging some patterns and identify new patterns.

Results

The findings show that, although John started with a lack of confidence in his ability to care for infants, he demonstrated capabilities of providing quality care practice, being responsive and sensitive to each infant's needs and interest. Overtime, John evolved as a caring person, being genuinely interested in delivering quality experiences for infants. Although John was the only male teacher in the infant room, he perceived himself as equal to his female mentor teachers, working collaboratively and professionally with open communication.

Practicing a Sense of Caring

John's mentor teacher, Laura, highly regarded his ability to care for infants. When asked about John's work with infants, Laura said, "He does really well. His language and communication with them is really good…He seems to talk to them in a caring way, but not too cutesy...and they (infants) love him!" Yet, she recalled his first day, saying with smile "We were really nervous about him... During the orientation, he was like, "I don't want to be here, and I want to get out!" He came in with more negative attitude and idea of what it was." John said in a later interview that his lack of experience with infants made him feel overwhelmed because he "did not even know how to hold a child." He wrote in his journal about his second day,

> "I'm good with kids, but not as good with babies…One girl who is particularly fussy would start crying and I would be at a loss not knowing what to do because I did not know the problem."

However, under the center's indiscriminatory gender-equal policy toward all teachers, John gained many opportunities to fully engage in the care practice such as diaper change, napping, or feeding from the first week of his student teaching. After his first try with diaper change, he referred to that day as "Big day!" and positively reflected on basic care in his journal (Day 4), as "complicated" but "interesting" and "easy to get in a rhythm to." John also managed sanitary-related tasks such as cleaning and washing. At times, he mentioned how "draining" these tasks were, yet he perceived them as an essential part of infant group care. He wrote, "Learning these routines is very important for managing the whole classroom" (Day 13). Through the care-related tasks, John gained more focused one-on-one time with the infants and gradually realized a sense of responsibility for the infants, striving to meet their needs and to support their development. He wrote,

> "The kids are growing on me now…and I am beginning to learn each of their personalities which has greatly alleviated the struggle to [identify] the problem and help with [their developmental] goal" (Day 7).

Throughout the first half of the semester, John was deeply concerned about each child's emotional/physical well-being, often reflecting in his journal on details about each child's habits, behaviors, cues, temperament, and his responses to them. In the following journal entry, he shared a sense of relief and pride when he was able to recognize an infant's needs and ease her discomfort.

> "I made progress in reading what Isabel (the youngest) was thinking today…She was fine for a while but eventually I noticed her acting irregularly…so I…got her bottle. By the time I had gotten the bottle…, she was crying pretty hard. Since I timed it right, she spent hardly any time crying. I think this is cool because I was able to read what she wanted before she actually started crying and managed to prepare for it." (Day 11)

In his later interview, John explained more about Isabel's cues:

> "She wasn't crying a lot, but she wasn't super happy, there was something [different about her behavior]. She was not really playing with things, she was just sitting there, she was unhappy, like not content, but it was not really a problem…For some reason I could just tell."

Through trial and error in meeting each infant's needs during care practice, he gained better understanding of each child and became more sensitive and responsive to infants' cues. Moreover, he came to value the care practice as a way to build a relationship with them. He said, "I don't want to just do the routine and stare at a baby…It is kind of a bonding thing cause it's just like them and me" (Interview 4). Toward the middle of the semester, he was no longer anxious about infants' expression of stress/discomfort. Observation of his practice also showed that he was very comfortable with caring for infants while being warm and nurturing in his interactions with infants. He believed that his support of individual infants would encourage them to trust him, which in turn would affect the quality of their daily experiences. He said, "When they know and trust that I can help them, they can do a lot more than they could [without this trust]" (Interview 3).

Over time, John's interest in and concerns about individual infants became more personal. In his journal, he expressed his concerns about infants' sickness or absences, thinking about ways to keep them happy when they return. At times, he became excited when he noted individual infant's developmental milestones, whether small or major, hoping to see their more advanced growth before he would leave them at the end of the semester. Although he started with anxiety and concern about his ability to care for infants, he came to deeply care about them. At the end of the semester when he was asked about his strength as a teacher, he answered, "I feel like I respect them, I understand them, they understand me."

Feeling safe and comfortable working with female mentor teachers

When asked about any challenges in working with infants as a male teacher, John pointed to one issue,

> "I think it is a little bit weird because, especially in schools, I have to worry about things that girl teachers don't have to worry about. [For instance] if a kid goes in a bathroom and is in there for 35 minutes, a normal teacher could just walk in, yell at him and walk out. I have to worry about what it would be thought as. There are a lot of little things like that. If you make any wrong move, it could be hammered onto you, where I don't think it would be nearly as much as if you were a female teacher. But actually, my day-to-day life working here, no, it's not a big deal for me. I think it would be cool if Steve (a male teacher at the center) [were my mentor]; it would be cool to be in his room, but it didn't happen". (Interview 2)

Although John himself did not experience any suspicion or discriminatory treatment during student teaching, he was aware of societal perception against male teachers. Therefore, he considered that having a male mentor teacher would help him because "it could be a more direct example of what I could be doing" (Interview 2).

In regard to working with female colleagues, John pointed to some differences in communication between him and his female colleagues. Yet, he felt these were more of a personal matter and stressed commonalities that he shared with them as teachers. He said, "I'm a lot more blunt than some of the interns…[but] I don't think there's a gender difference in how we work." Observation of the weekly team meetings showed collaborative and professional relationship between the mentor teachers and John. During the meetings, the mentor teachers often checked in with John about how he was doing, what his concerns might be, and how they could support him. John seemed comfortable and candid with the mentor teachers, openly communicating about his concerns and asking a lot of questions without much hesitation. Some of his responses were: "I just don't know how to do it at all with a one-year old"; "Is it wrong to do…?"; "How would you do that?"; "I don't know how they're going to respond to it…I feel like it would help to have you [Laura] or Amy there"; "I don't really know what a language lesson is. Can you tell me…"

It also should be noted that John and the mentors at times shared casual conversation about their personal lives during the meetings. He sometimes made jokes or mimicked the infants in somewhat exaggerated ways, which made the teachers laugh, breaking up the tension of the

meeting. He reflected that the weekly meetings helped him build better relationship with the mentors and work better with infants. He said in the interview,

> "Throughout the day… we have the get-the work-done type of conversations whereas in the meetings, it's still work, but it's not all work. There's stories and it's fun and you kind of get to learn the personality of each person. I feel like I know Amy much better now than I did at the beginning of the year… so the meetings helped with learning the teacher as well as what to do [in class]".

His mentor teachers, both Laura and Amy, also considered that the meeting allowed time for them to learn about John, to build both personal and professional relationship with him, and eventually to help mentor him. For them, the meeting was not only about 'planning schedules' but about making space where they connected with and supported him. Amy said,

> "I really like being with everyone at once without babies. A lot of times during the day, it's so busy. So, it's (the meeting) a time to settle down to make sure, especially that they (John and his peer student teacher) don't need help with anything. I think sometimes it's hard for them to come to us with questions. So that's like setting a time to be able to ask questions…and to be able to check in on how they're doing."

Laura also pointed to the meeting as a space for open communication. She said,

> "I like the informality of it (the weekly meetings). It's nice to get to know your people that you are working so closely with, on a more informal basis. Especially with interns, I think it helps because they feel more comfortable saying anything (during the meetings) that they are struggling with or frustrated. They are more open up about those things."

Furthermore, Laura, who was aware of John's initial lack of motivation and confidence in working with infants, emphasized the importance of supportive mentoring for him. She said,

> "I guess being understandable of their mistakes, letting them know that we anticipate them to make mistakes and that it's okay. I always give examples of some mistakes that I had when I was an intern and my first year working here."

Observation of the weekly meetings evidenced that, throughout the semester, the mentor teachers showed willingness to support John through positively responding to his ideas and incorporating them into curriculum, listening and respecting John's reflection on infants and practice, offering knowledge and experiences to John's questions, and accepting John's request of help. With the mentors' support, John actively participated in the meetings, willing to jump into discussion with the mentor teachers, provided his commentary on their reflection, and collaboratively developed curriculum for infants' development. Laura found John's evolving positive attitude toward working with infants over time. She said, "I think that he's seeing them as something he can benefit from. I think he does enjoy the children and having fun with them." Overall, John positively reflected on working with his two mentors, valuing open communication and collaborative teamwork. When there was a new incoming female teacher in his room, he was hopeful of working with her as well. He wrote,

> "I liked learning from Laura because she seemed very skilled at what she does. I like working with Amy because she is younger and is still working out how to run a room. When problems come up, we will talk through them. I enjoy this type of collaboration so I am curious to see the type of experiences a new person will bring" (Day 41).

Discussions

Male ECE students have been reported to face many difficulties particularly in the field experiences. Yet, the present study suggests that, within supportive environment for student teaching, the male student teacher is capable of navigating complex challenges inherent in working with the youngest group of children while evolving and growing in his practice of care/education. Also, positive mentoring and open communication with mentors are essential to help him overcome some of the societal prejudice he may encounter. The findings will be further discussed in terms of male students in early childhood teacher education as follows.

A Caring Sense Evolves through Care Practice

The findings show that John's sense of care gradually evolved through intimate care practice. Within a context where there was no discriminatory policy against male teachers, John was able to be deeply involved in a wide range of care practice, having physical contacts with the infants and dealing with the infants' intense emotional/physical needs. Meanwhile, he gradually gained a better understanding of each child, formed relationship with them, gained a strong sense of responsibility, and became genuinely interested in each infant's well-being. Once he gained a sense of caring, it was powerful enough to permeate throughout his daily practice and interactions with children. He strived to offer meaningful activities aligned with infants' interests while being mindful of infants' individual needs and development. Commitment to children's well-being, to education of children, and to instilling values are all types of caring in the spectrum of teaching (Scurfield, 2017). Unlike social prejudice against male teachers, this study evidence male teacher's quality caregiving practice and his capability in this regard if they are given full trust and opportunities to fully focus on practicing care for infants.

According to one study (Bullough, 2015), a male assistant teacher at a Head Start program reflected that his work with children helped him become more "sensitive, gentler, even more fun" (p.17). Similarly, the present study suggests that experiences of care practice in infant group care settings may influence the way male teachers perceive care and that their sense of care may be emerged from their sustained involvement in intimate care practice.

