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ISSN: 2148-9378



Evidence-Based Social-Emotional Learning Intervention Programs for Preschool Children: An Important Key to Development and Learning

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ARTICLE INFO

Article History:

Received 19.03.2023

Received in revised form
13.01.2024

Accepted 17.02.2024

Article Type: Review article



ABSTRACT

The preschool years, spanning from birth to age six, are crucial periods for acquiring social-emotional learning (SEL) skills. An effective way to address social-emotional learning deficits is to implement evidence-based intervention programs. The purpose of this article is to review specific evidence-based social-emotional learning intervention programs for preschool children, drawing from resources such as books, peer-reviewed journal articles, and conference proceedings. In this context, five social-emotional learning intervention programs, including First Step to Success, I Can Problem Solve, Incredible Years, PATHS, and Strong Start Pre-K, documented in the social-emotional learning literature, were reviewed. Each program was evaluated based on its target group, duration, focus, delivery method, and experimental effects. The reviews found that play-based activities, puppets and stories, role-playing, and family involvement were common components of these programs. The majority of programs focused on problem-solving skills, and all had positive effects on preschoolers' social-emotional learning skills. Based on the reviews, it was underlined that social-emotional learning intervention programs are effective when their content, process, and delivery methods are developmentally appropriate for the target group. Accordingly, it was seen that the widespread implementation of evidence-based social-emotional learning intervention programs is essential to improve the basic social-emotional learning skills of preschool children and to address their potential deficits. Continuous evaluation and refinement of social-emotional learning intervention programs, guided by feedback from educators, parents, and researchers, was also highlighted as crucial to increase their impact. By prioritizing the implementation of evidence-based social-emotional learning intervention programs with appropriate components and delivery methods, the stakeholders of education can facilitate the holistic development of preschool children and lay a strong foundation for their future social-emotional well-being.

Keywords:

Preschool, Social-emotional learning, First Step to Success, I Can Problem Solve, Incredible Years, Paths, Strong Start Pre-K

1. Introduction

Preschool ages typically range from zero to six years old, forming the foundation for later life. Depending on the level of development and learning during this period, children can develop various skills and behaviors. Throughout preschool, children develop cognitive, linguistic, and social-emotional skills within the scope of opportunities and resources in their environment. Any deficiencies in learning outcomes during this crucial period pose risks for children's future lives. Since the preschool years lay the groundwork for human life, the effects of deficiencies may become apparent in the coming years (Ansari, 2018; Barnett & Frede, 2010; Campbell & Ramey, 1994; Essa & Burnham, 2019; Van der Gaag, 2002).

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Citation: Aksoy, P. & Gresham, F. M. (2024). Evidence-based social-emotional learning intervention programs for preschool children: An important key to development and learning. *International Journal of Psychology and Educational Studies*, 11(3), 201-217.

<https://dx.doi.org/10.52380/ijpes.2024.11.3.1227>

Deficiencies in learning outcomes during the preschool years can manifest in various ways and affect different aspects of a child's development and future life. These risks encompass various areas, including academic challenges, social and emotional difficulties, behavioral issues, and long-term consequences. For instance, children who do not develop essential cognitive and linguistic skills during the preschool years may struggle academically as they progress through school. This may lead to difficulties in literacy skills and other subjects, potentially impacting their educational attainment and future opportunities. The preschool years are also crucial for the development of social and emotional skills, such as empathy, communication, and self-regulation. Children not acquiring these skills may encounter challenges in forming positive relationships, managing emotions, and adapting to social situations, affecting their social interactions and overall emotional well-being. Moreover, deficiencies in learning outcomes during the preschool years can contribute to behavioral problems like impulsivity, aggression, and difficulty following rules. These issues can disrupt learning environments, strain relationships with peers and adults, and may result in disciplinary actions, further influencing a child's development and future opportunities (Campbell & Ramey, 1994; Jones, Greenberg, & Crowley, 2015; Karoly et al., 1998; Martinsone et al., 2022; Spinrad & Eisenberg, 2017). The effects of learning deficiencies during the preschool years can endure into adolescence and adulthood, potentially influencing multiple aspects of an individual's life, such as academic and career success, relationships, and mental health. In summary, deficiencies in preschool learning outcomes present risks that hinder a child's development and influence their future in diverse ways. Early intervention and support are crucial to tackle these deficiencies, reduce risks, and foster positive outcomes for children as they grow and advance (Osborn & Milbank, 1987; Zigler, Taussig, & Black, 1992).

Beyond the critical significance of the preschool years, understanding the characteristics, skills, and capacities of children during this developmental stage enables the prevention of certain risks. Preschool children need adult support, expect favor and attention, and have a strong desire to learn new things. Fulfilling these needs contributes to effectively supporting the development of individuals. Understanding the needs and characteristics of preschool-aged children and providing appropriate support and interventions not only establishes a strong foundation for their overall development but also prepares them for success as they transition to school. By fostering positive relationships with adults, encouraging curiosity and learning, promoting social interaction, and addressing individual needs, children are better equipped to thrive in the school environment. This proactive approach to early childhood development helps prevent potential risks and ensures that children enter school with the skills and confidence needed to succeed academically, socially, and emotionally (as seen by Jones, Greenberg, & Crowley, 2015; Kirpal, 2002). Preschool education services provided with continuity and an understanding of children's developmental needs will contribute to the development of individuals who are lifelong learners and have high levels of well-being. Educational institutions providing preschool education services implement systematic, planned, and regular intervention practices aimed at developing the skills and behaviors children need while ensuring their learning (Camilli et al., 2010; National Association for the Education of Young Children & National Association of Early Childhood Specialists in State Departments of Education, 2003; Sklad et al., 2012). In this context, teachers in schools lead the activities and practices specified in the education program to provide children with various skills and behaviors (Essa & Burnham, 2020; Gordon Biddle et al., 2014). According to the target group, the content and basic objectives of the education program implemented within the scope of the training have an impact on children's development and learning (i.e., Corcoran et al., 2018; Durlak et al., 2011; Hassani & Schwab, 2021; Murano, Sawyer, & Lipnevich, 2020).

