Introduction

The *Second Step* program for early learning is a universal, classroom-based program designed to increase children's school readiness and social success by building social-emotional competence and self-regulation skills. This is a review of the research that supports the overall design and content of the program.

Social-Emotional Competence and Self-Regulation

Social-Emotional Competence

Children who are socially and emotionally competent have the skills to successfully manage their emotions and behavior, cooperate with others and form positive relationships, and make responsible decisions (Collaborative for Academic, Social, and Emotional Learning, 2007). Socially and emotionally competent children are better able to recognize and manage emotions, develop care and concern for others, and handle challenging situations constructively and ethically. Social-emotional competence helps children identify how they and others are feeling, make friends and handle disagreements with peers. The *Second Step* program for early learning supports skill development in four key areas of social-emotional competence: empathy and compassion, emotion management, friendship skills and problem solving, and Skills for Learning.

Children who learn social-emotional skills early in life are more self-confident, trusting, empathic, intellectually inquisitive, competent in using language to communicate, and capable of relating well to others (Cohen, Onunaku, Clothier, & Poppe, 2005). Socially competent children have the personal knowledge and skills to engage in enjoyable interactions, activities, and relationships with peers and adults (Han & Kemple, 2006; Leffert, Benson, & Roehlkepartan, 1997). Socially and emotionally competent children reap tremendous benefits from their ability to make friends and get along with peers and adults. Children who are socially and emotionally competent have more friends and more connections with positive peers, and are less likely to be rejected, isolated, and bullied. Children with friends are both happier and more successful in school (Guay, Boivin, & Hodges, 1999; Wentzel & McNamara, 1999).

Self-Regulation

Self-regulation is the ability to control and manage emotions, thoughts, and behaviors (Barkley, 2004; McClelland, Ponitz, Messersmith, & Tominey, 2010). Clearly, self-regulation and social emotional competence are overlapping constructs. Self-regulation is a key to school readiness that supports children's ability to be successful across multiple domains, from academic to social situations (Raver, 2003). Self-regulation allows children's behavior to be mindful, intentional, and thoughtful (Bodrova & Leong, 2005). The set of competencies that make up self-regulation include the ability to delay gratification, control impulses, pay attention, and stay on task (Han & Kemple, 2006; Kostelnik, Whiren, Soderman, Stein, & Gregory, 2002; Raver, 2003). Self-regulation can be taught in preschool classrooms, and instruction in self-regulation can benefit all children, not just "problem" children (Bodrova & Leong, 2005).

Social-Emotional Competence, Self-Regulation, and School Readiness

The goal of early education is to support young children's development of the skills and abilities required for school and life success. Providing young children with support for school readiness is critical to their long-term development (Gilliam, 2005). Successful transition into, and performance in, kindergarten lay the

foundation for future academic success or failure (Schulting, Malone, & Dodge, 2005). School readiness goes beyond fostering literacy and numeracy skills and includes developing the social-emotional skills for cooperating with others and forming and sustaining positive relationships with teachers and peers (National Scientific Council on the Developing Child, 2004). In a national study of what kindergarten teachers viewed as essential or very important readiness skills, less than a third named specific academic skills (such as knowing the names of colors and shapes, counting to 20, or recognizing letters) as compared to over 75 percent who highlighted skills such as being able to follow directions, not be disruptive, and communicate both needs and thoughts (Lin, Lawrence, & Gorrell, 2003).

When children enter early childhood programs, they are still learning how to manage and cope with their emotions (Cole, Michel, & Teti, 1994) and need to develop a sound emotional infrastructure that facilitates building solid relationships with their peers and teachers (Pitcl, Provance, & Kerslake, 2006). Fostering social-emotional skill development is a critical role for early learning programs (Denham, 2006; Shonkoff & Phillips, 2000) that is as important as literacy, language, and number skills in helping children be ready for school (Shonkoff & Phillips, 2000).