Aware of Societal Prejudice against Male Teachers

The findings show that, even within an environment where John was provided with trust and full responsibility in the care practice, he was keenly aware of societal bias in his work. This indicates how deeply the social prejudice is pervaded across the society, including male teachers themselves. Existing studies show that when male teachers are concerned about any potential of gender-related accusations against them, they become more cautious when working with children (Bullough, 2015, Thorpe et al., 2018; Scurfield, 2017). Given that infant care requires a high degree of physical contact (Recchia, 2012), male teachers' fear of societal prejudice may be

amplified and thus may limit the degree of their daily interactions with young children (Xu, 2019), directly affecting the quality of the children's experiences. Several studies report that, out of such fear and concerns, male student teachers seek out male mentors to find creative strategies for the gender-related challenges (Ottavian & Persico, 2019), which is also echoed by John in the present study. Therefore, it is necessary for early childhood teacher education programs to provide an opportunity prior to or during the students' field experience that male students can connect with male teachers to seek out possible solutions and mentorship. Also, shared understanding, deep empathy, and a sense of urgency regarding these issues must be established among program faculty, supervisors, mentor teachers, center/school directors, and community so that male students can practice in the field with a sense of security and confidence.

Supportive and Relationship-Based Mentoring Pivotal to Male Student Teacher's Sense of Belonging

Several studies report that male students had difficulties to seek help or recognize any challenges they might have (Walker, 2018). In contrast, John, in the present study, was willing to share his concerns with his mentors and explicitly ask for their support. Moreover, he valued the collaborative teamwork and open communication he had with his female mentors. These findings may be attributed to the supportive teaching context. Both mentor teachers provided positive and consistent mentoring support for John, which has manifested throughout the meetings over one semester. Furthermore, the findings indicate how important the regular communication and relationship between mentor teachers and student teachers is to male student teacher's sense of trust and belongings within the female-dominant workplace.

Previous studies report that acceptance from teachers in the field affects male student teachers' positive self-esteem (Beyazkurk, 2006). Also, collegiality and collaborative culture at workplace can be supportive to male teachers when they face challenges (Jung, 2012). The present study suggests that field experiences, particularly for male students, should provide an environment where male students continuously engage in communication with their mentors to address the students' concerns, questions, and ideas. These productive interactions may enable male students to feel a sense of belonging, while alleviating any possible sense of isolation, tension, or challenges.

Conclusion

Unique demands inherent in preschool settings pose more challenges to male student teachers than any other education settings, which leads to lack of motivation to pursue their careers in preschools. To encourage more recruitment of male teachers in this setting, the first step should be to provide supports and opportunities for male student teachers to have positive and successful experiences through field experiences.

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Parent Reports of Executive Functions in Students with Learning Disability

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Abstract

This study examines the results of the Behavior Rating Inventory of Executive Function (BRIEF-2) (Gioia et al., 2015) reported by parents of children with Specific Learning Disability (LD) and/or other comorbid disabilities. LD is most notably associated with comorbid attention deficit hyperactivity disorder (ADHD) (Alloway & Stein, 2014; Westby &Watson, 2004; Willcutt et al., 2013). A total of 43 parents completed the BRIEF-2 rating scale. Findings suggest children with LD and ADHD display greater challenges with inhibition, working memory, planning, along with greater challenges in organization and metacognition. Parents of children with LD reported their children have greater levels of executive function difficulties in comparison to children with LD who do not have a secondary diagnosis of ADHD.

Keywords: learning disability, attention deficit hyperactivity disorder, Behavior Rating Inventory of Executive Function, learning, cognition

Introduction

Students identified with a specific learning disability (LD) comprise the largest individual disability population served under the Individuals with Disabilities Improvement Education Act (IDEIA) (Irwin et al., 2021). Students with a LD provide 4.6% of the entire K-12 school population (National Center for Education Statistics, 2020); however, if students at risk of LD are included, the percentage would be much higher (Geary et al., 2020). Converging evidence points to the notion that LD is a neurological disorder that results in difficulties acquiring basic and more complex academic skills (Fletcher & Grigorenko, 2017; Pennington et al., 2019). Cognitive abilities (e.g., working memory [WM]) consistently correlate with the different academic competencies in the areas of LD, as it is reflected in the LD definition in IDEIA and in the Diagnostic and Statistical Manual-5 (DSM-5) (American Psychiatric Association, 2013).

Representing a heterogeneous population, students with LD exhibit individual differences in academic achievement, growth in skills development, visuospatial memory, verbal WM, intelligence, executive functions, and other cognitive correlates (Fletcher et al., 2013; Geary et al., 2012; Geary et al., 2020; Grigorenko et al., 2020; Lee et al., 2017; Swanson et al., 2009). LD is often associated with comorbidity with other disorders, such as attention deficit hyperactivity disorder (ADHD) (Alloway & Stein, 2014; Miller et al., 2012; Westby &Watson, 2004, 2021; Willcutt et al., 2013). Not surprisingly, underlying academic (e. g., reading), behavioral (e.g., attention), and cognitive (e.g., WM) deficits of LD and ADHD account for their comorbidity. ADHD can be briefly described as deficits in executive functions.

Geary and colleagues (2020) found that specific cognitive abilities directly correlate with academic achievement (e.g., verbal short-term memory was critical for reading accuracy and fluency, whereas spatial ability was important for mathematics). However, poor in-class attentive behavior correlates with learning difficulties. The ability to control one's attention is a cognitive skill included in the umbrella term executive function. Similar to Geary et al. (2020), other researchers identified deficits in students with LD and ADHD related to executive functions, such as inhibition, cognitive flexibility, and WM (Faedda et al., 2019; Mattison & Mayes, 2012). For example, Faedda et al. (2019) identified differences and similarities in intellectual functioning and executive functions between children and adolescents with ADHD and LD. Both groups had deficits in executive functions, with the ADHD group being more impaired particularly in cognitive inhibition, cognitive flexibility, verbal memory, WM, and intellectual functioning. Mattison and Mayes (2012) observed that those students with comorbid ADHD and LD seemed to have more executive dysfunctions than those with ADHD only. What is known in the field related to executive functions (EF) for persons with ADHD and LD appears limited to the aforementioned studies, although the associations between EF difficulties in students with ADHD and students with LD have been well-identified (Biederman et al., 2008). To demonstrate, El Wafa et al. (2020) compared the EF skills of four groups of children between the ages of six and 13 (i.e., one group of students with ADHD only, another group of children with LD only; a third group of children with ADHD and LD; and a control group). Findings revealed the first three groups evidenced greater EF difficulties, suggesting EF assessments for

these three groups of students (i.e., those with ADHD, LD, and ADHD with LD) require intervention plans designed to optimize outcomes.

Executive Functions

EFs are high-level cognitive functions that enable humans to accomplish goals, regulate their behaviors, manage their emotions, monitor their thoughts, resist distractions, plan activities, and persist to complete them to reach their goals (Barkley, 2015; Denckla & Mahone, 2018). The multidimensional nature of EFs includes several cognitive processes and skills, such as working memory operations (e.g., updating), sustained attention, self-regulatory processes (e.g., self-monitoring), cognitive flexibility, metacognition (i.e., knowledge of one's own thinking), task initiation, planning, and goal-directed persistence (Dawson & Guare, 2018; Watson et al., 2016).

The developmental context of EFs must be understood to account for individual differences since most EF processes and skills are linked to the brain's frontal cortex. The course of brain networks from childhood to adulthood becomes better established during the evolution of networks that occur during development (Bernstein & Weber, 2018). Improvement of EFs is associated with maturation of the frontal lobes (Anderson, 2002). One standardized assessment commonly used to measure EFs in students is the Behavior Rating Inventory of Executive Function (BRIEF-2) (Gioia et al., 2015). Along with a student self-reporting scale, the BRIEF-2 includes a parent/teacher report rating scale for students between the ages of 11-18 years old.

Although developmental knowledge of EFs is critical to determining what tasks students can perform and those that need to be taught (Dawson & Guare, 2018), there is limited research investigating the relationships between EFs and other factors (e.g., age, comorbidities) in students with LD (i.e., Faedda et al., 2019; Geary et al., 2020; Mattison & Mayes, 2012). As the academic demands of a student's curriculum must match developmental changes of EFs, the need to further explore these relationships can provide critical information to drive educational supports and curriculum design.

In response to the aforementioned needs, this study examines the results of the BRIEF-2 as reported by parents of children between the ages of 11 and 18, all of whom had a diagnosis of LD, and some had comorbid disabilities, including ADHD. The specific question this study sought to answer is the following: What relationship(s), if any, exist between parent reports of children's EFs and other variables (i.e., age, severity of condition, comorbid conditions, household income, parent education, parent race, presence of autism, or presence of emotional/behavioral problem)?

Method

Participants

A total of 43 parents of children with LD enrolled in this study by responding to an online invitation to participate in a research study and volunteering to complete the BRIEF-2 rating scale. Inclusion criteria required participants to be at least 18 years old and self-identify as being the parent of at least one child with a diagnosis of LD. Comorbid diagnoses (e.g., ASD, ADHD)

in children did not exclude their participation. Participants were informed their enrollment was voluntary, and all data would remain anonymous. According to parent reports, all students with LD were enrolled in school within the United States, where they received special education services under the primary disability diagnosis of LD. Table 1 includes participant demographic information.

Participants completed a short online demographic questionnaire and then, proceeded to a link to the BRIEF-2 parent questionnaire. The BRIEF-2 parent report included 86 statements regarding behavior rated on a 3-point Likert scale (i.e., 1 = never; 2 = sometimes; 3 = often). Raw subscale scores were calculated for eight subscales (i.e, inhibit, working memory, shift, emotional control, initiate, plan/organize, organization of materials, and monitoring) (Gioia et al, 2015). Next, aggregated subscales were tallied into three index scores: (1) the Behavior Regulation Index (which includes the inhibit, shift, and emotional control subscales); (2) the Metacognition Index (which consists of the working memory, initiate, plan/organize, organization of materials, and monitoring subscales); and (3) a Total Score (a composite of all subscales). For all the scores, an elevated score suggests greater EF difficulties. This study employed the computerized version of the BRIEF-2 due to the face-to-face constraints of the global COVID-19 pandemic. Therefore, an email link was sent to interested participants who met inclusion criteria.

This survey study utilized descriptive statistics and correlations analysis to determine what relationships, if any, existed between variables (i.e., demographic questions and responses to the BRIEF-2 parent report). The first author confirmed collection and scoring accuracy, and reliability was ensured through independent statistical analyses performed by a trained master's degree student studying speech-language pathology. No discrepancies between data analysis were found; thus, results were determined to be reliable.