Customizing school programs to meet the diverse developmental needs of children is crucial for promoting lifelong learning and well-being (Gordon Biddle et al., 2014; Myers, 1992). Social-emotional learning (SEL) intervention programs play a pivotal role in this effort by targeting the development of social and emotional skills among children. These programs are structured initiatives designed to equip students with the tools to understand and manage their emotions, build positive relationships, demonstrate empathy, make responsible decisions, and navigate social situations effectively. By integrating SEL into school programs, educators can create environments that foster not only academic success but also emotional intelligence and social competence among students. Moreover, SEL intervention programs contribute to establishing inclusive and supportive school cultures where all students feel valued and empowered to succeed. By addressing the social and emotional needs of students, these programs lay the groundwork for positive mental health outcomes and overall well-being (Bierman & Motamedi, 2015; Collaborative for Academic, Social, and Emotional

Learning [CASEL], 2013; Dusenbury, Calin, Domitrovich, & Weissberg, 2015). In parallel to these, social-emotional learning (SEL) intervention programs are also utilized to prevent and reduce undesirable behaviors in children. These intervention programs employ various strategies and techniques tailored to address specific behaviors such as aggression, defiance, impulsivity, and emotional dysregulation. Through structured interventions, behavioral management techniques, and targeted support, these programs aim to promote positive behavior and social-emotional development in children, thereby fostering a conducive environment for their overall well-being and growth (Diekstra, 2008; Greenberg et al., 2003; Hassani & Schwab, 2021). In conclusion, implementing SEL intervention programs tailored to the developmental needs of children is crucial for promoting lifelong learning and cultivating a positive school environment conducive to the holistic growth and well-being of students.

Social-emotional learning intervention programs are fundamental for improving children's skills, ranging from social behaviors to learning abilities. SEL serves the purpose of multidimensional development and learning in children. Possessing social-emotional learning competence means that children have emotional, social, and interpersonal skills as well as cognitive regulation. The process by which children acquire and successfully use the knowledge, attitudes, and abilities required to comprehend and regulate emotions, create and meet positive goals, feel and demonstrate empathy for others, build and sustain positive relationships, and make responsible decisions is known as social-emotional learning. Social-emotional learning refers to the process that helps children build social-emotional skills and behaviors encompassing cognitive, affective, and behavioral competencies and maintain positive interpersonal relationships with others (CASEL, 2013, 2020; Elias et al., 1997; Gresham, 2018; Payton et al., 2008). Social-emotional learning skills and behaviors are present virtually every minute of the day across all areas of daily life. However, the acquisition of social-emotional learning may not be particularly easy for some children. Social-emotional learning encompasses several different domains of abilities, such as attention, communication, response, and appropriate behavior. Therefore, efforts are needed to support social-emotional learning across various social settings and situations.

Social-emotional learning can be developed by reducing exposure to environmental risk factors, observing suitable models of social-emotional behaviors, fostering adaptive child-parent attachment, implementing healthy parenting approaches, and exposing children to evidence-based social-emotional learning intervention programs. Social-emotional learning training for children may be offered using various strategies such as classroom activities (such as play, storytelling, drama, drawing, role-playing, etc.), home-based activities, and family involvement activities (such as home bulletins, worksheets, parent meetings, portfolios, home visits, etc.). It is critically important that social-emotional learning skills and behaviors are supported by systematic and efficient social-emotional learning intervention programs. In other words, social-emotional learning intervention programs hold important value for the development of social-emotional learning skills and behaviors in children. These intervention programs can effectively promote social-emotional learning if they incorporate several essential features. A program must be designed and implemented in a way that is developmentally appropriate for the target group of children. It is essential to consider the social-emotional developmental needs of preschoolers in designing social-emotional learning intervention programs (as seen by Corcoran et al., 2018; Diekstra, 2008; Durlak et al., 2011; Merrell, Whitcomb, & Parisi, 2016; Murano, Sawyer, & Lipnevich, 2020; Nix, Bierman, Domitrovich, & Gill, 2013).

Preschool children have not yet developed the ability to think symbolically and abstractly; therefore, they are still concrete thinkers. They may commonly encounter difficulties with tasks and activities requiring interpersonal insight and self-reflection skills. Additionally, most preschool children have not yet learned to read or write. Hence, every curriculum designed for this age group must be obvious and concrete, using examples with which children are familiar and providing frequent repetition. These learning processes and education sessions should also be short and interesting enough to keep children's attention. Moreover, preschoolers are developing emotionally and experiencing different feelings. Although they tend to understand the general notion of feelings or emotions, they typically have a limited vocabulary to describe these emotions. Most preschool children can understand emotional words such as happy, angry, upset, amazed, and mad; however, they are less likely to know more complex emotional words such as worried, proud, joyful, thrilled, or tense. Preschool children are in the process of learning how to engage socially with individuals who are not members of their immediate family. During the preschool years, children undergo significant social-emotional development, acquiring critical skills such as negotiation, empathy, and effective

participation in group activities. While many friendships formed during this period may not be enduring, they serve as invaluable learning opportunities for children to practice and develop these essential friendship-making skills (Essa & Burnham, 2020; Merrell, Whitcomb, & Parisi, 2016). Recognizing the paramount significance of early social-emotional learning skills development, intervention programs tailored to the unique developmental characteristics of preschoolers hold a pivotal role. These programs are meticulously designed to foster the acquisition of social-emotional learning skills in children from the earliest stages of their development. Furthermore, the process of reviewing and implementing such intervention programs not only directly benefits the children but also enriches the knowledge and expertise of educators and practitioners, empowering them to effectively support children's social-emotional learning skills, as underlined by Durlak et al. (2011).

