



## **Promoting Emotional Intelligence in preschool education: A review of programs**

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This paper compares four selected social-emotional learning (SEL) curricula that have empirical support for preschool students (Preschools PATHS, Incredible Years, AI's Pals, and Preschool RULER). First, meta-analytic studies of SEL programs in schools and research on emotional intelligence (EI) of preschool children are reviewed as a background for understanding the four programs. Preschool EI research is examined as it relates to outcome variables such as school engagement, social adjustment, emotion regulation and academics. The programs are critiqued and compared on the particular SEL areas of focus, context of delivery, structure of delivery, and intervention strategies. Research on cross cultural adaptation of programs is also examined. Areas for future directions in EI preschool curricula research are identified.

**Keywords:** emotional intelligence, preschool, social-emotional learning curricula

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### **Introduction**

The acquisition of emotional intelligence (EI) abilities in preschool children is an important foundation for development. Effective social-emotional functioning not only facilitates optimal developmental trajectories in the personal and interpersonal domains but extends into the academic domain. EI and the broader umbrella term - social emotional learning (SEL) have been established as predictors of psychosocial adaptation and are important factors in the prevention of academic difficulties, mental disorders, and psychosocial conflicts (Cohen & Kauffman, 2005; Goldstein & Brooks, 2013; Perera & DiGiacomo, 2013; Resurrección-Mena, Salguero, Ruiz-Aranda, 2014). Several authors (Nix, Bierman, Domitrovich, & Gill, 2013; Rivers, Tominey, O'Bryon & Brackett, 2013a, 2013b) have noted the importance of SEL at the preschool level. Research and

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curricula for SEL programs at the preschool level is not as well developed as those for elementary and high school levels, yet preschool interventions are as important if not more critical than those for the upper grades (Weare & Nind, 2011).

This paper aims to examine SEL preschool curricula. The first part will review meta-analytic studies that support the effectiveness of SEL programs in schools. Part two will review studies on preschool SEL functioning and their predicted outcomes. The third section describes and compares four selected SEL curricula that have been found to be efficacious at the preschool level (PATHS, Incredible Years, Al's Pals, and RULER). The conclusion section compares the four programs, their consistency with established literature, and identifies future research needs.

### *The impact of SEL programs in schools*

In a meta-analysis of school-based social, emotional and behavioral programs Sklad, Diekstra, De Ritter, Ben, and Gravestijn, (2012) identified seven major categories of outcome variables: social skills, antisocial behavior, substance abuse, positive self-image, academic achievement, mental health, and prosocial behavior. The most common outcome variables impacted in the studies were increases in social skills and decreases in antisocial behaviors such as conduct problems or violence. Durlak, Weissberg and Pachan (2010) conducted a meta-analysis of after school programs geared toward personal and social development of children and found positive effects on four of the same variables (e.g. increases in self-perception, prosocial behaviors, and academic grades and decreases in problem behaviors). They also found school bonding (also referred to as school engagement) to be an outcome of these programs. Durlak et al. (2010) advocate for four essential features that are necessary for skills training programs to be effective. Training that is Sequenced, Active, Focused, and Explicit (using the acronym SAFE) tend to have greater effectiveness.

Taylor, Oberle, Durlak and Weissberg (2017) reviewed 82 school-based programs over a span of 33 years and aligned SEL programs with positive youth development. They found increases over control groups in the areas of social-emotional skills, attitudes and well-being. Like Sklad et al. (2012), social skill development emerged in the Taylor et al. (2017) analysis as a major outcome variable and was the strongest predictor of well-being. A strength in the Taylor et al. (2017) analysis was the emphasis on follow up measures of 6 months or more that support the impact of SEL programs in the longer-term trajectories of child development. The youngest participants in the studies reviewed by Taylor et al. (2017) were 5 years old which can have some direct relevance for preschool SEL programs. In fact, a notable finding was that the greatest effect sizes ( $ES = .27$ ) were found for the youngest groups of children. The long span of years included in the analyses encompassed much older studies that may have built their curricula on distinctly different social-emotional models that predated the emotional intelligence theory of the 1990s. Taylor et al (2017) did find inconsistencies and variability of the programs' effectiveness.