Materials and Procedures

After obtaining consent from the University Institutional Review Board (IRB), flyers including a Qualtrics link to the survey were disseminated on approved websites and social media platforms for a two-month period. Due to the nature of dissemination, researchers were unable to track the total number of qualifying individuals who may have seen the survey invitation and declined to participate. The invitation included a Qualtrics link to a demographic questionnaire, and the BRIEF-2 survey immediately followed. Prior to the BRIEF-2 survey questions appearing, participants were asked if they had a child with a primary diagnosis of LD. Only survey data from those who self-reported being the parent of a child with LD were included in this current research. Further, all survey questions had to be answered in order for data to be analyzed and reported.

Survey responses were anonymous, yet still kept confidential through the secure, university-owned and faculty-operated Qualtrics account. Data were imported into SAS version 9.4 (SAS Institute Inc., 2014) for management and analysis. The BRIEF survey responses were scored according to previously published manual guidelines. Higher scores indicate that the child has *greater* problems with the behaviors. Descriptive analyses were used to understand the level of missing data, sample socio-demographics, and BRIEF scale raw scores. Means and standard deviations were reported for continuous variables while frequencies and percentages were

reported for binary/categorical variables. A multivariate analysis of variance (MANOVA) was used to examine differences in the BRIEF scale raw scores between parent education, parent race, household income, parent age, child age, child diagnosis severity, presence of other child diagnoses, child ADHD diagnosis, child ASD diagnosis, and child emotional/behavioral problem diagnosis. A p-value < 0.05 was used to determine statistical significance.

Results

In all, 96 subjects were enrolled in this survey study. A total of 52 subjects (54.2%) did not complete any of the BRIEF questions and 1 (1.0%) completed only 33 of the 86 BRIEF questions, leaving an analytic same of 43 participants. Table 1 displays the sample characteristics. Among the parent respondents, 31 (72.1%) had at least a college degree, 33 (76.7%) were White, 40 (93%) were female, 19 (45.2%) made over $100,000, and 22 (51.2%) were between the ages of 25 and 44 years. Among the children discussed in the BRIEF questionnaire, 14 (32.6%) were between the ages of 13 and 18, 28 (70%) exhibited a mild learning disability, six (15%) represented a moderate learning disability, six (15%) demonstrated a severe learning disability; 32 (76.2%) indicated another diagnosis, with 24 (55.8%) having ADHD, 13 (30.2%) having an Autism Spectrum Disorder, and eight (18.6%) evidencing an emotional or behavioral disorder.

Table 2 displays the descriptive statistics for the BRIEF scale raw scores. There was no main effect of child age (Wilk's Lambda=0.57, $F(24, 93.41)=0.82$, $p = 0.70$). Similarly, there was no main effect of severity (Wilk's Lambda=0.72, $F(16, 60)=0.68$, $p = 0.80$), presence of another diagnosis (Wilk's Lambda=0.73, $F(8, 33)=1.56$, $p = 0.18$), household income (Wilk's Lambda=0.67, $F(16, 64)=0.89$, $p = 0.59$), parent education (Wilk's Lambda=0.58, $F(16, 66)=1.29$, $p = 0.23$), parent race (Wilk's Lambda=0.88, $F(8, 34)=0.60$, $p = 0.77$), presence of autism (Wilk's Lambda=0.84, $F(8, 34)=0.84$, $p = 0.58$), or presence of emotional/behavioral problem (Wilk's Lambda=0.75, $F(8, 34)=1.40$, p = 0.23).

There was a main effect of the presence of ADHD (Wilk's Lambda=0.60, $F(8, 34)=2.86$, $p = 0.02$). When looking at the individual components, we identified 11 key findings:

> (1) there was no difference in emotional control between children with and without ADHD (Mean (SD)=18.42 (5.47) vs. 18.63 (5.72), $F(1, 41)=0.01$, $p = 0.91$);
>
> (2) those with ADHD had elevated inhibition problems (Mean (SD) of children without ADHD=16.21 (4.89) vs. Mean (SD) of children with ADHD =19.75 (5.78), $F(1, 41)=4.53$, $p=0.04$) than those without ADHD;
>
> (3) there was no difference in shift between children with and without ADHD (Mean (SD)=15.53 (4.10) vs. 16.54 (2.95), $F(1, 41)=0.89$, $p = 0.35$);
>
> (4) there was no difference in initiation between children with and without ADHD (Mean (SD)=15.84 (3.80) vs. 17.71 (3.22), F(1, 41)=0.09, p=0.09);

(5) children with ADHD had elevated working memory problems than those without ADHD (Mean (SD) of children without ADHD=21.47 (5.23) vs. children with ADHD = 24.54 (3.90), $F(1, 41)=4.86$, $p = 0.03$);

(6) children with ADHD had elevated plan/organize problems than those without ADHD (Mean (SD) of children without ADHD=23.84 (5.63) vs. children with ADHD = 28.63 (5.03), $F(1, 41)=8.63$, $p = 0.01$);

(7) children with ADHD had elevated organization of materials problems than those without ADHD (Mean (SD) of children without ADHD=11.05 (3.94) vs. children with ADHD=14.58 (3.37), $F(1, 41)=10.02$, $p= 0.003$);

(8) there was no difference in monitor scores between children with and without ADHD (Mean (SD)=16.58 (3.92) vs. 18.08 (3.68), $F(1, 41)=1.67$, $p = 0.20$);

(9) there was no difference in behavioral regulation index between children with and without ADHD (Mean (SD)=50.16 (12.82) vs. 54.92 (13.29), $F(1, 41)=1.40$, $p = 0.24$);

(10) children with ADHD had an elevated metacognitive index than those without ADHD (Mean (SD) children without ADHD=72.95 (16.01) vs. children with ADHD = 85.83 (13.91), $F(1, 41)=7.96$, $p = 0.01$); and

(11) children with ADHD had higher total scores than those without ADHD (Mean (SD) children without ADHD=138.95 (28.21) vs. children with ADHD = 158.66 (27.14), $F(1, 41)=5.29$, $p = 0.03$).

Discussion

This survey study examines the results of the BRIEF-2 reports provided by parents of children between the ages of 11 and 18 with a primary diagnosis of LD, and some of whom had a secondary diagnosis (e.g., ADHD). This study sought to discover what relationship(s) exist between parent reports of EFs and other variables (i.e., age, severity of condition, comorbid conditions, household income, parent education, parent race, presence of autism, or presence of emotional/behavioral problem). The findings extend the extant literature in several ways.

The comorbid diagnosis of ADHD demonstrated a significant relationship to the EFs of children with LD, as reported by their parents. That is, children with LD and ADHD were reported to have greater challenges with the following EFs: (a) inhibition, (b) working memory, (c) planning/organization, (d) organization of materials, and (e) metacognition abilities. Notably, this subgroup (i.e., LD and ADHD) had higher overall total scores compared to children with LD only. These findings are significant and warrant further discussion.

Inhibition is defined as “the ability to suppress a dominant response in favor of another or no response” (van der Ven et al., 2013, p. 71). Barkley (1997) defined inhibition difficulties as a failure to: (1) delay a response for which immediate reinforcement is available, (2) stop an

ongoing response, or (3) protect from competing events and responses (i.e., interference control). DeWeerdt et al. (2013) found listening recall, often used as a measure of inhibition, to be a particular deficit in students with LD. Barkley's (1997) assertion that behavioral inhibition is a core deficit associated with ADHD was backed by the findings of Willcutt et al. (2001) that behavioral inhibition deficits were strongest in students with ADHD. One example of this type of difficulty with inhibition includes rushing through academic assignments without taking time to carefully consider the instructions provided. This current study supports the importance of considering inhibition as a challenging impediment to the academic success of students with LD and underlying ADHD.

These data indicate WM issues were noticed by parents of children with ADHD and LD. By definition, WM can be described as the concurrent storage and processing of information (Baddeley, 1992; Watson & Gable, 2010). Similar to this study, research indicates students with LD can experience deficits in WM areas controlled by the phonological loop and central executive, manifesting in domain-general working memory difficulties in academics, typically in reading, mathematics, and writing (De Weerdt et al., 2013; Swanson & Siegel, 2001). However, by definition, WM involves attentional control (Martinussen & Major, 2011). Students with ADHD often exhibit higher levels of inattentive behavior when presented with tasks that place high demands on WM which, in turn, leads to poor academic performance across subjects (Martinussen & Major, 2011). Thus, DuPaul et al. (2013) suggests that while students with LD may receive interventions in one specific setting, students with comorbid LD and ADHD should receive interventions to address deficits across many settings, suggesting the critical importance of "cross-setting collaboration" (p. 48). These current findings support this assertation, as they highlight WM difficulties that have been observed by parents of students with LD and ADHD.

Planning and organization involve strategizing about how to complete a task or assignment, or a reach a goal successfully (Kaufman, 2010). For students with LD, planning and organization deficits often appear as deficits in reading comprehension, including the ability to read with a specific purpose in mind, or to answer a specific question (Kaufman, 2010). Students with LD can struggle with writing tasks that require planning and organization of a multi-step process (Graham & Harris, 1993; Watson et al., 2016). Similarly, Jacobson and Reid (2010) reported students with ADHD do not spend time planning before writing, despite being reminded to do so and provided with required components of an essay. Heavily related to planning and organization is material organization, which can be described as the hands-on, physical organization of materials necessary to carry out a plan (Kaufman, 2010). This is a deficit shared by students with LD and ADHD (Langberg et al., 2013; Meltzer & Krishnan, 2007). As the importance of planning and organizing only increases as students progress through academic courses, the need to investigate how to best support the needs of students with LD and underlying ADHD becomes of growing importance. These findings were underlined by the reports of parents who participated in this current study. Parents felt that their children had less-than-optimal planning and organization skills.

Metacognitive difficulties (i.e., deficits in awareness about thinking and regulating thinking) have been identified in students with LD, often manifesting in poor planning skills, ineffective self-monitoring of their own learning, and challenges in identifying and correcting their own errors (Mason et al., 2011). Students with ADHD have also been identified as having

metacognitive difficulties that can ultimately impact their abilities to regulate behaviors and focus on tasks (Capodieci et al., 2019). Perhaps it is not surprising that when these two conditions are compounded (i.e., LD and ADHD), greater metacognitive challenges are observed in comparison to parental reports of children with LD who do not also have ADHD. Nonetheless, there is a paucity of research specifically focusing on how metacognitive deficits can be compounded in students with LD and ADHD. The importance of acknowledging this increase in metacognitive challenges for students with both LD and ADHD cannot be understated. Working with students with compounding diagnoses should be not only considered, but also adjusted for an individual student basis.