The anticipated outcomes of evaluating evidence-based social-emotional learning intervention programs in the field's literature are expected to serve as guiding principles for future experimental studies, significantly contributing to the effective implementation of social-emotional learning development. As stated by Gresham (2018), evidence-based practices entail making informed decisions about promoting desirable outcomes by integrating the best scientific evidence with practitioner expertise and organizational resources. These practices are rooted in scientific research supporting the implementation of intervention approaches across various groups, sites, investigators, and contexts, thus emphasizing strong external validity. The results of evidence-based interventions offer valuable insights into the situations under investigation, thereby addressing deficiencies within the field. Through the development of social-emotional learning in preschool children, it becomes possible to cultivate successful individuals who contribute positively to society. Based on these points, this study focuses on reviewing evidence-based intervention programs for preschool children aimed at enhancing social-emotional learning skills, which are an important key to development and learning.

The main purpose of the present paper was to review specific evidence-based social-emotional learning (SEL) intervention programs designed for preschool children. In this context, the specific social-emotional learning intervention programs, *First Step to Success*, *I Can Problem Solve*, *Incredible Years*, *PATHS*, and *Strong Start Pre-K*, which are available in the social-emotional learning literature and target preschool children, were reviewed. The intervention programs were examined in terms of their purpose, target group, implementation process, contents, and results based on experimental studies.

2. Method

This study was undertaken as a literature review, with a specific focus on examining evidence-based social-emotional learning intervention programs tailored for preschool children. These programs were meticulously selected based on evidence-based results, ensuring an integrative and systematic approach to the review process. By scrutinizing a range of scholarly sources and empirical studies, this research endeavor aimed to shed light on the effectiveness and impact of these intervention programs in fostering social-emotional skills among preschoolers.

2.1. Data Collection Process

The current review was conducted based on five social-emotional learning intervention programs, referred to as evidence-based social-emotional learning (SEL) intervention programs for preschool children in the literature. These intervention programs include *First Step to Success*, *I Can Problem Solve*, *Incredible Years*, *PATHS*, and *Strong Start Pre-K* programs. Research data were collected through a literature review conducted by researchers. These processes were carried out in six stages, as summarized in Figure 1.

As seen in Figure 1, in the data collection process, firstly (in the 1st stage), online and printed versions of available resources regarding social-emotional learning intervention programs, including books, refereed journal articles, and conference proceedings, were examined. This literature review also included keyword-based searches such as "social-emotional learning," "social-emotional learning interventions," "social-emotional learning programs," and "social-emotional learning programs for preschool children."

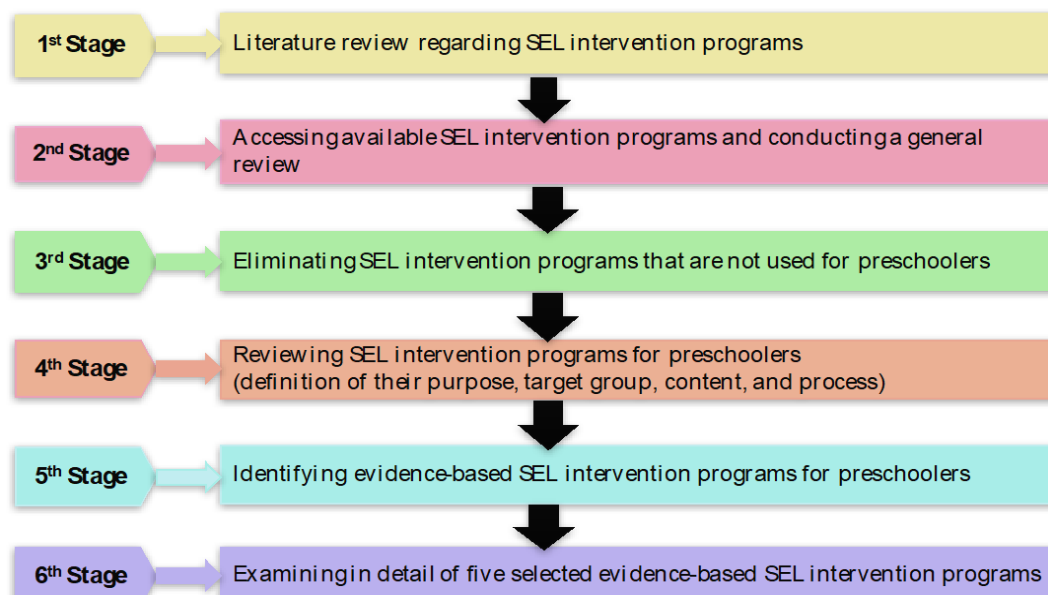


Figure 1. Stages of the Study Process

Afterward (in the 2nd stage), available social-emotional learning intervention programs aimed at teaching social-emotional learning in the literature were accessed and given a general review.

Next (in the 3rd stage), some intervention programs that were not used for preschool children were eliminated. For example, *Positive Attitude* (Coelho & Figueira, 2011; Coelho, Marchante, & Sousa, 2015), *The 4 Rs (Reading, Writing, Respect, and Resolution)* (Brown, Jones, LaRusso, & Aber, 2010), *Steps to Respect* (Brown, Low, Smith, & Haggerty, 2011; Frey et al., 2005), and *Strong Teens* (Merrell et al., 2007) were developed for older children than preschool ages and especially focused on the SEL skills of elementary school students. The review of these programs was not included in the purpose of the present study.