Trentacosta and Fine (2010) conducted a meta-analysis of 63 SEL programs that examined a specific element of emotional intelligence (e.g. emotional knowledge) and its relationship to social competence and to internalizing and externalizing problems. Many of these studies included preschool students, ages 3 to 5 years. They found effect sizes for preschool students for all three of the outcome variables. In 42 of the 63

studies, emotional knowledge had an average correlation of  $r = .21$  with social competence. In 11 of the studies the average correlation with internalizing disorders was  $r = -.17$  for the preschool children group. Twenty-one of the studies reviewed had an effect size of  $-.15$  with externalizing problems for the preschool students. In contrast to the Taylor et al. (2017) analysis that had larger effect sizes for younger students, Trentacosta and Fine (2010) reported greater effect sizes for the oldest age group (9 – 15 years) on two variables ( $-.27$  for internalizing problems and  $-.34$  for externalizing problems) and for the middle aged group (6 – 11 years) on the social competence variable ( $.24$ ).

Based on a meta-analysis of 52 programs focused on mental health in schools Weare and Nind (2011) developed several suggestions for school-based programs. In agreement with Taylor et al. (2012), they recommend that programs promoting mental health and problem preventions start early in the school grades, suggesting that preschool is an especially critical period to target for interventions. Other recommendations from their findings are to utilize a whole school approach to embed interventions in the educational ecology, to adhere closely to the program methodology, and to involve school leaders and families. While the Weare and Nind (2011) analysis focused on mental health outcomes, SEL research is closely aligned as many of the outcome factors (i.e. self-esteem, well-being, social competence) are similar.

Notable themes in the SEL literature that warrant attention include the reports of inconsistent findings across meta-analyses (Durlak et al. 2010; Sklad, et al. 2012; Taylor, et al. 2017). These may be due to variable definitions of SEL factors, diverse methods of interventions and different measurement methods. A consistent finding is that effect sizes tend to be small, however Durlak et al. (2010) argues that small effect sizes be considered in the context of real world applications and in comparisons to other types of effects.

Gaps exist in international research on preschool SEL with most studies being conducted in North America particularly the USA. An exception to this is Taylor et al. (2017) who reported that 38 of the 82 studies in the meta-analysis were conducted outside the USA. Another gap is that many of the SEL curricula and research studies were designed with older elementary school students. This highlights the importance of studying specific effects of SEL interventions with the preschool age group.

### *Importance of emotional intelligence in preschool education*

The EI variables studied in preschool social-emotional development can generally be divided into two major areas of emotion-based processes. The first is *emotional knowledge* that includes variables labeled as emotional knowledge, emotional labeling, and emotional recognition. The second major area is *emotional regulation* which refers to the management of affective states and the strategies used to alter emotional intensity and valance. These two broad categories of EI abilities parallel what Mayer, Salovey, Caruso and Sitarenios (2003) refer to respectively as experiential and strategic EI abilities. The former refers to the input of emotional information (i.e. recognizing feelings in the self and others) and the latter regards the strategies or actions taken in response to emotion information (i.e. the control and expression of feelings).

Preschool is vital for developing school readiness, facilitating school engagement and setting the foundations for academic success. Numerous studies have supported the link between social-emotional development in preschoolers and later academic and social functioning. Longitudinal studies that involved

measures at both proximal and distal points in development and have found relationships between preschool SEL and academic achievement (Denham et al., 2012a; Torres, Domitrovich, & Bierman, 2015), executive functioning (Ferrier, Bassett & Denham, 2014), school engagement (Williford, Vick, Vitiello & Downer, 2013), school adjustment (Denham, et al. 2012a; Herndon, Bailey, Shewark, Denham & Bassett, 2013), and social-emotional adjustment (Dennis & Kelemen, 2009).

School engagement (previously referred to as school bonding) at all grades is linked with self-efficacy and successful learning (Linnenbrink & Pintrich, 2003) and is a component of school adjustment. In examining components of preschooler's EI, Herndon et al. (2013) identified three components of school adjustment: positive engagement, independence-motivation, and prosocial connections. In their study, preschool students high in emotional regulation had better ratings of prosocial connections with peers and those low in emotional regulation had lower ratings of positive engagement, independence-motivation, and overall school adjustment. Williford et al. (2013) found student engagement with teachers to relate to compliance with classroom structure and with student executive functioning. They also found student's behavioral engagement with the classroom learning tasks to relate to student emotion regulation. Both emotional regulation and executive functioning have similar neurological roots in the prefrontal cortex brain regions (Calkins & Hill, 2007). In a longitudinal study Ferrier et al. (2014) found that executive functioning and emotional regulation were predictive of each other suggesting a close correspondence of these two processes.