To be ready to succeed in school, children need to be able to cooperate with adult rules and requests, participate constructively in classroom activities, and get along with their peers (Thompson & Raikes, 2007). Young children are more likely to succeed in their transition to school if they can identify emotions in themselves and others accurately, relate to teachers and peers positively, manage feelings when faced with emotionally charged situations, and work independently and cooperatively in a classroom environment (Eisenberg & Fabes, 1992). There is strong evidence that these skills predict early academic achievement and that promoting these skills in preschoolers is critical for preparing them for a successful kindergarten transition (McClelland et al., 2007). When children begin kindergarten with strong social-emotional competence, they are more likely to be successful at transitioning into school, develop positive attitudes about school, and have higher grades and achievement in elementary grades (Birch, Ladd, & Blecher-Sass, 1997; Denham, 2006; National Scientific Council on the Developing Child, 2004). The social-emotional competence of young children predicts their academic performance in first grade, even when controlling for their actual cognitive skills and family backgrounds (Raver & Knitzer, 2002).

Unfortunately many children do not have the basic social-emotional and self-regulatory skills necessary to transition successfully to school or even be successful in preschool settings (Boyd, Barnett, Bodrova, Leong, & Gomby, 2005; Lin et al., 2003; McClelland, Acock, & Morrison, 2006; Raver & Knitzer, 2002). In one study, kindergarten teachers reported that more than half their children come to school unprepared for academic learning, and twenty percent are not socially-emotionally ready for school (Boyd et al., 2005). In another large national study, 46 percent of kindergarten teachers reported that over half of their children had inadequate self-regulation skills (Rimm-Kaufman, Pianta, & Cox, 2000).

Children can pay a high price when they lack the skills to succeed in a classroom environment. Children with poor social-emotional competence and self-regulation not only have more difficulty transitioning to school, they are at increased risk for low academic achievement, emotional and behavioral problems, peer rejection, and school dropout (Denham, 2006; Duncan et al., 2007; Eisenberg, Fabes, Guthrie, & Reiser, 2000; McClelland et al., 2006; Shaw, Gilliom, Ingoldsby, & Nagin, 2003; Vitaro, Brendgen, Larose, & Tremblay, 2005).

Preschool-age children who struggle with social-emotional skills are disruptive in the classroom, spend less time focused on tasks, and receive less instruction and positive feedback from their teachers. Additionally, opportunities for peer-to-peer learning are lost, and children who are disliked by their teachers and peers grow to like school and learning less (Raver, 2002). There is clear evidence that when young children are aggressive and are rejected by their peers in the early school years, they are at risk for long-term difficulties, including lower academic achievement, grade retention, dropping out of school, delinquency, and criminal behavior (Raver, 2002).

Children with social-emotional skill deficits also have high rates of expulsion from preschool classrooms (Gilliam & Shahar, 2006). In a national study of 3,898 prekindergarten classrooms, children were expelled at 3.2 times the rate for kindergarten through grade twelve students. Deficits in these skills predict whether a child will be held back to repeat kindergarten even when cognitive and language skills have been taken into account (Agostin & Bain, 1997). Preschool settings can support children's school readiness and help prepare them for higher levels of academic success (Ackerman & Barnett, 2005). Successful interaction with peers is a key developmental task of the preschool period (Denham et al., 2003). Developing skills in social competence is a complex task for young children, and once they acquire these skills, they need to learn how and when to use them (McCay & Keyes, 2002). Teachers can assist and guide children in developing and effectively using these skills by modeling them and assisting children in constructively managing and coping with their feelings and impulses (Han & Kemple, 2006).

Second Step Early Learning Program Units

Skills for Learning

The *Second Step* early learning program focuses on four self-regulation skills that children need in order to be ready for school. These are called Skills for Learning, and they are listening, focusing attention, self-talk, and being assertive. These skills support school readiness and prepare children for academic achievement, and children need to learn to integrate and apply these skills to be successful in classroom settings (McClelland et al., 2010). There is strong evidence that these Skills for Learning predict early academic achievement and promoting these skills in preschoolers is critical for preparing them for a successful kindergarten transition (McClelland et al., 2007). Children who enter Kindergarten with higher levels of Skills for Learning also have higher math, literacy, and vocabulary skills (Kroesbergen, Van Luit, Van Lieshout, Van Loosbroek, & Van de Rijt, 2009; Ponitz, McClelland, Matthews, & Morrison, 2009) and are ultimately more likely to graduate from high school (Vitaro et al., 2005). The benefits of the four self-regulatory skills taught in the Skills for Learning Unit go beyond academics; they also support the rest of the program content by providing a critical foundation for the development of social-emotional competence (McClelland et al., 2006).