Limitations

These findings should be interpreted within the context of several limitations. First, the use of a survey tool to gather data has inherent limitations, as does the selection of what demographic questions and which survey tool is used. The BRIEF-2 Parent report is a valid and reliable means of reporting EF perceptions (BRIEF-2; Gioia et al., 2015) and administration of this tool was relevant and appropriate due to current COVID-19 global pandemic restrictions. Nonetheless, since data were self-reported, there is no guarantee that respondents provided accurate information (Wright, 2005). Secondly, sample bias is a possible limitation, since the nature of the survey may have excluded parents who do not have access to the Internet or who have difficulty reading, possibly excluding parents of students who live in rural locations, represent lower socio-economic groups, or have a reading disability (Coughlan et al., 2009). The third limitation relates to the sample size. That is, our sample was small and only included parents of children with a diagnosis of LD, or comorbid conditions that include LD. Parents of children with other disability diagnoses (e.g., intellectual disability) were not included in this investigation; thus, generalization of these current findings should be analyzed within this context. Finally, the fourth limitation centers on the variability of reported disability diagnoses. That is, some children had LD only (i.e., no reported secondary diagnosis), whereas other children had a primary diagnosis of LD as well as a secondary disability diagnosis (e.g., ADHD). Varying disability diagnoses could limit generalization of reported findings.

Implications for Research

Based on findings from this survey study, coupled with the paucity of literature related to measuring EFs in children with LD, findings suggest several implications. First, it is recommended researchers consider conducting a similar study that uses methods other than parent reports to assess EFs in children with LD. Second, researchers should utilize methods other than the internet to disseminate flyers to potential participants. Similarly, the third recommendation relates to sample size. It is recommended researchers aim to sample a larger sample to enhance generalizability of findings. The fourth recommendation for research relates to variability in disability diagnosis. In a larger-scale study, it is recommended researchers tease out disability diagnoses and do more thorough comparative analyses between subgroups of children with LD.

Implications for Practice

There is substantial research connecting EFs and LD (Alloway & Stein, 2014; Cain et al., 2004; Geary et al., 2020; Mattison & Mayes, 2012; Toll et al., 2011). The negative effects of EF weaknesses have been observed in specific academic domains, such as reading comprehension (Spencer et al., 2020), mathematics (van der Ven et al., 2012), and written language (Drijbooms et al., 2017). Conversely, different EF processes contribute to distinct academic areas.

Acknowledging that EF processes are developmental and have been associated with student academic performance is the first step to intervention. Evidence from few studies suggests that EFs are malleable and deficits in EFs can be enhanced through specific interventions (Diamond & Lee, 2011; Diamond & Ling, 2016; Espinet et al., 2013). The second and critical step is to understand how EFs, such as working memory, inhibition control, and cognitive flexibility, affect academic performance. This is essential to designing classroom instruction and to teaching students specific compensatory strategies. For example, to address poor inhibition, students should be taught self-regulation strategies within the academic area, such as the Self-Regulated Strategy Development (SRSD) for writing (Harris et al., 2008). Teaching students how to use graphic organizers (e.g., Story Mapping) can support working memory.

As mentioned earlier, DuPaul et al. (2013) suggested that while students with LD may receive interventions in one specific setting, students with comorbid LD and ADHD should receive interventions to address deficits across many settings, suggesting the critical importance of "cross-setting collaboration" (p. 48). There is, then, a critical need to understand the deficits and needs of students with LD and comorbid ADHD, not only in one area on which an IEP team and a student's teachers might focus for a student with LD in reading or in math, but across all settings. For example, students with metacognitive deficits often have difficulty distinguishing between reality versus what is not realistic (Yong & Kiong, 2005). Thus, it is more likely that a student who has difficulty with inhibition will rush through academic assignments without taking time to carefully consider the instructions provided to complete the task.

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Tech Talk
Make it Visible: Video Record Teaching and Learning

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Nancy Caukin, Ed.D. is the Associate Dean for Undergraduate Programs at North Greenville University. She began her career working in outdoor education before her fifteen-year tenure as a high school science teacher. She has been a teacher educator in higher education since 2013. Her research interests include teacher candidate beliefs and sense of self-efficacy. She is on a journey of being an EdTech learner along with her teacher candidates.

Abstract

Life for students and teachers has proven to be quite unpredictable, whether an unexpected absence, extended illness, outbreaks of communicable diseases, or even inclement weather (Johnson, 2021). Continuing instruction despite these issues is consequential for student learning. Even with planned absences (students or teachers), intentional continuation of the learning trajectory can help students from falling behind. Additionally, teachers need tools to help them reflect and grow in their instructional practices. Video recording offers realistic views of teacher practices because it captures the truth of classroom instruction. While teachers may find video instruction daunting at the onset, it offers them a way to look at what is actually happening in the classroom and then make adjustments. For this reason, the use of video recording has a myriad of benefits to both the student and the teacher.

Benefits to Students

Video recorded lessons provide students with the ability to make up missed classes, control when and where they learn the content, and review material in preparation for assessments. Benefits include improved study habits, increased learning outcomes, and even improved affective and cognitive attitudes towards video recordings (Kay, 2012; Rae & McCarthy, 2017). Student learning increases when students have the ability to hit the rewind button and revisit teacher

instruction. Students can control how many times they watch the teacher model information and how quickly by pausing and rewinding what is being said (Karp & Gallagher, 2019). At the beginning of this school year, the daughter of one author of this article expressed concern over returning to in-person learning where videos were no longer the norm. She shared that the ability to rewind videos is what helped her master content in the previous year. In order to combat that problem this year, the student is using online videos to bolster instruction but has noted that teacher made videos are more helpful because they reflect what happened in the classroom. Students can learn information at their own pace by using teacher-created videos. When a student needs to revisit or gain extra practice, having the classroom video proves helpful. Dham (2021) explains, "Video-based learning provides the students with an opportunity to learn the subject at their convenience in the most effective way" (para. 1) . Students who can return to instruction are able to pace their learning. This is beneficial to the accelerated student as well as the student who needs additional help.

Furthermore, while schools are no longer closing their doors and moving to quarantine status, there will always be student absences. When students are absent, without video, there is no way to fully provide instruction that takes place in the classroom. However, when students are provided the video of the lesson as it occurred, there is the added benefit of teacher modeling and student discussion that would otherwise be missed (Leban, 2020).

Video presentation is central to the concept behind the Flipped Classroom. The flipped classroom is one in which students get the information necessary for class as homework and then practice the skills with the teacher in person. Video presentation of information is one way that the flipped classroom becomes an effective means of teaching. The flipped classroom began with two Chemistry teachers, Bergmann and Sam, who explain that it models instruction where the students "need to be physically present" for teachers to "help them when they are struggling" (Schaffhauser, 2009, para. 4). Students watch video of instruction at home and then work through models and practice in the classroom where the teacher can assist. Bergmann and Sams (2012) advocate for teachers to create their own videos rather than using curated videos in order to reach the needs of their students and note that making videos takes time, saying teachers should "allow 30 minutes to make a 10-minute video" and may need to realize that the video does not have to be "perfect" (para. 7). Teacher-created videos are powerful because they represent information that the individual teacher knows his/her students need. These videos are presented by the student's actual teacher rather than someone that is unknown online.

Benefits to Teachers

Video representation of classroom instruction is not only beneficial to the students but is also beneficial to the teachers (Knight, 2018). When teachers go back and watch videos of themselves teaching live in class, they are able to observe how they engage in the material and how they engage with the students because the "best way to learn about how we teach is to watch how we teach" (Knight, 2018, p. 38). Sometimes, the vision of instruction does not match the image the teacher holds in his/her mind. When teachers take time to watch class in action, they see where the learning is taking place. Sometimes, it is revealed that within the lesson, the teacher is not seeing "learning - they had only seen teaching" (Hattie, 2012, p. 138). In order for classwork to be effective, the teacher should be able to see student mastery of concepts through

the lesson and not only evidence of instruction. Using videos can help teachers see the broader context of the classroom and students as they engage in learning. It presents a view not always seen in real time, which can be enlightening to the teacher as they reflect on the teaching and learning.

The use of classroom videos provides a powerful tool for professional development as well (Knight, 2018). When teachers agree to work together on a lesson, teach the lesson in their classrooms and video part of the lesson, and then share those videos, teachers have the opportunity to participate in meaningful conversations about their instruction (Knight, 2018). When teachers gather to watch these videos, it is important that they "watch the impact of a teacher teaching" (Hattie and Zierer, 2017, p. 55). This becomes even more meaningful because "a peek into the past" (Chen, 2003) allows teachers to see students' responses and feedback after the fact. Since teachers cannot always see all students, recording can allow them to see later what they could not see in real time, thus a peek into their practices as a teacher reveals new meanings for their teaching practices. Teachers can then share with each other to build "a common dialogue about teaching and impact" (Hattie and Zierer, 2017, p. 55). This builds a powerful answer to the question "what do we want students to learn?" (Dufour et al, 2016, p. 36) because the answer to the question is now visible through the video. Furthermore, as teachers view videos of their work in the classroom, they tend to "find themselves reflecting deeply on their practice" (Yaffe, 2015, p. 38). This deeper reflection has the potential to lead to greater teacher growth.

Considerations

There are several things to consider when recording your lessons. If recording a live lesson, there may be privacy issues as well as sound and video quality issues (Johnson, 2021). Student privacy is legislated through the 1974 Federal Education and Rights Privacy Act and "requires all student related records be safeguarded to ensure student privacy" (Walker, 2021, p. 7). Teachers should give students the option not to be part of the video (Walker, 2021) and should partner with administration to ensure adherence to FERPA laws. Additionally, students may feel less open to share questions in their learning process with the knowledge that the camera is on them (Supiano, 2018). Teachers should consider not only how the video will be used (for student publication or personal use) but also where the video will be published. Teachers should work with school officials to ensure adherence to "policies, practices, and responsibilities" in relation to video, posting, and student privacy (Walker, 2021, p. 10).

Privacy concerns are not limited to the student; teachers also may have concerns over the release of videos of their teaching when errors are made or discipline is addressed (Supiano, 2018). Therefore, teachers, administrators, instructional coaches, and Professional Learning Communities should set ground rules on how videos will be discussed and used together.

Teachers may also feel threatened by sharing video of their work with other instructional leaders such as coaches or with members of their Professional Learning Communities for fear of judgment and critique (Vedder-Weiss et al, 2019). This fear of critique may limit their willingness to share the video which could also mitigate the benefits that are obtained from using video tools.