Cole, Dennis, Smith-Simon & Cohen (2009) examined 3 and 4-year old's understanding of emotional regulation strategies and compared their abilities to recognize and generate strategies for managing feelings of anger and sadness in puppet scenarios. They found significant correlations between generating and recognizing strategies for anger but not for sadness suggesting that preschoolers may use different methods to manage distinct emotions. 4-year olds were capable of generating more strategies than 3-year olds for dealing with the anger scenarios; however both age groups were comparable with regard to strategies for sadness. This suggests that emotional regulation develops with age and that emotion-specific strategies develop at different rates. The authors suggest that the period between ages 3 and 5 is significant for the development of children's capacity to understand their own strategies and co-occurs with other cognitive milestones such as executive functioning and theory of mind.

In a similar focus on preschool children's understanding of their own emotional regulation strategies, Dennis and Kelemen (2009) compared children's endorsements of effective versus ineffective regulation strategies. They found that children identified the three effective strategies (cognitive distraction, behavioral distraction and situation repair) as effective methods of emotional regulation but also endorsed ineffective strategies (such as ruminating and venting). This contrasts with adult ratings of the effective versus ineffective strategies indicating that preschool children have not yet learned which strategies do not work well.

Torres et al. (2015) found that preschool interpersonal relationships with teachers and peers predicted kindergarten academic success and was mediated by increases in emotional knowledge. This finding is consistent with results of Trentacosta and Fine (2010) linking emotional knowledge and social competence.

Denham et al. (2012b) also found emotional knowledge to be predictive of academic success and school adjustment. They identified advanced emotional knowledge in preschool students as associated with higher ratings of self-regulation. In a separate study, Denham et al. (2012a) found that emotional knowledge and executive functioning predicted school outcomes and that these relationships were mediated by social-emotional behavior which were defined somewhat more broadly than emotional regulation.

In sum, emotional regulation is closely associated with executive functioning and predicts school engagement and school adjustment. Children's understanding of their own emotional regulation strategies emerges over time, may be emotion-specific, and will include ineffective strategies. Children's emotional knowledge predicts school outcomes, mediates the predictive association between interpersonal relationships and academics, and is mediated by social-emotional behaviors in its prediction of school outcomes.

Taken together these studies support the link between emotional intelligence and school outcomes (both academic and school adjustment). There is a reciprocal relationship between emotional knowledge and regulation, as deficits in emotional labeling and poor understanding of emotions may be detrimental for the development of EI. Regarding EI in preschool education, both classes of abilities - emotional knowledge and emotional regulation- are vital for any comprehensive SEL program.

### **Review of Preschool EI /SEL Programs**

Though there are a variety of social-emotional curriculums available for use with preschool classes (Powell & Dunlap, 2009), far more research has focused on the efficacy of programs targeting elementary school age students than preschoolers (Collaborative for Academic, Social and Emotional Learning, 2012). McClelland, Tominey, Schmitt, & Duncan (2017) identify four different SEL intervention models: those based on social learning theory, coercion theory, pretend play, and cognitive regulation. While social learning theory models tend to emphasize social/interpersonal skills and the reading of social cues, models based on coercion theory stress working with teachers on classroom management and strategies for de-escalating strong emotions of students. In contrast, pretend play models concentrate on rehearsal of social roles during play and cognitive regulation models work to improve cognitive flexibility, inhibitory control, mindfulness, and working memory. Lynch, Geller, & Schmidt (2004) describe primary prevention SEL programs based on resiliency research, which focus on building social competence and enhancing protective factors, such as parent-child and teacher-child relationships.