Empathy

Empathy is a central aspect of emotional intelligence (Mayer & Salovey, 1997) and emotional competence (Saarni, 1997). Empathy is an emotional response that stems from recognizing and understanding another person's emotional state or feelings (Findlay, Girardi, & Coplan, 2006). Humans seem to be biologically predisposed to develop empathy; even infants will show signs of distress when other infants cry. Behaviors

such as touching or patting a distressed person, or giving the person something of comfort, such as a teddy bear, emerges between ages 1 and 2. Between 30 and 36 months of age, empathic responses become more complex, for example, comforting and helping a troubled child and asking an adult for help (Eisenberg, 2000; Lewis, 2000).

Empathy is a critical element of prosocial behavior, and prosocial behavior is linked with healthy peer interactions. Children who have good empathy skills tend to display more prosocial tendencies, such as assisting or helping others, comforting others, or being responsive to someone else's needs (Findlay et al., 2006). These types of skills are dependent on emotional skills (for example, understanding emotions and emotion regulation), are viewed positively by others, and are associated with healthy social-emotional functioning, including maintaining positive peer relations. In short, empathic children display more socially competent, sensitive, and appropriate behavior and attitudes, and have fewer social difficulties with peers (Findlay et al., 2006).

Empathy is related to both social competence and success in school settings. Being able to identify, understand, and respond in a caring way to how someone is feeling provides the foundation for helpful and socially responsible behavior, friendships, cooperation, coping, and conflict resolution. For example, children who are better at labeling and describing emotions are also better accepted by their peers (Crick & Dodge, 1994; Fabes et al., 1994). Being able to identify emotions accurately in themselves and others helps prepare children to start school successfully (Raver & Knitzer, 2002). Empathic children with good perspective-taking skills are less likely to be physically, verbally, and indirectly aggressive toward peers (Kaukiainen et al., 1999). Research shows that young children with higher levels of empathy tend to be less aggressive, better liked, and more socially skilled, and make greater progress in school than children with lower levels of empathy (Arsenio, Cooperman, & Lover, 2000; Crick & Dodge, 1994; Denham, McKinley, Couchoud, & Holt, 1990; Izard et al., 2001; Katsurada & Sugawara, 1998). Children with better perspective-taking skills are more likely to offer emotional support to others (Carlo, Knight, Eisenberg, & Rotenberg, 1991; Litvack-Miller, McDougall, & Romney, 1997), which is associated, in turn, with better grades and higher academic achievement in elementary school (Wentzel, 1991, 1993).

In the *Second Step* early learning program's empathy unit children build their emotional literacy by developing skills for identifying and labeling a variety of emotions in themselves and others. Increasing children's empathy helps create a foundation for the units that follow. In addition to building empathy, these lessons help prepare children for the Emotion-Management Unit by increasing their awareness of what they are feeling so they can identify and cope with strong emotions. Empathy also provides a critical interpersonal foundation for carrying out the skills learned in the Friendship Skills and Problem-Solving Unit. In this unit children begin to think about how other people feel in order to make friends and solve interpersonal problems.

Emotion Management
A child who manages emotions well has the self-regulation to cope with strong emotions and express them in socially acceptable ways (Eisenberg, Cumberland, & Spinrad, 1998). Emotion-management skills can be used for both positive emotions (for example, inhibiting the impulse to run excitedly in the hallway) and negative or distressing emotions (for example, inhibiting the impulse to hit another child who takes a toy or

ball away). Children who can manage their feelings in emotionally charged situations are more successful in the transition to formal schooling (Raver & Knitzer, 2002). More emotional competence at ages 3 to 4 increases children's social competence both at age 3 to 4 and in kindergarten (Denham et al., 2003).