Then (in the 4th stage), intervention programs called *First Step to Success* (Hops & Walker, 1988; Walker et al., 1998a), *PATHS* (Greenberg & Kusché, 1993), *Second Step* (Committee for Children, 1989), *The Incredible Years* (Webster-Stratton, 2011), *I Can Problem Solve* (Shure, 1992), *High/Scope Perry Preschool Program* (Parks, 2000), *INSIGHTS* (McClowry, Snow, Tamis-LeMonda, & Rodriguez, 2010), *The REDI* (Domitrovich, Cortes, & Greenberg, 2007; Domitrovich, Gest, Gill, & Bierman 2009; Domitrovich et al., 2012), *Strong Start Pre-K* (Merrell, Whitcomb, & Parisi, 2009), and *Fuzzy's Friend* (Mishara, & Ystgaard, 2006) were examined. It was determined that these intervention programs aim to teach social-emotional skills and behaviors to preschool children. Each of these social-emotional learning intervention programs was reviewed within the context of the purpose of the intervention, the skills and behaviors handled within the intervention, the age of the target group for the intervention, the content and activities of the intervention, and the implementation process of the intervention.

Following other stages (in the 5th stage), intervention programs directly developed to improve the social-emotional learning of children, including preschool years, were particularly included in this study. Five programs were selected for detailed examination, namely *First Step to Success*, *I Can Problem Solve*, *Incredible Years*, *PATHS*, and *Strong Start Pre-K*, as they were acknowledged programs in the social-emotional learning literature and evidence-based programs.

Finally, (in the 6th stage), social-emotional learning intervention programs, called *First Step to Success*, *I Can Problem Solve*, *Incredible Years*, *PATHS*, and *Strong Start Pre-K*, were examined within the framework of theoretical and experimental information and findings, as presented in the following section.

2.2. Data Evaluation Process

The information and findings obtained from the intervention programs are presented qualitatively, and all the reviews are summarized in the table. The evidence-based social-emotional learning intervention programs, namely *First Step to Success*, *I Can Problem Solve*, *Incredible Years*, *PATHS*, and *Strong Start Pre-K*, were examined in detail using online and printed versions of accessible resources.

2.3. Ethical

This study is a review article that does not involve any direct research with human participants or animal subjects. It solely relies on the synthesis of existing literature and publicly available sources. Therefore, the conditions of our study do not necessitate an ethics committee approval.

3. Findings

Evidence-Based SEL Intervention Programs for Preschool Children: Reviewed in the Study

The information and findings obtained based on the purpose of the current study are presented below in alphabetical order of the program names.

3.1. The First Step to Success

First Step to Success (FSS) is an intervention program expected to improve children's behavior by implementing three separate components: a screening model, a school-based intervention, and parent training. *The Screening Component* aims to detect at-risk children as early as possible who can benefit from intensive school-based intervention. It evaluates each kindergarten child concerning behavioral indicators of emerging or existing externalizing behaviors and identifies children who are at risk and could benefit from early intervention. Children who meet empirically established cutoff points are considered appropriate candidates for the First Step program. *The School Intervention Module* teaches an adaptive pattern of behavior designed to support effective peer-student relationships and teacher-student relationships and support social and academic development. The School Intervention Module is an adapted version of the CLASS Program developed by Hops & Walker (1988). CLASS is a consultant-based intervention program designed to prevent aggressive and disruptive behaviors in children in the primary grades. The intervention is implemented for 10 to 12 weeks (Hops & Walker, 1988). Additionally, *the HomeBase Component* of the program is designed to involve parents as partners with school personnel in helping the target child transition to school. This program consists of a series of six sessions aimed at building children's competencies and skills in six areas that affect school adjustment and performance. The target skills include behaviors such as eliciting cooperation, setting limits, problem-solving, encouraging friendship, sharing materials, and building confidence. These sessions include instructional guidelines, parent-child plays, and activities. The program requires six weeks for implementation and begins after the target child has completed the 10th day of the CLASS program (Walker et al., 1998a; Walker et al., 1998b; Woodbridge et al., 2014). It includes weekly home visits during which HomeBase sessions are delivered in the home setting. Each HomeBase session requires approximately one hour. Parents are encouraged to study with their children for about 10 to 15 minutes each day and to focus on practicing the HomeBase skills being taught (Walker et al., 2001).

First Step to Success is an early intervention program aimed at helping children who are at risk of developing and demonstrating antisocial behaviors or aggression. The program includes coaching, green/red cards, family meetings, enjoyable activities (Woodbridge et al., 2014), videotaped demonstrations, role-playing, skill practice/feedback sessions, and materials (Walker et al., 1998b). According to the results of the study by Walker et al. (1998b), the First Step to Success program is designed to target the reduction of kindergarten children's high rates of aggressive and oppositional behaviors. Another study conducted by Feil et al. (2014) indicated that preschool children participating in the First Step intervention program exhibited significantly better social skills and fewer behavior problems compared to children participating in Head Start and other preschool programs. Celik et al. (2016) examined the effectiveness of the preschool version of the First Step to Success early intervention program for preventing problem behaviors. They found that the problem behaviors of children in the experimental group decreased significantly compared to controls. Frey et al. (2015) emphasized that First Step was a socially acceptable and practical intervention for preschoolers with developmental disabilities.

3.2. I Can Problem Solve

I Can Problem Solve (ICPS) is a universal school-based intervention program aimed at empowering the interpersonal cognitive processes and problem-solving skills of children aged four to twelve. ICPS is based on the idea that there is a collection of social-emotional skills that shape how children behave in interpersonal situations. The program teaches children how to think and what to think in interpersonal situations. Young

children learn that behavior has caused, that people have feelings, that what they do and say has an impact on others, and that there is more than one way to solve a problem. ICPS has three versions for different developmental levels: 59 activities for preschool-age children, 83 activities for kindergarten-age children, and 77 activities for early primary grades. These activities can be integrated into academic activities, and instructions are provided for each activity along with ideas for stories, role plays, games, puppets, and illustrations to highlight the content (Shure, 1992; 1997; 2001).

The formal activities of I Can Problem Solve take approximately four months to complete if conducted for twenty minutes to a half-hour daily (if conducted three times a week, the complete program can be completed within about six months). The real-life ICPS "dialoguing" techniques or the application of the formally taught concepts continue as a problem-solving style of talk becomes a way of communicating with children whenever actual problems occur (Shure, Aberson, & Fifer, 1994; Merrell & Gueldner, 2010). In the ICPS program, teachers of preschool and kindergarten children were trained to assist children in developing critical thinking and problem-solving skills for addressing interpersonal issues with peers and adults. Additionally, children who received training at home from their mothers were able to apply their newly acquired problem-solving skills to different settings (Shure, 1993).