The four SEL curriculums reviewed address some of the seven outcomes variables identified in the meta-analysis by Sklad et al. (2012) and show promise in terms of primary prevention with a preschool population. The programs were chosen based on the following criteria: (1) They are specifically intended to impact the social-emotional skills of children aged 2-5. (2) The programs are delivered within a whole classroom environment to all students. (3) They are considered comprehensive and are designed to provide opportunities for practice of social-emotional competence. (4) The programs have one or more efficacy studies that yield positive social-emotional outcomes associated with resiliency and/or prevention of emotional and behavioral problems for children 5 years and younger (Collaborative for Academic, Social and Emotional Learning, 2013; Powell & Dunlap, 2009,). Table I presents a summary of the major components

of the four preschool programs reviewed. Notably, all of the programs reviewed originate in the USA and therefore findings may not be generalizable to other contexts. However, research examining cross cultural transferability and implementation of programs outside the USA is highlighted.

**Table I. A Review of EI/SEL Curricula for Preschoolers**

	<b>Focus of Program</b>	<b>Target Group</b>	<b>Contexts of Delivery</b>	<b>Structure of curriculum</b>	<b>Strategies and Techniques</b>
<b>Preschool PATHS</b>	<ul style="list-style-type: none"> <li>• Emotion knowledge</li> <li>• Social problem-solving</li> <li>• Friendship skills</li> <li>• Self-control</li> </ul>	<ul style="list-style-type: none"> <li>• Preschool children aged 3-5</li> </ul>	<ul style="list-style-type: none"> <li>• Whole classroom</li> <li>• Teacher training in curriculum</li> </ul>	<ul style="list-style-type: none"> <li>• 33 weekly lessons</li> </ul>	<ul style="list-style-type: none"> <li>• Modelling stories</li> <li>• Emotional coaching</li> <li>• Puppets</li> <li>• Role-play</li> <li>• Games</li> <li>• Discussion</li> </ul>
<b>Preschool RULER</b>	<ul style="list-style-type: none"> <li>• Emotional Intelligence (recognizing, understanding, labelling, expressing and regulating emotions)</li> <li>• Emotional Literacy (emotion vocabulary)</li> </ul>	<ul style="list-style-type: none"> <li>• Preschool children aged 3-5</li> <li>• Adults in children's lives</li> </ul>	<ul style="list-style-type: none"> <li>• School-wide</li> <li>• Whole classroom</li> <li>• Teacher training in emotional skills</li> </ul>	<ul style="list-style-type: none"> <li>• Social-emotional learning is embedded throughout each preschool day.</li> </ul>	<ul style="list-style-type: none"> <li>• Mood meter</li> <li>• Blueprint</li> <li>• Meta-moment</li> <li>• Feelings word curriculum</li> <li>• Role-play</li> <li>• Creative art activities</li> <li>• Storybooks</li> </ul>
<b>Incredible Years</b>	<ul style="list-style-type: none"> <li>• Emotional awareness</li> <li>• Empathy/perspective taking</li> <li>• Friendship skills</li> <li>• Anger management</li> <li>• Social-problem-solving</li> <li>• Emphasizes school rules and coping in a school setting</li> </ul>	<ul style="list-style-type: none"> <li>• PreK-2<sup>nd</sup> grade</li> </ul>	<ul style="list-style-type: none"> <li>• Whole classroom</li> <li>• Teacher training in class management</li> <li>• Parent reinforcement</li> </ul>	<ul style="list-style-type: none"> <li>• 60 lessons that are delivered 1 to 3 times per week for 45 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Video</li> <li>• Puppets</li> <li>• Games</li> <li>• Interactive activities</li> </ul>
<b>AI's Pals</b>	<ul style="list-style-type: none"> <li>• Resiliency</li> <li>• Self-control</li> <li>• Problem-solving, Conflict resolution</li> <li>• Healthy decision-making</li> <li>• Addresses bullying/drug and alcohol use</li> </ul>	<ul style="list-style-type: none"> <li>• Children aged 3-8</li> </ul>	<ul style="list-style-type: none"> <li>• Whole classroom</li> <li>• Teacher training in curriculum</li> <li>• Parent education</li> </ul>	<ul style="list-style-type: none"> <li>• 2 lessons per week for 15-20 minutes for 23 weeks. (In between lessons, children practice skills in daily classroom interactions)</li> </ul>	<ul style="list-style-type: none"> <li>• Puppets</li> <li>• Books</li> <li>• Original music</li> </ul>

*Based on: Collaborative for Academic, Social and Emotional Learning, 2013; Joseph & Strain, 2003; Lynch et al., 2004; Powell & Dunlap, 2009; Powell, & Payne, 2014; Rivers et al., 2013; Webster-Stratton & Reid, 2004.*