When feelings are not managed or regulated well, thinking can be impaired; when the brain is dealing with unregulated emotion, it cannot learn (National Scientific Council on the Developing Child, 2004). Effective emotion management is related to decreased levels of aggression (Brady, Myrick, & McElroy, 1998; Underwood, Coie, & Herbsman, 1992; Vitaro, Ferland, Jacques, & Ladouceur, 1998), and increased levels of social-emotional competence (Eisenberg, Fabes, & Losoya, 1997). Children who have a hard time managing their emotions are more likely to have difficulties behaving in socially skilled ways (Eisenberg et al., 1997). Children with poor emotion-management skills are also prone to act impulsively on their emotions rather than using problem-solving skills such as analyzing situations, anticipating consequences, and planning (Donohew et al., 2000; Simons, Carey, & Gaher, 2004).

Research shows that children can learn a variety of cognitive-behavioral strategies to manage their emotions (Nelson & Finch, 2000) and cope with stressful situations. For example, they can learn techniques to stop themselves, name their feeling, take deep belly breaths, and relax. Research suggests that teaching children to recognize strong feelings and use deep breathing and other stress-reducing strategies to "stay in control" can be effective ways to increase coping and reduce aggression and other problem behaviors (Lochman, 1992; Lochman, Burch, Curry, & Lampron, 1984).

Second Step emotion management lessons emphasize coping with situations that provoke strong feelings. Children are taught proactive strategies, such as identifying feelings and deep, centered breathing, to prevent strong feelings from escalating into negative behavior. When children are better able to focus and stay calm, they may be more likely to think about a situation before responding, rather than acting on their first impulse. It is important that children learn to take positive action early in their conflicts so that they can calm down before they are overwhelmed by emotion. Once an emotion becomes overwhelming, strong physiological reactions keep children from being able to reason well, and they have trouble using emotion-management strategies (Metcalfe & Mischel, 1999). It can then take several minutes for their bodies and minds to return to normal. The ability to keep from escalating and being driven by strong emotions allows children the chance to employ many of the other skills taught in the program such as assertiveness, problem solving, and friendship skills.

Having the skills to manage strong emotions such as anger, disappointment, frustration, worry, and excitement can improve children's ability to get along with their peers and make good choices. Children who struggle with anxiety and are thus more likely to lack effective coping skills and misperceive situations as threatening (Greenberg, Domitrovitch, & Bumbarger, 1999), may also benefit from *Second Step* lessons on calming down in stressful situations.

Finally, in the Emotion-Management Unit, children are encouraged to use and increase their feelings vocabulary. Research on affective education programs has shown that children's verbal fluency in labeling and discussing emotions can be increased, and that such gains are linked to improved self-control and interpersonal problem solving (Greenberg, Kusche, Cook, & Quamma, 1995).

Friendship Skills and Problem Solving

In the Friendship Skills and Problem-Solving Unit, children are taught that when they are having a problem with peers, it is important to calm down first, and then describe the problem and come up with lots of safe ideas for solving it. These steps are the first two steps of the more comprehensive problem solving model children learn in *Second Step* during the elementary grades. The sequence of Problem-Solving Steps is based on what we know about effective patterns of thinking in social situations, and research shows that children's social problem-solving skills can be improved (Denham & Almeida, 1987). Aggressive children often have different patterns of thinking than less aggressive children do when they interact with their peers (Crick & Dodge, 1994; Rubin, Bream, & Rose-Krasnor, 1991), and are especially vigilant for threats in the environment. One significant problem is that aggressive children are more apt to interpret others' behaviors toward them as being hostile (Dodge & Frame, 1982). Their negative interpretations are important, because when children believe that peers are treating them hostilely, they are more likely to choose aggression in response. Aggressive children are also more likely to both think of aggressive solutions to problems and do the first thing they think of, so it is important to practice generating multiple solutions that are safe.

After having become familiar with the Calming-Down Steps in earlier lessons, in the Friendship Skills and Problem-Solving Unit children learn the first two of the *Second Step* Problem-Solving Steps: (1) S: Say the problem use words to describe the problem; and (2) T: Think of solutions; generate safe solutions. Teaching these skills can help reduce impulsive behavior, improve social adjustment, and prevent violence and other problems that affect the success of children and youth (Hawkins, Farrington, & Catalano, 1998; Shure & Spivack, 1980, 1982; Tolan & Guerra, 1994).