Studies related to the ICPS program demonstrate its effectiveness in improving various social-emotional outcome variables among kindergarten and preschool children. Shure and Spivack (1982) conducted research revealing that four-year-old children who received the I Can Problem Solve intervention demonstrated significant improvements in their interpersonal cognitive problem-solving skills, particularly in generating different alternative solutions to interpersonal problems. Another study carried out on preschool children by Feis and Simons (1985) indicated that the I Can Problem Solve program led to a decrease in problem behaviors, including hyperactivity, anxiety, and other negative behaviors. In a meta-analysis conducted by Denham and Almeida (1987), it was determined that preschool children who participated in the I Can Problem Solve programs experienced positive changes in behavior. Taken collectively, these findings suggest that the I Can Problem Solve program is important for increasing social-emotional competence and reducing emotional-behavioral problems in preschoolers.

3.3. Incredible Years

The Incredible Years Program is a range of interconnected and comprehensive group training programs for children, parents, and teachers. The Incredible Years has several short-term main aims, including (1) promotion of child social competence, emotional regulation, positive attributions, academic readiness, and problem-solving skills, (2) prevention, decrease, and treatment of behavior and emotional problems in young children, (3) improved parent-child interactions, building positive relationships and attachment, enhanced parental functioning, less harsh and more nurturing parenting and increased parental social support and problem-solving, (4) improved teacher classroom management skills, teacher-student relationships, teacher-parent partnerships and classroom curriculum that reinforces social-emotional competence and conflict management skills. Meanwhile, the program has long-term goals aimed at preventing conduct problems, violence, criminal offenses, and drug abuse (Webster-Stratton, 2011).

The Incredible Years child training program, known as *the Dina Dinosaur Social Skills and Problem-Solving Curriculum*, was developed to teach several skills, including emotional literacy, perspective-taking, anger management, friendship skills, interpersonal problem-solving skills, communication skills, and how to be successful at school. The curriculum consists of 18 to 22 weekly, 2-hour activities. A classroom-based preventive version of this program has been developed, consisting of 64 activities. It is presented to every student 2-3 times a week in 20-minute circle time sessions, followed by 20-minute practice activities. The curriculum has seven main components, including: (1) introduction and rules; (2) empathy and emotion; (3) problem-solving skills; (4) anger control; (5) friendship skills; (6) communication skills; and (7) school skills. This program can be delivered by counselors or therapists in a mental health-related field or by early childhood specialists with experience in treating children with behavior problems. There are two versions of The Incredible Years Child Training Program: the universal prevention program and the therapeutic treatment program. In the universal prevention classroom version, teachers deliver more than 60 social-emotional activities and small group activities twice a week, with separate session plans for preschool to second grade. The second version is a small group *therapeutic treatment program* where accredited Incredible Years group

leaders work with groups of four to six children in two-hour weekly therapy sessions. The therapeutic version of the program can be offered in a mental health setting or delivered as a pull-out program during the school day. Program content is delivered using a series of DVD programs (over 180 vignettes) that teach children social skills, self-regulation skills, the importance of emotional feelings, following school rules, emergent literacy, and problem-solving. Large puppets are used to bring the material to life, and children are actively engaged in the material through play, role-play, and other activities. Finally, the programs are organized to accommodate parent training programs (Webster-Stratton & Reid, 2003; Webster-Stratton & Reid, 2004; Webster-Stratton & Taylor, 2001).

Webster-Stratton, Reid, and Hammond (2004) conducted a study on children aged four to eight years old with oppositional defiant disorder. These children were assigned to various treatment conditions: parent training alone, parent training plus teacher training, child training alone, child training plus teacher training, and parent training + child training + teacher training. There was also a waiting control group. Within the context of the child training conditions, all children were offered *Dinosaur School* in weekly 2-hour sessions for 18-19 weeks. Parents assigned to each of the three conditions watched the 17 videotape programs on parenting and interpersonal skills over 22-24 weeks. The program was designed to decrease parents' assertive interactions and reinforce their positive interactions and relationships with their children. Additionally, teachers in all training conditions participated in group training sessions throughout the school year, totaling 32 hours. In this context, the teacher curriculum targets teachers' use of effective classroom management strategies for promoting positive relationships, handling misbehavior, and promoting children's social skills through encouragement, praise, and collaborative approaches for working with parents, etc. The results of this study by Webster-Stratton, Reid, and Hammond (2004) showed that all treatments led to significantly fewer conduct problems with mothers, teachers, and peers compared to the control group. Children's negative behavior towards fathers was lower in the three-parent training conditions than in the control group. Thus, children displayed more prosocial skills with peers in the child training conditions than in the control group. All parent training conditions for mothers and fathers resulted in more positive parenting as well as less negative parenting than in the control group. Moreover, mothers and teachers demonstrated fewer negative outcomes than controls in the case of children who received child training.

3.4. PATHS (Promoting Alternative Thinking Strategies)

The universal curriculum entitled PATHS (Promoting Alternative Thinking Strategies) is a school-based social-emotional learning (SEL) intervention program that aims at basic skills such as emotion understanding, emotion regulation, self-control, and problem-solving. The PATHS curriculum was initially developed for the improvement of these competencies in elementary-age deaf children. The PATHS conceptual model contains more sophisticated plans and strategies regarding interpersonal problems. The curriculum focuses on preventing and decreasing emotional and behavioral problems and promoting children's social-emotional competence. The design of PATHS is based on the ABCD (Affective-Behavioral-Cognitive-Dynamic) model of development, which places major importance on the developmental integration of social and emotional competencies such as behavioral and cognitive understanding. The ABCD model emphasizes the qualitative changes in personality organization during stages outlined by Freudian and Piagetian theories, respectively (Greenberg & Kusché, 1993).