*Preschool PATHS Curriculum:*

Preschool PATHS (Promoting Alternative Thinking Strategies), developed by the Prevention Research Center at Pennsylvania State University, is based on social learning theory and focuses on enhancing the emotions

knowledge, social problem-solving skills, and self-control of children aged 3-5 years old (Joseph & Strain, 2003). It consists of 33 weekly lessons that address friendship skills, awareness and communication of children's own and other's emotions, strategies for self-control, and skills for interpreting and coping with difficult situations. Activities within lessons include modeling stories, emotional coaching, puppets, role-play, games, and discussion (Powell & Dunlap, 2009). Specifically, the *Turtle Technique* is utilized to teach stopping and thinking to develop better self-control (Joseph & Strain, 2003).

A number of studies have focused on the efficacy of Preschool PATHS. Findings from a randomized study overseen by Head Start CARES Demonstration indicated that Preschool PATHS showed improvement in children's understanding of emotion, social problem-solving skills, and social behaviors. In addition, Preschool PATHS teachers were rated higher than teachers in the control group in social-emotional instruction skills. However, based on parent and teacher reports, these outcomes did not appear to continue in kindergarten (Morris, Mattera, Castells, Bangser, Bierman, & Raver, 2014). The authors point out that there was limited measurement of child outcomes in kindergarten and that future studies must include more comprehensive follow-up. In a randomized trial of Preschool PATHS, Domitrovich, Cortes, & Greenberg (2007) found that preschoolers who participated in the program had higher emotion knowledge skill, were rated by parents and teachers as more socially competent compared to controls, and were rated by teachers as less socially withdrawn at the end of school year compared to students that did not participate in the program. However, the authors utilized behavior ratings rather than direct observation of children's behavior, which could have skewed results. In addition, there was a lack of follow-up to determine if intervention effects persisted as children moved to kindergarten. The Preschool PATHS curriculum was also studied as part of an integrated social-emotional/early literacy intervention, called the Head Start REDI (Research-based, Developmentally Informed) intervention. In a randomized study, Nix, et al., (2013) found that students who had participated in the Head Start REDI intervention showed significantly higher emotion understanding, competent social-problem-solving, and positive social behavior at the end of Head Start. The study assessed a large sample of ethnically diverse children living in poverty in both rural and urban settings and utilized direct assessments, as well as parent, teacher, and observer rating scales to assess child skills. Follow-up indicated that students continued to demonstrate significantly more positive social behavior at the end of kindergarten. The authors suggest that sustained intervention effects in kindergarten may be specific to children attending lower quality elementary schools.

The 2013 CASEL Guide of Effective Social and Emotional Learning Programs classified Preschool PATHS as effective in increasing positive social behavior and reducing emotional distress based on randomized, controlled trial with African-American and Caucasian students. Powell and Dunlap (2009) indicated that when Preschool PATHS was used with children aged 3-4 in Head Start, positive outcomes were noted not only in an increase in emotional understanding and social problem-solving, but in a decrease in aggressive behavior displayed. Moreover, they classified Preschool PATHS as efficacious for treatment fidelity, treatment generalization and for use with ethnically and racially diverse groups.

With regard to cross cultural transferability, Inam, Tariq, & Zaman (2014) examined the process of adapting Preschool PATHS to the cultural and linguistic needs of young children in Pakistan. Using a

heuristic framework, modifications to the curriculum were made to address variations in vocabulary and expression of language between English and Urdu, differences in depiction of gender, ethnic and religious perspectives between cultures, and disparities in school environments in terms of opportunities for training and use of specific activities. The authors indicate that most changes were related to surface structure rather than to core concepts and that cultural equivalence was achieved. Based on the adaptation process, they conclude that key elements of the PATHS curriculum are universal and can be applied to non-Western cultures. As the study was descriptive in nature, the effectiveness of the program for Pakistani children requires further evaluation.

Mihic, Novak, Basic & Nix (2016) used a quasi-experimental design to evaluate the use of Preschool PATHS with 3-6 year olds in 12 preschools in Croatia. Based on teacher rated assessments of children's social and emotional skills at the beginning and end of preschool, significant improvements were found in children's prosocial behavior, and emotional regulation. In addition, a decrease in emotional symptoms, peer conflicts, conduct problems, relational aggression, and hyperactive-impulsive behavior was noted. However, the study did not include a control group and the teachers who rated the students were the same teachers who implemented the program. Therefore, results should be interpreted with caution.