Tools

Teachers may choose to use a variety of tools in the classroom to help make videos accessible to students. Perhaps one of the easiest tools is the use of a tripod and a cell phone to video the classroom. For individual teacher viewing, this is an effective means of recording. While the video will be still (static), this is a low-cost way to capture a lesson. Teachers could upload the video to YouTube, making it cloud-based and accessible on any device. Teachers may also use tools such as Zoom, Screencastify and Screen-Cast-O-Matic to capture the projected screen, recording of the lecture, and discussion in the classroom. In order to ensure that the video is private and not accessible outside of where the teachers share it, teachers set privacy settings (recommended to private or unlisted) when uploading the video. Some learning management systems include video capture tools, for example, Blackboard Collaborate. This online tool can be used as a virtual classroom, but also allows teachers to capture a video recording of the lesson, including whatever documents are presented on the computer. GoReact is a cloud-based video platform that is useful for video recording any performance, including teaching. It is fee-based and allows for time-stamped feedback, thus is a useful tool for professional development and personal reflection. To capture the teacher as he/she moves about the classroom, a dynamic video recording, using a Swivl, a robotic platform with accompanying software, can be purchased.

Another way that teachers can share video with students is through Nearpod, Playposit, and Edpuzzle. Each of these online programs allows the teacher to embed questions for students to answer while viewing the teacher-made video thus bolstering student engagement. Teachers can share the link to the video with students through their school's Classroom Management System (CMS) or, in the absence of a CMS, through email or Google Drive.

Conclusion

The use of videos in the classroom is a powerful tool for the student and the teacher. It is an opportunity for both student and teacher to learn and grow. While it can be seen as one more thing that teachers need to do, it can also be done simply. Teachers do not have to create separate videos for recorded lessons to be able to be utilized. Teachers can make the videos of the class in "real-time", which enables students to have the benefit of using video instruction, and it can provide feedback to the teacher of their instruction. In 2020-2021, video instruction was a requirement to ensure that students did not fall behind during pandemic teaching. In 2022, it is no longer a requirement, but it should be the norm in every classroom to help all students learn and all teachers grow.

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Children and Families: Health and Wellness
A Family Systems Approach to Addressing Depression in Children

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Abstract

Children of all ages and around the globe can experience depressive symptoms. However, certain symptoms of depression can be expressed in distinct ways from depression in adulthood. While many individualistic approaches are utilized to treat depression in childhood, family systems modalities can be utilized with effectiveness since family factors can contribute to depressive symptoms (Ghandour et al., 2019). Family systems theories often examine and address the interactions between family members and the context in which the interactions occur. Specifically, structural family therapy has been demonstrated to be effective in reducing childhood depression symptomology (Jiménez et al., 2019). Structural family therapy focuses on boundaries, hierarchies, and subsystems within a cultural context. The purpose of this literature review is to propose that structural family therapy is appropriate for addressing depression in childhood. Additional discussion includes structural family therapy being appropriate for various cultures around the globe.

Major depressive disorder is a common mental disorder affecting children of all ages (James et al., 2018) and becomes higher in prevalence for children who have entered puberty (Costello et al., 2006). Mental health problems in childhood, such as depression, have been shown to have a more negative effect (e.g., a reduction in work resulting in a lower SES outcome) in the person's adult life when compared to the effect of physical health issues (Delaney & Smith, 2012). Furthermore, depressive disorders were found to be one of the leading causes for disability in 2017 (James et al., 2018). Individuals who experienced depressive symptoms at an early onset typically had poorer quality of life, more depressive episodes, greater medical psychiatric comorbidity, more suicide attempts, and more significant symptoms severity than those with later ages of onset of major depressive disorder (Zisook et al., 2007). Given the research

demonstrating the negative effect that early onset of depression has on an individual, it is imperative to consider interventions.

Family systems therapy has been demonstrated to be an effective approach for addressing depression in childhood (Jiménez et al., 2019; Tompson et al., 2017; Trowell et al., 2007). Due to the reliance of children on their caregivers, it is prudent to involve the family in addressing mental health concerns (Steinberg, 2001). While many approaches operate from an individualist approach (see Bernaras et al., 2019), consideration of the family is significant since children with a primary caregiver who rated their own mental health as fair or poor in mental or emotional health had an increased rate of depression at 13% (Ghandour et al., 2019). The purpose of this literature review is to propose structural family therapy as an effective modality for treating children with depressive symptoms.

Theories and Treatment of Depression

Theoretical models posit various causation for depression (Bernaras et al., 2019). Biological and psychological are two main perspectives regarding etiology. Biological theories have postulations, such as alterations in brain structure (Whittle et al., 2014), genetic factors (Scourfield et al., 2003), and noradrenaline deficits (Narbona, 2014). Psychological perspectives explain depression through theories, such as attachment theory (Bigelow et al., 2013), behavioral models (Skinner, 1953), cognitive models (Beck, 1987), and interpersonal theory (Markowitz & Weissman, 1995). While many theories focus on psychopathology in an individual context, it is important to consider systemic theories.

Watson (2012) defined family systems theory as a framework for understanding human functioning that focuses on interactions between family members and between the family and the context in which it is embedded. Family systems theory posits reciprocal causal explanations as opposed to linear (Robbins et al., 1998). To understand depressive symptoms from a child, family systems approaches would explore the interactions and context for such behavior. Interactions and context for depressive symptoms can first be assessed within the family environment. Tompson et al. (2017) found that family environment characteristics can be a predictor of recovery among depressed children. A study comparing the effects of family-focused treatment for childhood depression (FFT-CD) and individual supportive psychotherapy for children, who were 7 to 14 years of age diagnosed with depressive disorders, demonstrated that children had better outcomes with FFT-CD (Tompson et al., 2017b). Additional studies have shown an effectiveness in utilizing family systems theories for addressing depression in childhood (Asarnow et al., 2020; Luby et al., 2021). Specifically, one of the most prominent family therapies is structural family therapy (Sexton et al., 2003) developed by Minuchin (1967), which has been demonstrated to address depression in childhood (Jiménez et al., 2019; Weaver et al., 2013).

Depression in Childhood

The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM–5; American Psychiatric Association [APA], 2013) is often used to determine if a person meets the criteria for a depressive disorder. Several diagnoses are possible for a person exhibiting depressive

symptoms: persistent depressive disorder (dysthymia), premenstrual dysphoric disorder, substance/medication-induced depressive disorder, depressive disorder due to another medical condition, single depressive episode, recurrent depressive disorder, persistent mood (affective) disorder, and other mood (affective) disorders.

For a person to be diagnosed with major depressive disorder, several criteria must be met nearly every day for a minimum of two consecutive weeks. Possible criteria include a depressed mood, diminished interest in most activities, significant weight loss, insomnia or hypersomnia, feelings of worthlessness diminished ability to concentrate, and recurrent thoughts of death or suicide. Consideration for children includes the understanding that children can "mask" depressed moods with irritable moods and acting out and not meeting expected weight gain rather than a significant loss in weight (APA, 2013).

The onset of major depressive disorder can occur at any age, but there are higher prospects for symptoms occurring with puberty (APA, 2013). Children, aged 3-17, have a prevalence rate of 3.2% for depression and nearly 80% had received treatment for depressive symptoms (Ghandour et al., 2019). Boys, 10 years or younger, are more likely to be diagnosed with depression than girls. However, by early adolescence, teenage girls are 1.5-3 times more likely to be diagnosed with depression (APA, 2013). Researchers using self-report measures, such as the Children's Depression Scale (Lang & Tisher, 1978) and the Children's Depression Inventory (Kovacs, 1992), have found children experiencing high depressive symptomology at 4.2% in Spain (Bernaras-Iturrioz et al., 2013), 6.2% in Finland (Almqvist et al., 1999), and 10% in Australia (McCabe et al., 2011).

Structural Family Therapy

Salvador Minuchin began working in family therapy as a child psychiatrist. Minuchin and colleagues at the Wiltwyck School for Boys were challenged by the ineffectiveness of utilizing an individualistic approach for juvenile delinquents. He then began to recognize that his clients' behaviors were not simply an action but a reaction. Through trial and error, he and his colleagues taught themselves family therapy. By 1965 Minuchin was the professor of psychiatry at the University of Pennsylvania and the director of both the Children's Hospital of Philadelphia's Department of Psychiatry and the Philadelphia Child Guidance Clinic. He continued to insist that all child psychiatry is family psychiatry and that human behavior, including psychopathology, must be understood within the context in which it occurs (Sexton et al., 2003). The most predominant context is human context. Human context involves systems of rules that regulate behaviors and reciprocal processes. Subsequently, actions in one part of the system influence another part of the system. Therefore, all family members are encouraged to be included in the therapy sessions (Minuchin, 1974). In the 1970s, Minuchin and his colleagues developed structural family therapy, which became one of the most influential family systems approaches and resulted in family therapy being accepted into mainstream psychiatry (Sexton et al., 2003).

Therapists utilizing structural family therapy map family structure to address presenting problems. Important concepts of structural family therapy include boundaries, hierarchies, and subsystems. Minuchin postulated that restructuring to realign the hierarchies and boundaries would resolve family issues (Gerhart, 2018). Boundaries are defined as rules for psychological

and physical distance between members of the family. Boundaries determine the degree and management of distance, closeness, hierarchy, and family roles (Minuchin & Fishman, 1981). Boundaries typically are organic rather than static. Three types of boundaries are considered: clear boundaries; enmeshment and diffuse boundaries; and disengagement and rigid boundaries (Gerhart, 2018). Clear boundaries allow each person to develop and maintain a sense of identity and differentiation with simultaneously allowing for close emotional contact. A therapist can see results of clear boundaries by a person balancing distance and closeness by the customs of their culture. Enmeshment and diffuse boundaries do not allow for a sense of identity and differentiation due to an overt sense of connection and mutuality. A therapist can make such an assessment by observing family members interrupting one another, mind reading, insisting on high levels of protectiveness, and/or feeling threatened at disagreement or difference.

Additionally, a therapist will note if a family reports problems in one or more members and likely about complaints about the family interaction to assess for enmeshed relationships and diffuse boundaries (Gerhart, 2018). Disengagement and rigid boundaries often lead to autonomy and independence without emotional connection, which typically results in emotional and sometimes physical isolation. A therapist can make such an assessment by observing family members lacking in reaction or repercussions to problems, significant freedom for most members, few expressions or demands for loyalty and commitment, and engaging in parallel actions instead of reciprocal interactions. For any assessment of boundaries, a therapist must view the family within the context of culture (Gerhart, 2018).