The PATHS intervention program is characterized by its developmental emphasis and is taught in schools by teachers trained in the program's implementation. The program includes six notebooks of sessions, pictures, and photographs that illustrate the concepts and stories in each session. Sessions are also sequenced according to increasing developmental difficulty and include dialoguing, role-playing, modeling by teachers and peers, social and self-reinforcement, attribution training, and verbal mediation. Original stories and activities are attached to enhance motivation and skills in reading and language arts. Extensive generalization techniques assist teachers in applying and transferring skills to other aspects of the school day (Greenberg & Kusché, 1993; Greenberg, Kusché, & Speltz, 1991).

Furthermore, the PATHS intervention program highlights the importance of fostering a supportive classroom and school climate to promote social-emotional learning, while also directly teaching children social-emotional skills. Sessions for younger children focus more on understanding emotions and self-control, whereas sessions for older children prioritize peer relationships and social problem-solving (Kam, Wong, & Fung, 2013). There

are 30 to 45 PATHS activities, widely used for primary school-age children, that can be taught during the school year. In these activities, children learn about and practice identifying feelings, breathing techniques for relaxation, and perspective-taking. Families are involved in this program through letters sent home with information about the activities, allowing parents to practice the skills at home to apply the concepts across various situations and settings (Merrell & Gueldner, 2010). Additionally, a subsequently developed PATHS preschool version has been used in recent years and shows promise in teaching social-emotional learning skills to children.

The results of a study by Domotrovich, Cortes, and Greenberg (2007) emphasized that the preschool PATHS program improved children's social interaction, emotional knowledge, self-regulation, and social skills. Children in the intervention group made gains in their ability to correctly identify situations that elicited different primary emotions, as well as being more accurate in identifying facial expressions. Additionally, children who participated in the preschool PATHS program were significantly less likely to have negative attitudes concerning the expression of emotional feelings. According to reports from teachers and parents, it was seen that the PATHS program assisted in the development of the social-emotional competence of children. Hughes and Cline (2015) evaluated the efficacy of the preschool PATHS program on three different groups of children aged three to four years old. The control group did not receive the preschool PATHS program, the second group received an adapted version of the PATHS program, and the third group received the full preschool PATHS program. The results of this study showed that children receiving the full version of the preschool PATHS intervention program demonstrated better emotional knowledge, higher rates of prosocial behaviors and attentional skills, and fewer problem behaviors.

3.5. Strong Start Pre-K

A social-emotional learning intervention program called Strong Start—Pre-K, part of the Strong Kids program, (the first volume in the Strong Kids series), was developed to promote social-emotional competence, prevent emotional and mental health problems, and also develop the vocabulary to express feelings. Strong Kids is designed for children from prekindergarten through 12th grade, while Strong Start—Pre-K is specifically tailored for preschool children (approximately ages 3–5). Strong Start is a low-technology program designed to serve as both a prevention and an early intervention program, with a wide range of applications for high-functioning or typically developing children, as well as children who have learning or behavioral challenges. Strong Start—Pre-K includes activities that address the specific social, emotional, and cognitive needs of young children. The program consists of 10 sessions focusing on understanding people's feelings, such as anger, happiness, and worry, as well as topics like being a good friend and problem-solving. These 10 sessions are delivered over 5 weeks, with an additional 2 booster sessions provided over 6–7 weeks after the conclusion of the main sessions (Merrell, Whitcomb, & Parisi, 2009, 2016).

Strong Start—Pre-K includes activities tailored to the specific social, emotional, and cognitive needs of young children. In this context, the program comprises 10 sessions related to understanding people's feelings, such as anger, happiness, worry, being a good friend, and problem-solving. These 10 sessions are delivered over 5 weeks, with 2 booster sessions provided 6-7 weeks after the conclusion of the main sessions. Gunter, Caldarella, Korth, and Young (2012) conducted a study to evaluate the effects of Strong Start—Pre-K, a social-emotional learning curriculum, on the social and emotional competence of preschool children. This curriculum consists of 10 sessions and two optional booster sessions. Moreover, the curriculum includes bulletins that are sent home to parents at the end of each session. These bulletins assist parents in learning strategies for reinforcing their children's social-emotional learning at home and provide suggestions for books to read with their children.

This study demonstrated that the Strong Start—Pre-K intervention program is beneficial for improving social-emotional competence in preschool children. The results showed that the curriculum is also effective in decreasing ratings of students' internalizing behaviors. Accordingly, teachers evaluated the social-emotional learning curriculum called Strong Start—Pre-K as valuable for teaching social-emotional skills. Gunter et al. (2012) evaluated the effects of the Strong Start—Pre-K program on the social and emotional competence of preschool children. This study revealed a significant decrease in internalizing behaviors and greater improvement in student-teacher relationships for children in the Strong Start Pre-K treatment condition. The

evidence suggests that Strong Start is a program that helps reduce problem behaviors and increase prosocial behaviors.

4. Discussion, Conclusion and Recommendations

The present study examined the five evidence-based SEL intervention programs in detail, focusing on their contents and properties. Table 1 summarizes the information about the five examined evidence based SEL programs for preschool children.