Preschool PATHS was also studied in Turkey with a quasi-experimental design. Seyhan, Karabay, Tuncdemir, Greenberg, & Domitrovich (2017) examined the impact of implementing Preschool PATHS in the classrooms of 285 children aged 4-6 in Izmir, Turkey with 280 children of the same age range in the comparison group. Based upon classroom room observations, intervention teacher ratings, and child interviews, improvements were found in children's emotional regulation, interpersonal relationship skills, prosocial behavior, and problem-solving skills. In addition, higher levels of compliance and more positive feelings were observed and teachers reported more positive relationships with children. However, the study lacked randomization, observers blind to treatment conditions, and follow-up beyond preschool. Nevertheless, results of this study, along with those found in the study conducted in Croatia, suggest that Preschool PATHS shows promise in terms of cross cultural usage and warrants further research. Notably, a reduced version of PATHS for school-age children was adapted for first graders in three elementary schools in Hong Kong. Though the intervention was enacted for only 4 months, results of the pilot study showed improvement in students' emotion understanding and regulation and prosocial behavior (Kam, Wong, & Fung, 2011). PATHS (Preschool and School-age) appears to have been adapted and studied internationally more frequently than other SEL programs.

#### *Incredible Years: Dina Dinosaur Classroom Curriculum-Preschool/Kindergarten:*

The Incredible Years Dinosaur Social Skills and Problem-Curriculum, developed by Dr. Carolyn Webster-Stratton, is based on coercion theory and focuses on enhancing classroom management and climate and children's ability to self-regulate (Webster-Stratton & Reid, 2004). It is targeted for students in Pre-K through 2<sup>nd</sup> grade. Like Preschool PATHS, it teaches emotional awareness, empathy and perspective taking, friendship skills, anger management, and social-problem-solving, but also emphasizes teacher management skills, school rules and how to cope and succeed in a school setting (Webster-Stratton & Reid, 2004). When



implemented in whole classrooms, it consists of 60 lessons that are delivered 1 to 3 times per week for 45 minutes (Joseph & Strain, 2003). DVDs, puppets, games, and interactive activities are utilized in lessons. In addition, parent reinforcement of children's social-emotional skills is a key aspect of the program (Webster-Stratton & Reid, 2004).

Several studies have evaluated the efficacy of Incredible Years with preschoolers. In a randomized trial involving 1768 students enrolled in Head Start, kindergarten, and first grade classrooms in areas of high poverty, Webster-Stratton, Reid, & Stoolmiller (2008) found that students who participated in the program showed greater social competence and emotional self-regulation and fewer conduct problems. Students were observed by blinded observers at the beginning and end of the school year and effect sizes were particularly strong for children with the lowest initial scores. However, the students were not followed beyond the initial school year to determine if treatment effects were maintained. Head Start CARES Demonstration (2014) also evaluated Incredible Years as part of its randomized study and found that the program significantly reduced problem behaviors among the highest-risk children and showed a statistically significant improvement in children's knowledge of emotions, social-problem-solving, and prosocial behaviors. In addition, Incredible Years teachers received higher ratings than teachers in the control group on components of social emotional instruction. Surprisingly, given that Incredible Years is based upon coercion theory, impact on classroom climate was not found. Also, as noted previously, the study did not follow students' progress in kindergarten.

The 2013 CASEL Guide of Effective Social and Emotional Learning Programs deemed the Incredible Years Series effective in both increasing positive social behavior and reducing conduct problems based on randomized, controlled trial with diverse populations. Powell & Dunlap (2009) indicated similar results, noting that the Incredible Years Dinosaur Classroom Curriculum produced increased social competence and emotional self-regulation and decreased behavioral problems for children in Head Start. Additionally, they classified Incredible Years as efficacious in terms of treatment fidelity, replication across settings, and for use with ethnically and racially diverse groups.