The Problem-Solving Steps lead children through constructive prosocial thought processes that are consistent with the social information-processing model described by Crick and Dodge (1994). Children must become aware of social cues, which is the focus of the Empathy Unit. Children are guided to practice thinking about how the other the other person is feeling when there is a problem. Children also need to "read" the social situation. To help children with this skill, *Second Step* lessons in the Friendship Skills and Problem Solving unit direct children to "Say the problem" to encourage them to use their words to describe the situation. In addition, children are encouraged to select prosocial goals for social interactions. This perspective is taught indirectly in the *Second Step* lessons when children learn to generate possible solutions that are safe.

To reiterate, positive social connections with peers support children's school readiness and are very important for children's happiness and successful development. In addition to problem solving, the Friendship Skills and Problem-Solving Unit helps children develop other skills for making and keeping friends. Children learn three specific different Fair Ways to Play (playing together, trading, and taking turns). Lessons in this unit also focus on important social skills for younger children, such as learning how to join in others' play, learning how to invite others in to their own play, and the prosocial goal of having fun with friends rather than focusing on getting one's own way.

Brain Builders

Preschool classrooms can effectively strengthen children' social-emotional competence and self-regulation through highly planned, teacher-led, direct instruction and structured routine activities combined with on-the-spot naturalistic coaching, modeling, and reinforcement of skills (Han & Kemple, 2006). Brain Builders are a simple and fun way for teachers to reinforce skills children are learning during the weekly themes and a unique way to build the skills most useful for success in the classroom environment. The Brain Builders are designed to increase children's ability to focus their attention, remember directions and other information, and control their impulses.

Research has shown that teachers can positively affect these aspects of children's self-regulatory ability, more technically referred to as attention, working memory, and inhibitory control. These skills, sometimes referred to as executive-function skills, are critical to success in classroom settings. Attention refers to the ability to direct, focus, and shift attention while screening out or ignoring distractions (Barkley, 1997; Rothbart & Posner, 2005). Working memory involves the ability to remember and use information, such as a teacher's directions or the directions for an activity (Demetriou, Christou, Spanoudis, & Platsidou, 2002; Ponitz et al., 2009). Inhibitory control helps children stop automatic but inappropriate responses or actions and remember appropriate behaviors, such as raising a hand before speaking (Blair, 2002; Rennie, Bull, & Diamond, 2004).

Young boys with good attention control have been shown to be more likely to avoid aggression by using nonhostile verbal responses when angry (Eisenberg, Fabes, Nyman, Bernzweig, & Pinulas, 1994). A study of over 1,000 children found that the ability to sustain attention and inhibit impulses helped buffer the effects of negative family environment on preschoolers' school readiness (NICHD Early Child Care Research Network, 2003). Multiple studies have found that inhibitory control affects academic achievement (Blair & Razza, 2007; St. Clair-Thompson & Gathercole, 2006). Working memory has also been shown to be connected to children's early math, reading, and cognitive skills (Gathercole & Pickering, 2000; Kail, 2003; St. Clair-Thompson & Gathercole, 2006), to predict language comprehension skills in 4- and 5-year-olds (Adams, Bourke, & Willis, 1999) and mathematics ability in children aged 6 to 8 (Bull & Scerif, 2001), and to be important for early literacy development (McClelland et al., 2007). Children with higher inhibitory control show more positive adaptation to preschool environments, including teacher-reported social competence (Blair, 2002), and tend to have more regulated emotion control (Kochanska, Murray, & Harlan, 2000).

Attention, working memory, and inhibitory skills can all be improved through experiences in classroom settings (Morrison, Ponitz, & McClelland, 2010). One way to develop these abilities is through games that directly challenge and provide practice for these skills (Burchinal, Peisner-Feinberg, Bryant, & Clifford, 2000). Games with explicit rules can help children build school readiness skills useful for academic learning (Bodrova & Leong, 2007). The *Second Step* early learning program includes games, known as Brain Builders, designed to be played one or more times every day. They get progressively harder over the course of the program as children's skills improve. This approach has been inspired partly by the research of Dr. Megan McClelland, based on her work developing tools for evaluating and improving aspects of children's self-regulation critical for school readiness and success (McClelland et al., 2006; McClelland et al., 2007). Her work has included research showing that games like the Brain Builders can be used successfully to improve children's self-regulation skills (Tominey & McClelland, 2010).

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