Table 1. Information about Evidence-Based SEL Intervention Programs for Preschool Children

SEL Intervention Programs	Target group	Duration	Focus	Method of delivery	Effect of experimental
First Step to Success (Screening Component Model)	<ul style="list-style-type: none"> Kindergartner 	10-12 weeks	<ul style="list-style-type: none"> cooperation, problem-solving, friendship, sharing materials, confidence. 	<ul style="list-style-type: none"> green and red cards video activities, home-based activities coaching, role-playing 	<ul style="list-style-type: none"> aggressive behaviors, oppositional behaviors, problem behaviors, social skills.
I Can Problem Solve	<ul style="list-style-type: none"> Kindergartner, Preschooler, Primary school students (4-12 ages)	4-6 months (59 sessions for preschoolers, 83 sessions for kindergartners)	<ul style="list-style-type: none"> problem-solving skills, interpersonal cognitive processes (how to think, not what to think). 	<ul style="list-style-type: none"> stories, role-playing, games, puppets, illustrations 	<ul style="list-style-type: none"> interpersonal cognitive problem-solving skills, generating different alternative solutions, hyperactivity, anxiety, negative behaviors.
Incredible Years (Dina Dinosaur Social Skills and Problem-Solving Curriculum)	<ul style="list-style-type: none"> Kindergartner, Preschooler, Primary school-age children. 	18-22 weeks (64 sessions)	<ul style="list-style-type: none"> introduction and rules, empathy and emotion, problem-solving skills, anger control, friendship skills, communication skills, school skills. 	<ul style="list-style-type: none"> DVD programs (vignettes), puppets games, play, role playing. 	<ul style="list-style-type: none"> conduct problems, prosocial skills, parental attitude.
PATHS (Promoting Alternative Thinking Strategies)	<ul style="list-style-type: none"> Kindergartner Preschooler, Through 6th-grade children 	9 months (30-45 sessions)	<ul style="list-style-type: none"> emotion understanding, emotion regulation, self-control, problem-solving. social-emotional skills. supportive classroom and school climate. 	<ul style="list-style-type: none"> notebooks, pictures, stories, role-playing, modeling, generalization techniques. 	<ul style="list-style-type: none"> social interaction, emotional knowledge, self-regulation, social skills
Strong Start Pre-K	<ul style="list-style-type: none"> Prekindergarten Preschooler, Through 12th-grade children 	5 weeks + 6-7 weeks (10 sessions and 2 optional booster sessions)	<ul style="list-style-type: none"> understandings people's feelings, being a good friend, solving problems, emotional-mental health, vocabulary to express feelings. 	<ul style="list-style-type: none"> home bulletins, classroom activities, handouts, worksheets. 	<ul style="list-style-type: none"> social-emotional learning, internalizing behaviors, student-teacher relationships, prosocial behaviors.

As seen in Table 1, the five examined evidence-based social-emotional learning (SEL) intervention programs exhibit both similarities and differences. All of these SEL programs include interventions for preschool-aged children, with target groups ranging from kindergarten to 6th and 12th grade. This suggests that these programs can be utilized for long-term interventions with children. When examining the durations of intervention programs, it was observed that the program known as *PATHS (Promoting Alternative Thinking Strategies)* was used for almost the entire school year (spanning 9 months with 30-45 sessions). *The Incredible Years (Dina Dinosaur Social Skills and Problem-Solving Curriculum)*, *I Can Problem Solve, First Step to Success (Screening Component Model)*, and *Strong Start Pre-K* were involved in intervention programs for varying durations, ranging from 10 weeks to 24 weeks, respectively.

All five intervention programs—*First Step to Success*, *I Can Problem Solve*, *Incredible Years*, *PATHS*, and *Strong Start Pre-K*—focus on teaching problem-solving skills in their content. In addition to problem-solving skills, *First Step to Success* addresses confidence, cooperation, friendship, and sharing materials skills. *Incredible Years* focuses on achievements such as introduction and rules, empathy and emotion, anger control, friendship skills, communication skills, and school skills. The *I Can Problem Solve* program emphasizes interpersonal cognitive processes, teaching children how to think in interpersonal situations rather than what to think and highlighting the impact of their actions and words on others. *PATHS* includes components related to emotion understanding, emotion regulation, self-control, and social-emotional skills. It underscores the importance of creating a supportive classroom and school climate to foster social-emotional learning. Similarly, *Strong Start Pre-K* covers emotional-mental health, understanding people's feelings, being a good friend, and vocabulary to express feelings. Accordingly, the majority of these intervention programs focus on problem-solving skills, while their content varies from cognitive processes to emotional skills as well as other social skills.

The *I Can Problem Solve* program includes interpersonal cognitive processes teaches children how to think rather than what to think in interpersonal situations and emphasizes the impact of their actions and words on others. *PATHS* also contains components related to emotion understanding, emotion regulation, self-control, and social-emotional skills. It underscores the importance of creating a supportive classroom and school climate to encourage social-emotional learning. Further, *Strong Start Pre-K* covers skills such as emotional-mental health, understanding people's feelings, being a good friend, and vocabulary to express feelings. Overall, the majority of these intervention programs include problem-solving skills, while their content varies from cognitive processes to emotional skills and other social skills.

All the intervention programs, namely *First Step to Success*, *I Can Problem Solve*, *Incredible Years*, *PATHS*, and *Strong Start Pre-K*, include classroom-based activities. Almost all of these intervention programs (excluding *Strong Start Pre-K*) incorporated the role-playing method as a notable aspect of their approach. *First Step to Success* utilized green and red cards and home-based activities, while *Strong Start Pre-K* utilized home bulletins, handouts, and worksheets. Notably, the *First Step to Success* and *Strong Start Pre-K* programs included family involvement. In addition, *First Step to Success* utilized green cards for positive behaviors and red cards for negative behaviors, along with coaching to teach children appropriate behaviors. Intervention programs such as *I Can Problem Solve*, *PATHS*, and *Incredible Years* also included stories and vignettes to teach specific skills/behaviors. Puppets played a significant role in the *I Can Problem Solve*, and *Incredible Years* programs. SEL intervention programs encompass various activities and methods aimed at developing social-emotional learning skills. When evaluating the effectiveness of these programs, it can be observed that activities such as green/red card activities, stories, role-playing, modeling, coaching, puppets, and other classroom-based activities, along with various family involvement activities (such as home bulletins and activities with parents), contribute to teaching social-emotional learning skills to preschool children. Each intervention program has undoubtedly contributed to the development of many skills among preschool children in various ways. It is essential to emphasize that social-emotional learning interventions are most effective when the program content and delivery methods are developmentally appropriate.