In terms of cross cultural research of the Incredible Years Program, Posthumus, Raaijmakers, Maassen, van Engeland, & Matthys (2011) used a matched controlled design to evaluate the preventive impact on preschoolers in the Netherlands of the Incredible Years program for parents. 72 parents of children at risk for chronic conduct problems were compared to 72 families who received alternate treatment care. A decrease in observed conduct problems was found, which was maintained two years after the program had ended. However, as randomization was not possible, observed effects may have been due to variables other than participation in the program. In addition, the Incredibles Years Classroom Curriculum for Preschoolers was not included in the research and to date there have been no other cross cultural studies on the Incredibles Year Program. This is an area which requires further examination.

#### *Preschool RULER:*

Preschool RULER, developed at the Yale Center for Emotional Intelligence, was adapted from RULER, a school-wide intervention/ primary prevention program for elementary and middle schools aimed at

developing emotional intelligence in children and important adults in their lives, including parents and teachers. It integrates best practices that were determined from field tests and randomized controls of RULER, adjusting it to meet the needs of younger learners (Rivers, Tominey, O’Byron & Brackett, 2013a, 2013b). Preschool RULER emphasizes the development of trusting relationships between children and caregivers, explicit teaching of social and emotional skills with opportunities for real life practice, and exposure to strong teacher and parent modeling of these skills. Five key emotional skills are highlighted: recognizing, understanding, labeling, expressing, and regulating emotions. Preschool RULER is an approach in which social-emotional learning is embedded throughout the preschool day rather than featuring discrete weekly lessons. A feelings vocabulary is embedded into curricula and strategies for expressing emotions are role-played. Emotions of characters are highlighted when reading storybooks and personal stories are shared with students to highlight teachers’ experiences with emotion. Emotion-focused discussions are incorporated into learning centers and creative art activities (Rivers, et al., 2013a, 2013b). The program employs several key tools to help young children with emotional self-regulation, including the mood meter, the blueprint, and the meta-moment (Rivers, et al., 2013a, 2013b).

RULER, the kindergarten through 8<sup>th</sup> grade counterpart to Preschool RULER, has been integrated into hundreds of schools (Brackett, Rivers, Reyes, & Salovey et al., 2012). It has also undergone rigorous field testing and results of a randomized controlled trial indicate that RULER resulted in improved school climate, increased warmth and connectedness between teachers and students, and greater leadership among students (Rivers, Brackett, Reyes, Elbertson, Salovey, 2012). However, follow-up beyond the school year was not conducted. In addition, a quasi-experimental design found that RULER produced improved academic performance and increased positive social behavior (Brackett, et al., 2012). However, results should be interpreted with caution since the authors note that schools not students were assigned to treatment and control groups, but analyses were done at the student level. The 2013 CASEL Guide of Effective Social and Emotional Learning Programs classified RULER as effective in both improving academic skills and increasing prosocial behavior based on quasi-experimental design with diverse elementary school populations.

A pilot study of Preschool RULER was conducted in several early childhood centers of 156 preschoolers aged 3-5 of ethnically diverse backgrounds. Their social emotional skills were assessed at the beginning and the end of the school year and compared to a control group using the mood meter and tests of emotional labeling and recognition. Specifically, children’s mood meter scores were associated significantly with social and emotional skills. In addition, children at a treatment site using Preschool RULER during a second year of implementation exhibited significantly higher scores on both emotional labeling and recognition than children at the control site (Rivers, Tominey, Bailey, O’Byron, Olsen, Sneed, Peisch, Gal, & Brackett, 2015). While these results are promising and suggest that additional research of Preschool RULER would be beneficial, it should be noted that the study lacked randomization and follow-through into kindergarten and did not include direct observation of children’s classroom behaviors or a measure of academic achievement.

There have been no cross cultural studies of Preschool RULER. However, Castillo, Fernandez-Berrocal, & Brackett (2013) conducted a pilot study in Spain of RULER for school-aged students. Participants were teachers from public schools in Spain who participated either in training on RULER or eLearning. Some teachers in the study worked in pre-kindergarten classrooms. Results indicated that teachers who attended RULER training had significantly more positive scores on measures assessing teacher engagement, positive teacher-student interactions, and burnout. Notably, the study did not examine student outcomes. Moreover, the sample was rather small (47 teachers), randomization was not possible, and there was no comparison group in which teachers received no training at all. Nevertheless, this pilot study represents an attempt to address the significant gap in cross cultural research of RULER programs and suggests that further research in this area would be beneficial.