Minuchin (1974) defined a family as a system consisting of multiple subsystems. The three important subsystems assessed are couple, parent, and child/sibling. Minuchin made two assessments concerning subsystems: discerning if there is a distinction between the parent and couple subsystem and a clear boundary between the parent and child/sibling subsystems. If a family presents an issue concerning a child, the therapist will first make an assessment concerning the parental hierarchy to determine the intervention. Three forms of parental hierarchy include effective, insufficient, and excessive. Effective parental hierarchies are evidenced by parents setting boundaries while concurrently maintaining emotional connection to the child. Insufficient hierarchies are evidenced by a permissive parenting style of not effectively managing the child's behavior and enmeshed boundaries. Excessive parental hierarchies are evidenced by strict rules and severe consequences resulting in rigid boundaries between the parents and child (Gerhart, 2018).

Diagnosis

Structural family therapists diagnose based on the working hypothesis that is developed from the observations and experiences due to joining the family (Minuchin, 1974). This differs drastically from a psychiatric diagnosis that often gathers data about or from the client and assigns a label to the symptoms described. A family diagnosis includes the therapist's accommodation to the family to develop a therapeutic alliance following the assessment. Typically, a family identifies one member of the family (i.e., "identified client"). Families typically exhibit tendencies to focus attention on the identified client and on the past and express a desire for change to occur with the identified client rather than on focusing on the preferred transactional patterns in the present day. The therapist will broaden the focus to include the family's interactions as a contributing factor

to the problem situation. To assess these interactions, the therapist will assess six areas: preferred transactional patterns, the system's flexibility and capacity for restructuring, resonance, life context, developmental stage, and the identified client's symptoms as used to maintain the family's preferred transactional patterns. Unlike psychiatric diagnoses that are often static, family therapists' diagnoses are often evolving. The evolving diagnoses are related to context and provide ongoing therapeutic interventions. Therefore, the "[d]iagnosis and therapy become inseparable" (Minuchin, 1974, p. 131).

In relation to treating presenting concerns, structural family therapists identify three possible relationships between the family system and the symptom (e.g., depression): ineffectual challenger, "shaper," or "beneficiary." Families who are ineffectual challengers of a symptom are considered passive and even enabling. The family fails to challenge the symptomatic member to maintain a highly enmeshed or disengaged structure. Families who are "shapers" of symptoms typically mold the person's experience and behaviors, such as a child who is triangulated into the couple subsystem conflict. Families who act as a "beneficiary" utilize the symptom to maintain the family structure (Gerhart, 2018). For example, a depressed child provides the parents with a way to unite and/or distract them from their marital issues. Such assessments in family structure then lead to the use of intervention.

Interventions

Structural family therapists utilize such interventions as enactments, systematic reframing, boundary making, and challenging the family's certainty and worldview (Gerhart, 2018). Enactments are considered a distinctive intervention within structural family therapy, in which the therapist encourages the family to reenact an interaction or conflict as opposed to talking about them in session. Systemic reframing involves the therapist acknowledging that all behavior is reciprocal, such as a pursuer/distancer pattern. This removes the blame from one person and distributes it evenly. Boundary making is a type of enactment that addresses rigid or diffuse boundaries allowing for an interruption of interaction patterns. Therapists challenge family's certainty about unproductive assumptions and worldviews by overt questioning. Examples of assumptions that are challenges are "The kids' needs come first," and "It's better to keep peace than start conflict." Additional interventions include intensity and crisis induction, unbalancing, expanding family truths and realities, making compliments, and shaping competence (Gerhart, 2018).

Modern Society Implications

In modern society it can be appropriately questioned whether a theoretical framework from the 1960s is relevant in modern society. McAdams et al. (2016) assessed the relevance of structural family therapy with three indicators: frequency of relevant publications, contemporary significance of client issues and treatment in publications, and an indication of ongoing assessment and refinement of the clinical process and outcome in publications. Per this assessment, publications have remained steady at an average rate of more than three publications a year. Additionally, structural family therapy has been utilized in recent years for a plethora of client issues and in different treatment settings. For instance, publications demonstrate application of the model to address bullying (Butler & Platt, 2008), parental alienation syndrome

(Gottlieb, 2013), adolescent eating disorders (Loeb & LeGrange, 2009), and bipolar disorder (Miklowitz, 2012). Furthermore, the model has been utilized in public schools (Gerrard, 2008), school-family-community collaboration efforts (Messina et al., 2015), and children's residential treatment centers (McLendon et al., 2012). McAdams et al. also found that between 2000 and 2015, five process and four outcome research studies focused on structural family therapy. Such evidence demonstrates the clinical relevance for structural family therapy in modern society.

Diversity Considerations

Structural family therapy has a history of engagement in multicultural settings and with diverse clients (Corey, 2013). The model was developed by working with people from a low socioeconomic status unlike many theoretical approaches that were based upon work with the middle-class population (Minuchin, 1967). Gerhart (2018) acknowledged that Minuchin and proponents of structural family therapy were from immigrant and diverse backgrounds and, therefore, acknowledged strengths in diverse families. Structural family therapy's greatest strength regarding diversity is that family structure is consistently assessed in the context of setting and culture (Epstein et al., 2012). Furthermore, boundaries and hierarchies are restructured and reinforced in the context of cultural values (Epstein et al., 2012). Given that Pedersen (2001) called multiculturalism the "fourth force in counseling," it is important to acknowledge how structural family therapy is appropriate across cultures. Epstein et al. (2012) stated that structural family therapy is an appropriate modality for Chinese families due to assessment occurring with a cultural lens, family hierarchy being a central tenet, and the therapist operating as an expert. Immigrant families with first generation Asian Americans experiencing differing acculturation issues that could result in conflict among family members could benefit from structural therapy as its principles are compatible with Asian American values (Kim, 2003). Santisteban and Mena (2009) developed Culturally Informed and Flexible Family-Based Treatment for Adolescents with structural family therapy as the foundation. Additional modifications of structural family therapy have demonstrated effective in reducing drug use with Hispanic youth and an improvement in family functioning with African American families (Robbins et al., 2008). Gerhart (2018) reported minimal research specifically being conducted regarding gay, lesbian, bisexual, and transgender couples and families utilizing structural family therapy; however, Minuchin (1996) described utilizing this approach with a gay couple. Additionally, Coates and Sullivan (2005) have reported applying tenets of the model with same sex parents. Due to the cultural consideration, structural family therapy can be appropriate for addressing childhood issues cross culturally.

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Education by the Numbers

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Several factors contribute to student success and achievement. Students' attendance has been shown to affect students' success in school (Hanson, 2020). However, it appears that less attention is given to how teacher absentees affect student success (Hanson, 2020).

Research shows that teachers are the most important in school factor for student learning (Hanson, 2020). Teacher attendance is directly related to student achievement. For example, Miller, Murnane, and Willett (2008) assessed that 10 additional days of teacher absences reduced achievement in mathematics of fourth grade students by 3.2% of a standard deviation. Moreover, they found that 10 days of teacher absences resulted in some students' designation in the state proficiency system to be lowered (Miller, Murnane, & Willett, 2008). This data suggests teachers' absences can lead to learning loss for students. What does the numbers say about teacher absences?

Teacher Absences		
	Reasons	Percentages
	Sick Leave	52%
	Personal Leave	23%
	Professional Leave	18%
	Other	7%
Categorizing Teacher Absences based on 187 working days/year		
Chronically Absent	18 or more days (22days average)	10%
Frequent	11-17 days/year	25%
Moderate	4-10 days/year	47%
Excellent	0-3 days/year	18%

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STEAM
Holistic Identity Development in STEAM

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Abstract

Holistic STEAM programs can benefit children by allowing them to develop an intersecting identity in STEAM disciplines, explore real-world issues more broadly, think critically and innovatively, solve problems using integrated approaches, and have confidence across multiple fields of study. Much of the current research situates identity development in single subjects such as science, math, or engineering. However, a broader conceptualization of identity in STEAM can influence the creation or progression of STEAM curriculum, environments, and programs to support the unique, organic construction of a child's identity development across multiple disciplines. Suggestions for creating optimal conditions for holistic STEAM identity development include using an interactionist approach, developing meaningfully integrated and

relevant real-world explorations, utilizing inquiry, interest, and play, and using a flexible curriculum that allows for divergence and creativity.

Keywords: STEAM, STEM, Play, Inquiry

Introduction

Identity studies are increasing in STEM research. Students' construction of scientific identity is well documented, as is identity development in mathematics. Young scientists and mathematicians view themselves as such through their own interests, passions, sense of belonging, and natural proclivities and talents (Kim & Sinatra, 2018; Peart, 2018). Likewise, research in engineering and technology have explored identity development, and the benefits are clear. When students establish an identity in their field of interest (e.g., a child who self-identifies as an engineer), they develop confidence, competence, and persistence (Choe & Borrego, 2019). They also tend to operate within or develop a growth mindset, which allows them to persevere through the difficulties or challenges of their discipline (Peart, 2018). Despite the substantial literature on identity in each of the individual STEM fields, very few scholarly works examine identity in STEM as a whole and fewer still investigate the phenomenon within the STEAM framework.

Drawing on constructivist theory and aspects of the whole child, the author of this work examines the literature and theoretical undergirding for identity development in STEAM. Furthermore, the author of this paper presents the case for a holistic connectivism in STEAM identity development that involves an interactionist approach, meaningful integration and relevant contextual explorations, inquiry and interest-based learning, play-based environments, and a flexible curriculum that allows for creativity and divergence. It is well documented that children can develop an identity in an individual STEAM field, but a broader, more holistic approach can provide children with the opportunities and meaningful contexts to expand that identity to include multiple, interconnected disciplines and sub-disciplines within STEAM as a whole.

Relevant Background and Literature

In 2001, administrators at the National Science Foundation (NSF) reorganized the acronym, SMET (Science, Mathematics, Engineering, and Technology) to form the now-widely recognized acronym, STEM. Following critical reports, such as the *Rising Above the Gathering Storm* (2005), which was published out of the National Academies of Science, Engineering, and Medicine, the academic proficiency and post-education productivity of U.S. students in STEM fields was critically analyzed. It was determined that despite the vast and growing evidence that STEM proficiency had both measurable and immeasurable societal benefits, U.S. students were lacking in STEM achievement as compared to other countries (Hallinen, 2021).