Based on the contents of the intervention programs, it is noteworthy that storytelling, role-playing, and the use of puppets are fundamental components in teaching social-emotional learning to preschool children. It is important to emphasize that almost all programs, especially *I Can Problem Solve*, and *Incredible Years*, also incorporate play-based activities. In other words, these intervention programs directly and/or indirectly utilize play to support children's social-emotional learning skills. It is essential to recognize that neurological and physical changes dictate which social-emotional learning skills are most crucial at a given developmental stage

and when mastery should be achieved. Preschool children have varying abilities in recognizing and naming different emotional states compared to other age groups. They learn that different individuals can have different emotional reactions to the same objective situation through their personal experiences and preferences. Similarly, preschool-age children spend much of their time at home with parents and siblings or at school with teachers and classmates, influencing their social-emotional learning based on their environments and experiences. It is important to consider that the method of delivering social-emotional learning intervention programs must be appropriate for a child's developmental level. In this regard, play-based programs appear to be most effective for preschoolers (Jones & Doolittle, 2017). This information and reviews suggest that play is an important method for teaching social-emotional learning behaviors to preschool children. As stated by Bierman, Greenberg, & Abenavoli (2016), social-emotional learning programs are also particularly effective when these programs improve teachers' classroom management and the quality of teacher-student interactions, including social-emotional skills-building for preschool children that are integrated with academic enrichment programs and involve parents.

The available experimental studies conducted on preschool-aged children found that intervention programs such as *First Step to Success* (Celik et al., 2016; Feil et al., 2014; Frey et al., 2015; Walker et al., 1998b), *I Can Problem Solve* (Denham & Almeida, 1987; Feis & Simons, 1985; Shure & Spivack, 1982), *Incredible Years (Dina Dinosaur Social Skills and Problem-Solving Curriculum)* (Webster-Stratton, Reid, & Hammond, 2004), *PATHS (Promoting Alternative Thinking Strategies)* (Domitrovich, Cortes, & Greenberg, 2007; Hughes & Cline, 2015), and *Strong Start Pre-K* (Gunter, Caldarella, Korth, & Young, 2012) were effective in improving various social-emotional learning skills. The results of these studies indicated that these programs substantially decreased problem behaviors (e.g., hyperactivity, anxiety, aggression, and/or conduct problems) in preschool children. Each of the programs contributed to decreasing children's social-emotional problems and fostering their social-emotional competence.

Moreover, the *Strong Start Pre-K* program had a positive effect on student-teacher relationships. Meanwhile, the *Incredible Years (Dina Dinosaur Social Skills and Problem-Solving Curriculum)* program encouraged positive parental attitudes and decreased teachers' negative behaviors. It can be concluded that *First Step to Success* had a significantly positive influence on children's social skills; *PATHS* had a significantly positive effect on self-regulation as well as social skills, and *I Can Problem Solve* showed significant improvements in generating different alternative solutions. Likewise, *Incredible Years* and *Strong Start Pre-K* showed significant improvements in prosocial behaviors. Based on this information and these reviews, it can be said that all of the SEL intervention programs, including *First Step to Success*, *I Can Problem Solve*, *Incredible Years*, *PATHS*, and *Strong Start Pre-K*, had a critically important impact on the social-emotional learning skills of preschool children.

Overall, this review emphasizes that SEL intervention programs can be effectively applied to preschool children for at least three months. During this period, various materials and methods, such as play-based activities, puppets and stories, role-playing, and family involvement, can be utilized appropriately. Teachers and practitioners should carefully consider the application timeline of SEL programs and implement effective methods used in these programs within the context of their school programs.

Evidence-based SEL intervention programs should be considered an important aspect of development and learning. It is essential to identify the specific needs and goals of children to select appropriate SEL programs for intervention. These evidence-based social-emotional learning intervention programs should be widely utilized to enhance the social-emotional learning skills and behaviors of preschool children. Improvements in the social-emotional learning skills of preschool children can be achieved through the implementation of appropriate intervention programs tailored to their individual needs. It is recommended that parents and teachers implement evidence-based social-emotional learning intervention programs to enhance children's social-emotional learning skills effectively. Furthermore, evaluating the results of such studies in future program development will be beneficial in refining and improving social-emotional learning interventions for preschool children. This ongoing evaluation and refinement process will contribute to the continued enhancement of young children's social-emotional development.

This current study is limited to the examination of five evidence-based SEL intervention programs for preschool children. In future research, SEL intervention programs for preschool children based on different

learning theories and intervention approaches could be systematically analyzed, and subjected to meta-analysis. Additionally, in future studies, experimental research could be conducted using SEL intervention programs similar to those in this study, and efforts could be made to support the development of various skills in the social-emotional development areas of preschool children. It is also recommended that future research explore the long-term effects of these SEL intervention programs on children's social-emotional development. Studies focusing on the implementation fidelity and sustainability of these programs in real-world settings would provide valuable insights for practitioners and policymakers. Moreover, research examining the potential differential effects of these programs based on demographic factors such as socioeconomic status, ethnicity, and language proficiency could contribute to the development of more inclusive and equitable interventions.

Acknowledgement

This study formed a part of the first author's Post-Doc Project and was supported by the Scientific and Technological Research Council of Turkey (TUBITAK) International Postdoctoral Research Scholarship Programme, with project number 1059B191600621 assigned to the first author, Pinar Aksoy. The corresponding author, Assoc. Prof. Dr. Pinar Aksoy; sincerely thanks The Scientific and Technological Research Council of Turkey for the financial support provided during this process. She is deeply grateful to Prof. Dr. Frank M. Gresham, the second author, for graciously hosting her at Louisiana State University and for his valuable support. The authors also express their deepest gratitude to the providers of the programs who shared the information relevant to the programs included in this study with them.

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