### *Al's Pals: Kids Making Healthy Choices*

Al's Pals is an early childhood prevention program and comprehensive social-emotional curriculum for children aged 3-8 years-old that was developed at the Virginia Institute for Developmental Disabilities at Virginia Commonwealth University (Al's Pals: Kids Making Healthy Choices, 2015). The curriculum is based on resiliency research and aims to foster social-emotional skills such as self-control, problem-solving, conflict resolution, and healthy decision-making. Teachers are trained to create nurturing classroom environments that strengthen children's personal and social skills and support the development of behaviors related to resiliency (Lynch, et al., 2004). Specifically, Al's Pals curriculum teaches young children to regulate their feelings and behaviors, engage in peaceful problem-solving and conflict resolution, and appreciate differences in others. It also seeks to prevent and address bullying and convey to young children the dangers of alcohol and drug use. A variety of materials are utilized during lessons, including puppets, books, and original music. Parent education is also incorporated into the program (Al's Pals: Kids Making Healthy Choices, 2015). Lessons consist of two 15-20 minute interventions per week for 23 weeks in total.

Al's Pals social-emotional curriculum has been implemented in 700 early childhood centers, preschools, daycare centers, and Head Start programs in 34 states in the USA (Al's Pals: Kids Making Healthy Choices, 2015). In addition, several studies have assessed the effectiveness of Al's Pals. Lynch et al. (2004) conducted a multi-year, multi-state evaluation of Al's Pals using first a pre-experimental and later a true experimental design. Findings indicated that Al's Pals strengthened children's social-emotional competence and positive coping skills and suppressed the development of antisocial behavior. These findings were observed across a number of different early childhood programs in a variety of geographic locations in the USA and were replicated over several years. However, a limitation of the study is that child outcome data is based primarily on teacher ratings, which could be subject to bias.

The 2013 CASEL Guide of Effective Social and Emotional Learning Programs deemed Al's Pals effective in increasing social behavior, reducing conduct problems, and reducing emotional distress based on quasi-experimental design with African-American and Caucasian students. Moreover, Powell & Dunlap (2009) noted similar child outcomes, including increased prosocial behavior and decreased problem behavior. They classified Al's Pals as efficacious in terms of treatment fidelity, replication across investigators and

settings, and for use with ethnically and racially diverse groups. There have been no cross-cultural studies conducted with the Al's Pals program.

## **Conclusion**

How do these four programs compare to the SEL meta-analyses and the research on preschool emotional development? Consistent with the findings of the meta-analytic studies, all four programs increase SEL skills. Three of the programs (PATHS, Al's Pals, Incredible Years) reduced conduct problems. RULER was effective for increasing academic achievement. Regarding the two major areas that are predictive of preschooler's academic and social-emotional development, three of the four programs (RULER, PATHS, Incredible Years) have components of emotional knowledge/recognition and all four have components of emotional regulation/self-control. These results suggest that the four programs have promise in promoting preschool development and future academic and personal-social success.

Regarding implementation, Humphrey, Lendrum, & Wigelsworth (2013) examined the findings of several studies of the social and emotional aspects of learning program (SEAL) in England and recommend that research be used to improve program design. Specifically, they note the recommendations by Durlak & Depre (2008) that programs which are sequenced, active, focused, and explicit have better student outcomes than those that were not. Both Humphrey, Barlow, & Lendrum, (2017) and Reyes, Brackett, Rivers, Elbertson, & Salovey, (2012) note that high quality implementation of the programs leads to better student outcomes and emphasize the importance of teachers' openness and buy-in with the curriculum.

One major limitation in the field of preschool SEL programs is the reliance on programs and research only in the USA. There is a need for more non-USA, international studies that can examine effective adaptations of SEL programs in specific countries and cultural contexts as well as identify the most universal components. Future research on preschool SEL programs would also benefit from longitudinal designs that can examine long-term effects as well as implementation with particular populations based on socio-economic factors, ethnic-differences and special needs. Nix, et al. (2013) recommends sustained interventions especially for students in lower socio-economic conditions in both rural and urban areas. Odom and Wolery (2003) note the importance of early interventions for students at risk for academic, social and behavioral problems and emphasize that preschool special education interventions to be grounded in empirically supported evidence.

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