STEM education efforts aimed to help students develop STEM literacy, or the ability to apply content knowledge from multiple disciplines to solve problems that could not be solved through the lens of a single discipline (Perales & Arostegui, 2021). Furthermore, STEM education was meant to "improve critical thinking skills, and be creative, logical, innovative, and productive" in

real-world contexts (Widya & Rahmi, 2019, abstract). STEM leaders also sought to build up traditionally disadvantaged groups including students of color and students from low SES backgrounds to participate and prosper in STEM fields (Xie et al., 2015). Beyond the benefits to the individual, STEM education also provided a mode for the U.S. to preserve and grow its economic and societal prosperity, address problems through innovation, and prepare a globally oriented workforce with the knowledge and skills necessary to fill rapidly expanding/evolving STEM careers (Hallinen, 2021).

By 2006, Yakman (2019) created the first STEAM framework, not to arbitrarily add another subject, but to provide a meaningful, real-world context (situated in the liberal arts) for which the other subjects could be explored. This framework has led to highly creative and innovative approaches in the Arts and STEM fields, and has led to meaningful, contextualized interdisciplinary and transdisciplinary links in STEAM education programs (Mejias et al., 2021). STEAM education efforts sought to incorporate the humanities, as STEM fields are still a human endeavor, and to blur the lines between academically separated disciplines through a more integrated approach. As Perales and Arostegui (2021) put it, "STEAM education could be defined as one that proposes an integrated teaching of scientific-technological, artistic, and, in general, humanistic competencies, with integration understood in a progressive sense that goes from interdisciplinarity to transdisciplinarity" (para. 8). STEAM was also meant to utilize the arts to leverage methodologies and strategies like problem-based learning and inquiry-based learning to boost critical thinking, creativity, and the interconnectedness of concepts (Flocchini, 2017).

In recent years, STEM and STEAM education efforts have seen a significant boost in funding and overall support with the U.S. Department of Education's STEM Education Strategic Plan, *Charting a Course for Success: America's Strategy for STEM Education*, which was released in 2018. As a part of this framework, three priorities have arisen, including building STEM literacy, increasing DEI (Diversity, Equity, and Inclusion) in STEM fields, and developing the STEM workforce for an ever-changing future (Committee on STEM Education, 2018). However, the federal framework lacks a substantial emphasis on helping students build identity in any of the STEM or STEAM fields, let alone an intersecting identity across multiple fields.

Identity in STEAM Fields

The development of identity in individual STEAM fields has been well researched, but there are some inconsistencies regarding how identity is developed. It could be built upon interest in the subject, through successful experiences within the subject, like a student getting good grades in science, for example, or it could also be an entirely independent construct that is unique to the individual (Vincent-Ruz & Schunn, 2018). Factors that are critical in identity development are interest, intrinsic motivation, positive experiences, relevant (real-world)/practical experiences, and representation (i.e., students see people in those fields who look like them) (Eren, 2021; Vincent-Ruz & Schunn, 2018). The benefits of identity development include a robust sense of belonging, increased performance and success and perseverance through challenges (Chen et al., 2020; Hernandez et al., 2017).

A Conceptual Framework for Promoting STEAM Identity Development

To provide meaningful opportunities for children to build intersecting identities across STEAM fields, it is necessary to understand the nature of STEAM, which encourages transdisciplinary learning. The world is complex and evolving with new challenges that arise every day. New and old problems alike cross boundaries and require people to have a varied toolkit for solving those multi-disciplinary problems. As such, the "transdisciplinary integration of STEM teaching and learning across STEM fields and with other fields such as the humanities and the arts enriches all fields and draws learners to authentic challenges from local to global in scale" (Committee on STEM Education, 2018, p. 20).

If students are exposed to problems that foster the development of critical thinking and analysis, problem-solving, and creativity, they will be better equipped to identify and actively engage with future problems (Committee on STEM Education, 2018). Therefore, it is not just a novel or trending educational recommendation, but a necessity that students build these types of skills through relevant, active experience. However, to be well equipped does not guarantee the necessary drive or motivation to enter STEAM fields or careers. An identity, built through years of sustained, relevant, educational practice, meaningful experiences, and at least some modicum of academic success can foster that intrinsically motivated drive. In other words, it can give children a purpose or mission to explore those fields throughout their careers.

Identity in one STEAM field is healthy with many benefits, as noted in the literature review, but it is limited in its capacity to engage across multiple disciplines. In other words, students may stick with what is safe and familiar, rather than take the risk of venturing too far outside their field of interest/expertise. If children are well versed in the content, strategies, and culture of multiple STEAM disciplines, they can cross boundaries more easily. When children are comfortable and confident in more than one subject, they can engage in the practice of code-switching. This means they use the language, tools, and methods of inquiry for multiple disciplines, which allows them to explore more robust, complex, and interconnected real-world problems. Identity in multiple areas is not necessarily the same as expertise, but it does afford the individual the confidence, competence, and persistence to engage more broadly, which has considerable value.

Theoretical Scaffolds and Conditions for STEAM Identity Development

Children cannot be told to develop an identity. It cannot be transferred through social transmission. Identity development is complex with multiple educational, social, emotional, and cognitive contexts and experiences that factor into an individual's construction of self. However, the educational environment can provide optimal conditions for children to build their identities with an intersection in the STEAM domains.

Creating opportunities for identity development requires a holistic, constructivist approach, situated in child-centered and whole-child philosophies. This means that direct instruction, or a specific STEAM identity curriculum focused on building these personalized traits can only accomplish the socially transmitted aspects of identity construction. For example, a teacher may use an identity curriculum that emphasizes representation and diversity in STEAM fields. This is

important and necessary for children of all types to see themselves represented in those who have gone before them in science, technology, engineering, mathematics, and the humanities. However, simply showing children that others like them have succeeded in STEAM fields does not create the sustained, relevant, meaningful experiences one needs to build their own identity. Furthermore, identity development, though influenced by many social factors, is a deeply personal, and uniquely constructed experience.

To take a holistic, connectivistic approach means that multiple, interrelated factors must be considered. Connectivist theory suggests that children should combine thoughts, theories, and information in usable ways, while also considering different viewpoints, and using technology as a central hub for informational learning through such strategies as simulations, gamification, and even social media (Western Governors University, 2021). Constructivism also fits within this paradigm as children must construct their knowledge and their identity through their own unique experiences and understandings. All STEAM classroom experiences must involve meaningful, relevant, active explorations that put the learner in the driver's seat for investigations and experiments. Furthermore, this conceptual work draws from child-centered practices as children's needs, interests, development, and individual continuums of learning must be considered in the classroom. Finally, this work draws from whole-child philosophy in that the development of any identity is a multi-domain endeavor that involves cognitive, social, emotional, physical, and cultural elements.

Practical Suggestions

The first suggestion for creating optimal conditions for STEAM identity development is for teachers to use an Interactionist Approach. Kim and Sinatra (2018) suggest that the onus for developing an identity in these fields should not rest solely with the individual child to develop the "knowledge, skills, interests, and abilities required to be successful" (para. 1), but that the educational context and environment where students experience these subjects is critically important. The STEAM environment must be welcoming with a rich, immersive culture and context for explorations. There must also be a balance between students' creativity and independence and their abilities/capacities to successfully complete realistic projects (Kim & Sinatra, 2018; Vongkulluksn et al., 2018). Interactionist theory in STEAM would suggest that all individuals can develop an identity in multiple fields, that the development of that identity takes time, and that the educational environment is a critically important influence in identity development (Kim & Sinatra, 2018). Practically, this means that teachers need to construct (or even co-construct with their students) an exploratory, investigative, and integrative STEAM environment that offers children immersive opportunities to interact with various STEAM problems or concepts. The teacher can guide this process and develop the environment to match the students' interests, abilities, and authentic inquiries so that they can find success while also exercising their choices to control the process and the direction of the explorations.

STEAM environments and curricula need to be highly integrative, thus allowing students to see the nature of more complex problems that require a transition away from separate subject explorations to multidisciplinarity, interdisciplinarity and transdisciplinarity. Choi and Pak (2006) define interdisciplinarity as anything that "analyzes, synthesizes and harmonizes links between disciplines into a coordinated and coherent whole" (p. 351). Transdisciplinarity, on the

other hand, “integrates the natural, social, and health sciences in a humanities context, and transcends their traditional boundaries” (Choi & Pak, 2006, p. 351).

Multidisciplinary approaches tend to organize content around a theme, but they also tend to keep disciplinary knowledge and boundaries intact (Drake & Burns, 2004). The level of content integration can vary in a multidisciplinary approach. This approach would foster code-switching as children jump from one disciplinary idea to another as they relate to a main theme. For example, children exploring a theme of space could use math skills to explore distance, time, size/shape, weight, and mass by using the tools and terms of math inquiry. Then, as they switch to science, they could explore the differences between terrestrial planets and gas giants by using scientific inquiry and related terms. A multidisciplinary approach offers children the opportunity to operate within multiple content domains, but also maintain the structure of subject boundaries.

An Interdisciplinary approach shifts the emphasis away from separate disciplines, and instead offers children the opportunities to use common skills and concepts from multiple disciplines (Drake & Burns, 2004). There may still be a theme, like space, but instead of having children do separate activities within separate content domains as they relate to the theme, the children will use concepts and skills that transcend a certain topic. Perhaps they decide to develop a rocket, but as they do so, they use language skills, critical thinking, research, and problem-solving skills that can transfer to any problem or discipline. In this approach, children can construct an identity that is broader in scope (across multiple disciplines) by using relevant skills and concepts that may apply to many different content explorations.

A transdisciplinary approach sees the curriculum organized around students’ interests and questions (Drake & Burns, 2004). Typically, these explorations are centered around project-based learning or problem-based learning in that students select relevant, real-world issues to explore. As they investigate, they use the terms, tools, skills, concepts, and methods of inquiry from multiple disciplines as they relate to a child’s topic of study. In terms of identity development, this could be considered a more applied approach, as the students themselves pick and choose what questions to explore, which skills to use, and the contexts behind their choices.

Ultimately, integration of content by using these different structures will allow students the opportunities to become intrinsically motivated, make powerful connections, explore open-ended questions, and apply their learning to new, unique, real-world problems (Curtis, 2002; Drake & Burns, 2004). These are the fertile contexts that will allow for healthy identity development in multiple areas.

When considering STEAM identity development, it is also necessary to consider the effects of inquiry and interest-based learning. Inquiry presents students with opportunities to authentically explore any of the STEAM domains and offers chances for students to gain proficiency with methods and procedures while also having choices in what/how they investigate (Sage 2YC, n.d.). Any chance that students have to engage in the work of real scientists, engineers, mathematicians, historians, and so on, is an opportunity to build the language, skills, and motivation to explore those subjects further. Interest is a necessary prerequisite, and inquiry is a driving process. Students must find value in the STEAM content, see how the content is relevant to their lives, and find a sustained interest in engaging in the content areas. This intrinsic value

includes task value (enjoyment of performing tasks within the content domain), attainment value (being successful), and utility value (relevance to the student's life and future pursuits) (Eccles et al., 1983; Harackiewicz et al., 2016). If students are intrinsically motivated, and can utilize authentic, student-directed inquiries that foster ownership of the questions, processes, and outcomes of any STEAM-related investigations, then they are more likely to develop an identity in those areas (Stone, 2020).

Play is also a mode for exploration, discovery, and inquiry. It is an enjoyable activity, but it also can lead to concept development and identity development (Stone, 2022; Stone, Lorentsen, & Schmidt, 2019). Esquivel et al. (2021) suggest that play cultivates identity, and that children develop in multiple realms through play and social interaction. Young children can use and develop the language, culture, and even concepts of a discipline or multiple disciplines through their play. Furthermore, play is "suited to developing not only science, technology, engineering, and mathematics skills but also inspiring children to tap into their artistic and creative abilities" (The Toy Association, n.d., p. 4). In other words, this process of identity development can start from an early age with play experiences in STEAM areas. Any STEAM educational setting should include multiple opportunities for children to play with concepts, ideas, and materials. Play can also lead to inquiry and foster science and engineering practices and processes.

Finally, to provide opportunities for children to build STEAM identities, any curriculum needs to be flexible rather than rigid. It should include representations of all types of people as scientists, engineers, mathematicians, artists, historians, and technologists. It should also expose children to the language, terms, concepts, tools, and culture of various disciplines, while situating explorations in real-world, integrated, immersive, and welcoming contexts. Furthermore, any curriculum needs to involve open-ended explorations that foster student-directed inquiry, build student interest and ownership, and allow for play.

STEAM Renaissance (Conclusions)

Leon Battista Alberti (1404-1472) once said, "A man can do all things if he will," which exemplified the Renaissance ideals that people were limitless in their capacities for development, and that all people should try to embrace all knowledge to develop themselves fully (Ray, n.d., para. 1). Much like the Renaissance ideal, the approach of STEM/STEAM education aims to help children solve problems that cannot be solved through the lens of one discipline. Furthermore, STEAM includes "conceptual, procedural, and attitudinal contents, so that if the mastery of each of them is necessary, so is the ability to recognize and appreciate the connections that exist between them" (Perales & Arostegui, 2021, para. 3). An identity that spans across and between multiple disciplines allows children to explore new possibilities, think divergently, and innovate. The child who explores science using the tools of the historian, or the artist who incorporates math into her work are just scratching the surface of what is possible. Holistic identity development in STEAM can provide the child with the traits necessary to expand their notion of self beyond a single discipline and to engage with broader issues throughout their education and career.

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Page Turners: Books for Children

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The Complete Maus (Books One and Two)
Written and Illustrated by **Art Spiegelman**
Patheon, 1996
ISBN: 9780679406419
Note: *The* Page Turners *column typically features reviews of recently published titles. However, we are including a review of* Maus*, published over a quarter of century ago. This review is in response to a recent challenge which resulted in the book being pulled from the curriculum in a school system.*

In the graphic novel world, *Maus*, by Art Spiegelman, is considered one of the most influential graphic novels. Winner of the Pulitzer Prize, *Maus* helped the format to gain legitimacy as a format worthy of teaching and reading. *Maus* speaks to and literally illustrates the horrors of the Holocaust in graphic form making the fear, guilt, and relief experienced, by Vladek Spiegelman (and all Survivors) tangible to the reader. The work also explores the long-term trauma experienced by children of survivors, something not many Holocaust stories address. *Maus* tells the story from a Jewish perspective which is sometimes overlooked in favor of Holocaust stories which prioritize the heroics of Gentiles over the horror of the victims. As the world loses survivors, works like Maus become even more important. Their stories cannot be forgotten. *Maus* honors these stories and should be a must read in every American classroom. Ages 12+. (CKM)

Grandude's Green Submarine
Written by **Paul McCartney**
Illustrated by **Kathryn Durst**
Random House, 2021
ISBN 9780593372432

In this companion text to *Hey Grandude!,* Sir Paul McCartney offers children another fanciful tale about a hip-hop-happening-hippy grandfather. This time, Grandude and the kids are off on an adventure to find Nandude. After boarding Grandude's secret new green machine, they simply follow the music: They drive, they fly, and they dive under the sea until they find

Nandude in a special underwater ship. Then, it's time to for all to head back home again. The exciting story is accompanied by colorful, engaging illustrations. While young children probably won't catch the language play related to the Beatles' *Yellow Submarine,* their parents and grandparents will, making it a fun read for all ages. Ages 4-8. (PAC)

The Heart of a Whale
Written and illustrated by **Anna Pignataro**
Philomel, 2020
ISBN 9781984836274

Whale has a beautiful song that seems to reach the farthest depths of the sea. The healing sound touches many creatures as it brings cheerfulness to a sad sea urchin, offers a soothing touch to an octopus, and provides a lullaby for baby seahorses. Whale is grateful this song brings so much joy to others. Yet, he also realizes he finds no comfort in his own song. Things change only when his beautiful sound reaches the aching heart of another lonely whale. In this dazzling picturebook, the poetic text and dreamy watercolor illustrations invite readers to consider many different aspects of care, compassion, and friendship. Ages 4-8. (PAC)

Out of a Jar
Written and illustrated by **Deborah Marcero**
Putnam Books, 2022
ISBN 9780593326374

Out of the Jar provides young readers with the tale of Llewellyn, a young rabbit, who struggles to deal with his many emotions. Llewelleyn does not enjoy feeling strong emotions and in an effort to control his many typical emotions, he bottles them up and stores them away. Unfortunately, he eventually runs out of space for his emotions and is forced to deal with them. This engaging tale shows readers that emotions are a real and normal part of life. Readers see how when Llewellyn deals with his emotions he is a much happier and healthier rabbit. This message should ring true for all readers and can add an important text to the pivotal discussion of helping children maintain positive mental health. Ages 3-8. (MJS)

Outside In
Written by **Deborah Underwood**
Illustrated by **Cindy Derby**
Houghton Mifflin Harcourt Publishing, 2020
ISBN 9781328866829

This is a quiet book that draws you in with exquisite pencil and watercolor illustrations and lyrical prose. In *Outside In*, we are reminded of the beauty and connection we have to the outdoors - even in our modern, indoor lives. This text shares the ways that our homes, clothes, and daily routines are infinitely connected to the world of nature. It reminds us of the links between trees and chairs, and rivers and plumbing. In the end, it reminds us all to spend time outside of our homes and cars in order to explore nature in its purest form. Following a young child's interactions with nature (both indoors and out), this book delights both adults and young readers with simple moments of real connection. Ages 3-8. (KBJ)

Patricia's Vision: The Doctor Who Saved Sight
Written by **Michelle Lord**
Illustrated by **Alleanna Harris**
Sterling Children's Books, 2020
ISBN 9781454931379

This lovely biography of Dr. Patricia Bath details the inspiring true story of the first African American woman to complete a residency in ophthalmology and who would go on to dedicate her life to helping people with visual impairments around the world. Young readers will enjoy learning about Dr. Bath's perseverance as a leader in her field, as well as her innovative spirit! The vivid and colorful illustrations depict Dr. Bath at work in her labs and around the world, while the text effectively describes the nature of scientific discovery to young readers, making it an excellent read-aloud. The author has also included quotes from her own conversations with Dr. Bath throughout the book's pages. It is a wonderful addition to any library, highlighting the work of a pioneer in her field. Ages 5+. (MTG)

The Rock From the Sky
Written and illustrated by **Jon Klassen**
Candlewick Press, 2021
ISBN 978536215625

This is another text in typical Klassen style that mixes muted hue, sparse watercolor illustrations with a simple yet humorous text. This book contains five related short stories set up as chapters. The text, which is all dialogue, alternates in color to indicate which character is speaking and Klassen's typical dark yet child-appropriate humorous style shines through. A turtle, armadillo, and snake, all wearing hats of course, interact with an alien as they explore the perfect place to be and navigate spending time both alone and with others. Young and old readers alike will greatly enjoy *The Rock From the Sky*. Ages 5+. (MJS)

That's Life!
Written by **Ame Dyckman**
Illustrated by **Cori Doerrfeld**
Hachette Book Group, 2020
ISBN: 9780316485487

This is a book that urges you to grab life and live it to the fullest. In this playful, whimsical text, Life is a furry little creature who is parachuted onto the doorstep of an inquisitive child. Centered on the antiques of this humorous personification of Life, with all its ups and downs, this text reminds us that while things rarely go as planned, they are almost always worth seeing through for the experiences. There are puns and plays on words that any adult reader will enjoy (such as Life "flashing before one's eyes" after a bath). While young children will be drawn in by the playful pictures and fast-paced prose, older children will appreciate the deeper themes of navigating the complexities that Life throws at us all. Ages 3-10. (KBJ)

Thesaurus Has a Secret
Written and illustrated by **Anya Glazer**
Katherine Tegen Books, 2020
ISBN 9780062916051

In this charming book, Thesaurus the dinosaur lives just like his other dinosaur friends, although with a much wider marvelous vocabulary! But Thesaurus has a big secret about his love of words that he is nervous to share with the other dinosaurs. Young readers will enjoy the simple pencil drawings and engaging story of what happens when Thesaurus' secret gets out. The text highlights the wonderful words that Thesaurus uses each day, exposing readers to his wide vocabulary. This picturebook contains elements that will please both adults and children alike, from clever illustrations to dinosaur-themed book puns—*One Hundred and Fifty Million Years of Solitude*, anyone? Ages 4-8. (MTG)

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Updates

Thank you for your continued support of the International Journal of the Whole Child and our commitment to holistic learning and to the development of the whole child. To improve the efficiency of the journal, we have updated our submission and publication dates. The submission deadline for Fall 2022 is September 30th. The submission deadline for the Spring 2023 will be February 28th. The Fall issues will be published in December and the Spring issue will be published in May. Lastly, our journal has officially moved to the APA 7th edition. We ask that all authors adhere to this edition when submitting your manuscript for review. Thank you again for your continued support. We look forward to seeing you in Fall 2022.